AGENDA
EL SEGUNDO CITY COUNCIL
COUNCIL CHAMBERS - 350 Main Street

The City Council, with certain statutory exceptions, can only take action upon properly posted and listed agenda items. Any writings or documents given to a majority of the City Council regarding any matter on this agenda that the City received after issuing the agenda packet are available for public inspection in the City Clerk’s office during normal business hours. Such Documents may also be posted on the City’s website at www.elsegundo.org and additional copies will be available at the City Council meeting.

Unless otherwise noted in the Agenda, the Public can only comment on City-related business that is within the jurisdiction of the City Council and/or items listed on the Agenda during the Public Communications portions of the Meeting. Additionally, the Public can comment on any Public Hearing item on the Agenda during the Public Hearing portion of such item. The time limit for comments is five (5) minutes per person.

Before speaking to the City Council, please come to the podium and state: Your name and residence and the organization you represent, if desired. Please respect the time limits.

Members of the Public may place items on the Agenda by submitting a Written Request to the City Clerk or City Manager’s Office at least six days prior to the City Council Meeting (by 2:00 p.m. the prior Tuesday). The request must include a brief general description of the business to be transacted or discussed at the meeting. Playing of video tapes or use of visual aids may be permitted during meetings if they are submitted to the City Clerk two (2) working days prior to the meeting and they do not exceed five (5) minutes in length.

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact City Clerk, 524-2305. Notification 48 hours prior to the meeting will enable the City to make reasonable arrangements to ensure accessibility to this meeting.

REGULAR MEETING OF THE EL SEGUNDO CITY COUNCIL
TUESDAY, JANUARY 19, 2016 – 5:00 PM

5:00 P.M. SESSION

CALL TO ORDER

ROLL CALL

PUBLIC COMMUNICATION – (Related to City Business Only – 5 minute limit per person, 30 minute limit total) Individuals who have received value of $50 or more to communicate to the City Council on behalf of another, and employees speaking on behalf of their employer, must so identify themselves prior to addressing the City Council. Failure to do so shall be a misdemeanor and punishable by a fine of $250.
SPECIAL ORDER OF BUSINESS:

CLOSED SESSION:

The City Council may move into a closed session pursuant to applicable law, including the Brown Act (Government Code Section §54960, et seq.) for the purposes of conferring with the City’s Real Property Negotiator; and/or conferring with the City Attorney on potential and/or existing litigation; and/or discussing matters covered under Government Code Section §54957 (Personnel); and/or conferring with the City’s Labor Negotiators; as follows:

CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION (Gov’t Code §54956.9(d)(1)): -1- matter

1. City of El Segundo vs. City of Los Angeles, et.al. LASC Case No. BS094279

CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION

Significant exposure to litigation pursuant to Government Code §54956.9(d)(2): -1- matter.


DISCUSSION OF PERSONNEL MATTERS (Gov’t Code §54957): -0- matter

APPOINTMENT OF PUBLIC EMPLOYEE (Gov’t. Code § 54957): -0- matter

PUBLIC EMPLOYMENT (Gov’t Code § 54957) -0- matter
1. **Employee Organizations:** Police Management Association; Police Officers Association; Police Support Services Employees Association; Supervisory and Professional Employees Association; City Employees Association; Executive Management Group (Unrepresented Group); Management/Confidential Group (Unrepresented Group)

   Agency Designated Representative: Steve Filarsky and City Manager

**CONFERENCE WITH REAL PROPERTY NEGOTIATOR (Gov't Code §54956.8):**

-0-matters
AGENDA
EL SEGUNDO CITY COUNCIL
COUNCIL CHAMBERS - 350 Main Street

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REGULAR MEETING OF THE EL SEGUNDO CITY COUNCIL
TUESDAY, JANUARY 19, 2016 - 7:00 P.M.

7:00 P.M. SESSION

CALL TO ORDER

INVOCATION – Tracy Weaver, City Clerk

PLEDGE OF ALLEGIANCE – Council Member Dugan
PRESENTATIONS

a) Presentation - 2015 Chamber of Commerce Holiday Parade Winners

b) Presentation - El Segundo Police Department, Chief Mitch Tavera, concerning the department’s Active Shooter Program.

ROLL CALL

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CITY COUNCIL COMMENTS – (Related to Public Communications)

A. PROCEDURAL MOTIONS

Consideration of a motion to read all ordinances and resolutions on the Agenda by title only.
Recommendation – Approval.

B. SPECIAL ORDERS OF BUSINESS (PUBLIC HEARING)

C. UNFINISHED BUSINESS
1. Consideration and possible action to amend the Settlement Agreement between the City of El Segundo and Wiseburn School District related to the design and construction of a joint use aquatics facility located on school district property at 201 N. Douglas Street and authorize payment of $300,000 from the Aquatics Trust Account to cover costs associated with the architectural design phase.

(Fiscal Impact: $300,000.00)

Recommendation – 1) Authorize the Mayor to execute the amended settlement agreement in a form approved by the City Attorney; 2) Authorize the City Manager to pay $300,000 to Wiseburn Unified School District for architectural design services in accordance with the amended settlement agreement; 3) Alternatively, discuss and take other action related to this item.

D. REPORTS OF COMMITTEES, COMMISSIONS AND BOARDS

E. CONSENT AGENDA

All items listed are to be adopted by one motion without discussion and passed unanimously. If a call for discussion of an item is made, the item(s) will be considered individually under the next heading of business.

2. Warrant Numbers 3008943 through 3009198 on Register No. 6 in the total amount of $1,159,639.70 and Wire Transfers from 11/30/2015 through 12/13/2015 in the total amount of $3,624,085.27. Warrant numbers 3009199 through 3009384 on Register No. 7 in the total amount of $842,104.06 and Wire Transfers from 12/14/2015 through 1/10/2016 in the total amount of $2,602,926.33.

Recommendation – Approve Warrant Demand Register and authorize staff to release. Ratify Payroll and Employee Benefit checks; checks released early due to contracts or agreement; emergency disbursements and/or adjustments; and wire transfers.


Recommendation – Approval.
4. Consideration and possible action to receive and file this report regarding emergency work to repair dwelling units at the Park Vista Senior Housing Facility due to water intrusion without the need for bidding in accordance with Public Contracts Code §§ 20168 and 22050 and El Segundo Municipal Code ("ESMC") §§ 1-7-12 and 1-7A-4.
(Fiscal Impact: $50,000.00)
Recommendation – 1) Receive and file this report regarding emergency work to repair dwelling units at the Park Vista Senior Housing Facility due to water intrusion without the need for bidding in accordance with Public Contracts Code §§ 20168 and 22050 and El Segundo Municipal Code ("ESMC") §§ 1-7-12 and 1-7A-4 2) Alternatively, discuss and take other action related to this item.

5. Consideration and possible action to amend a standard Public Works Contract with Jose Angel Fierros (dba FS Construction) for FY 2015/16 Curb, Cutter, Sidewalk, and other Concrete Improvements. Project No. PW 14-16.
(Fiscal Impact: $200,000.00)
Recommendation – 1) Authorize the City Manager to execute a Public Works contract amendment with Jose Angel Fierros (dba FS Construction), in a form as approved by the City Attorney, for $200,000.00 for the FY 2015-16 curb, gutter, sidewalk and other concrete improvements; 2) Alternatively, discuss and take other action related to this item.

6. Consideration and possible action regarding the adoption of Ordinance No. 1516 for a Zone Change from the Light Manufacturing (M-1) Zone to the El Segundo South Campus Specific Plan (ESSCSP) Zone, a Zone Text Amendment, a Specific Plan, and a Development Agreement on the site located at 2000-2100 East El Segundo Boulevard. Applicant: The Raytheon Company
(Fiscal Impact: If approved, the project would provide $4,000,000 in direct payment revenue; up to $1,071,228 in direct payment revenue related to development fee per square foot; an estimated $11,893,000 roadway infrastructure; $75,000 for bicycle parking; and potentially $375,000 for wastewater infrastructure improvements)
Recommendation – 1) Waive second reading and adopt Ordinance No. 1516; 2) Alternatively, discuss and take other possible action related to this item.
7. Consideration and possible action to waive the formal bidding process pursuant to the El Segundo City Code Section 1-7-10 and authorize the Fire Department to piggy-back on a City of Palo Alto Fire Department’s Request for Quotation, RFQ 159018, for the purchase of a replacement Fire Engine manufactured by Pierce Manufacturing Inc.
(Fiscal Impact: $668,982.00)
Recommendation – 1) Pursuant to El Segundo City Code Section 1-7-10, waive the formal bidding process and authorize the Fire Department piggy-back on a City of Palo Alto Fire Department RFQ 159018, for the purchase of a replacement Fire Engine manufactured by Pierce Manufacturing Inc.; 2) Alternatively, discuss and take other action related to this item.

F. NEW BUSINESS

8. Consideration and possible action to award a standard General Services contract to the lowest responsible bidder, Sierra School Equipment Company, for the Council Chambers Theater Seating Refinishing Project.
Project No.: PW 15-29A.
(Fiscal Impact: $38,178.00)
Recommendation – 1) Authorize the City Manager to execute a standard General Services Agreement, in a form as approved by the City Attorney, with Sierra School Equipment Company, in the amount of $28,178.00; 2) Authorize additional funding for carpet materials and installation; 3) Alternatively, discuss and take other action related to this item.

G. REPORTS – CITY MANAGER

H. REPORTS – CITY ATTORNEY

I. REPORTS – CITY CLERK
9. Consideration and possible action to: 1) Introduce an ordinance to amend section 1-4-2 of the El Segundo Municipal Code ("ESMC") relating to the selection of the mayor and mayor pro tem; 2) Adopt a resolution amending City Council Resolution 4945 calling for the April 12, 2016 General Municipal Election, to amend the language in Section 1 to read "Vote for no more than three". (Fiscal Impact: None)

Recommendation – 1) Introduce and waive the first reading of the ordinance; 2) Adopt the resolution; 3) Alternatively, discuss and take other action related to this item.

J. REPORTS – CITY TREASURER

K. REPORTS – CITY COUNCIL MEMBERS

Council Member Fellhauer –

Council Member Atkinson –

Council Member Dugan –

Mayor Pro Tem Jacobson –

Mayor Fuentes –

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MEMORIALS –

CLOSED SESSION
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REPORT OF ACTION TAKEN IN CLOSED SESSION (if required)

ADJOURNMENT

POSTED:

DATE: 1·13·16
TIME: 3:00 pm
NAME: [Signature]

[Signature]
Presentation

2015 Chamber of Commerce

Holiday Parade Winners
Presentation

El Segundo Police Department, Chief Mitch Tavera

Active Shooter Program
EL SEGUNDO CITY COUNCIL

MEETING DATE: January 19, 2016

AGENDA ITEM STATEMENT

AGENDA DESCRIPTION:

Consideration and possible action to amend the Settlement Agreement between the City of El Segundo and Wiseburn School District related to the design and construction of a joint use aquatics facility located on school district property at 201 N. Douglas Street and authorize payment of $300,000 from the Aquatics Trust Account to cover costs associated with the architectural design phase.

(Fiscal Impact: $300,000)

RECOMMENDED COUNCIL ACTION:

1. Authorize the Mayor to execute the amended settlement agreement in a form approved by the City Attorney;
2. Authorize the City Manager to pay $300,000 to Wiseburn Unified School District for architectural design services in accordance with the amended settlement agreement; and
3. Alternatively, discuss and take other action related to this item.

ATTACHED SUPPORTING DOCUMENTS: None

1. Amended Settlement Agreement

FISCAL IMPACT: $300,000

<table>
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<tr>
<th>Amount Budgeted:</th>
<th>$300,000</th>
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<td>Additional Appropriation:</td>
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<tr>
<td>Account Number(s):</td>
<td>From 702-267-0000-1267 (Designation – Aquatics) To 702-400-5202-8476 (Trust – Aquatics Facility)</td>
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PREPARED BY: Meredith Petit, Director of Recreation & Parks
REVIEWED BY: Greg Carpenter, City Manager
APPROVED BY: Greg Carpenter, City Manager

BACKGROUND & DISCUSSION:

On May 21, 2013, the City of El Segundo and Wiseburn School District entered into a Settlement Agreement for the purposes of resolving a dispute regarding the proposed site of Wiseburn High School, 201 N. Douglas Street. A summary of each party’s obligations of the agreement are outlined below:

Wiseburn Obligations

- **Aquatics Facility** – Wiseburn agreed to improve 2 acres of its property with an aquatics facility consisting of a 50-meter competition pool, restrooms and locker facilities and aquatics facility parking lot and, if the budget allows, a smaller therapy pool.
- **Facility Financial Commitment** – Wiseburn agreed to commit $6,000,000 to the construction of the aquatics facility.
- **Joint Use Agreement** – Wiseburn and the City would negotiate a joint use agreement for the use of the Aquatics Center to accommodate Wiseburn, ESUSD, and the general public. The City and Wiseburn also agreed to explore joint use of the other athletic facilities at the proposed high...
school and the Campus El Segundo athletic fields.

- **Term of the Agreement** – the term of the agreement would be after 25 years with the City having the ability to extend the agreement for an additional 25 years.
- **Timing** – Wiseburn agreed to prepare a modification to its EIR and prepare plans for the aquatics facility in a timely manner. The intent is to have the facility complete in late 2015. If the pool is not complete by June of 2017, a liquidated damages payment of $1.5 million would be paid to the City of El Segundo.

**City of El Segundo Obligations**

- **Dispute Resolution** – The City agreed to not dispute the EIR and not pursue a legal challenge related to the EIR or the purchase of the property.
- **Operations and Maintenance** – The City agreed to staff, operate and maintain the aquatics facility. While the intent would be to operate the facility throughout the term of the agreement, the city must, at a minimum, fully operate the facility for one year and operate it at a level that supports the school district’s use for at least 5 years.
- **Grand Avenue Extension** – The City’s General Plan anticipates Grand Avenue to be extended through this site at some future date. The City agreed to not extend the street through the property for as long as the property is used for a high school.

Since the execution of the original Settlement Agreement, the City and Wiseburn have worked cooperatively to explore facility design options, collect community feedback, and utilize the services of a consultant to conduct a financial analysis. On March 3, 2015, the City Council voted to select an upgraded pool design estimated to cost $10,600,000, and designated $1,800,000 from the City’s Aquatics Trust Account to the project, with the ultimate desire to seek donations to cover the funding gap beyond the $6,000,000 contribution from Wiseburn.

Due to developments that have occurred over the past two years it is necessary to update the original Settlement Agreement to ensure that the terms remain accurate as the project continues. The major revisions of the proposed amended agreement are outlined below:

- **Removal of Outdated Language** – much of Section 1 of the original agreement is no longer applicable as it is pertaining to the land use planning stages including purchase, zoning, EIR and CEQA requirements.
- **Project Description** – Section 2B has been updated to reflect the desired “Upgrade Option” for the facility, including the pool dimensions and auxiliary amenities.
- **Funding** – Sections 2C, 7C and 7D reflect an agreement that both parties will cooperate in efforts to seek outside funding to complete the project, and furthermore, should funding not be adequate that both parties will cooperate to reduce the cost of the facility through value engineering, reduction in scope, and/or elimination of equipment.
- **El Segundo Unified School District Usage** – Section 4A was revised to clarify that usage of the aquatics facility by ESUSD will be arranged through a separate Joint Use Agreement between the City and ESUSD.
- **Term of Operation** – Section 4B added a subsequent 25-year option to the term of the Joint Use Agreement, totaling 75 years.
- **Updated Reserve Fund Amounts** – Section 4C adjusted the annual amount each party is required to contribute to the replacement reserve fund, based on the updated construction costs and facility/equipment value. Additionally, Wiseburn Unified School District and Da Vinci Schools will contribute the City’s portion.
• **School Enrollment** – Section 6C increases the high school enrollment cap from 1,200 to 1,600 students

• **Design Phase Funding** – Section 7E states that the City of El Segundo agrees to provide $300,000 (non-refundable) to the District within 30 days of District receiving approved plans from the Division of the State Architect to share the costs of the architectural design phase.

• **Completion Date** – Section 9A provides an updated completion date of not later than July 31, 2018.

After the amended settlement and design payment is approved by the City Council, the architectural design phase will commence for the aquatics center, including detailed drawings and specifications, as well as equipment and material selections for the facility’s amenities.
FIRST AMENDED AND RESTATED SETTLEMENT AGREEMENT BETWEEN
THE WISEBURN UNIFIED SCHOOL DISTRICT AND
THE CITY OF EL SEGUNDO

This Agreement ("Agreement") is made and entered into this 19th day of January 2016 by and between the Wiseburn Unified School District, a school district organized in accordance with the California Education Code ("District") and the City of El Segundo, a general law city and municipal corporation ("City"). These parties may also be referred to in this Agreement individually as a "Party" and collectively as "Parties."

1. RECITALS. This Agreement is entered into with reference to the following facts and objectives:

A. On May 22, 2013, the Parties entered into a Settlement Agreement that resolved a dispute regarding District’s High School and the Property (the "Original Agreement"). To the extent they are applicable, the definitions set forth in the Original Agreement are incorporated into this Agreement by reference.

B. To the extent they continue to be relevant for purposes of this Agreement, the recitals set forth in Section 1 of the Original Agreement are incorporated by reference.

C. Since the Original Agreement was executed, representatives from each Party met to implement the terms and conditions of the Original Agreement.

D. Following a revision to the Project and an Addendum to the FEIR approved on November 20, 2014, the Parties identified additional mutual interests for helping to resolve the Dispute. Among other things, the Parties seek to construct a larger Aquatics Center than anticipated in the Original Agreement.

E. The District Board and City’s City Council believe that the public interest is served by settling the Dispute on the terms provided in this Agreement. This Agreement is intended by the Parties to resolve the Dispute in all respects.
FOR AND IN CONSIDERATION of the above-referenced recitals and the promises and covenants contained in this Agreement, the Parties agree as follows:

2. AQUATICS CENTER.

A. As described below, District agrees to design, and, if approved by the District Board, District agrees to cause construction of an “Aquatics Center” on the Property.

B. At a minimum, the Aquatics Center must encompass approximately two (2) acres at the northwest corner of the Property and include the following:

i. An outdoor 54 x 25 meter pool for swimming, water polo, physical education/recreational use. In addition, based on the El Segundo “Upgrade Option,” the Aquatics Center should include a snack or small kitchen facility and a four lane shallow warm up pool with separate changing facilities for men and women. If the Aquatics Center budget allows (as reasonably determined by each Party), the Aquatics Center should include spring board diving board.

ii. Two moveable bulkheads for short course swim.

iii. Associated support structures/facilities to include at a minimum locker rooms and restrooms with an additional family restroom.

iv. Separate meters for electricity, water, and gas to be installed to differentiate the Aquatics Center from the rest of the High School. If the Aquatics Center budget allows (as reasonably determined by each Party), the Aquatics Center should include a Cogeneration system.

v. The Aquatics Center may include solar panels to reduce the cost of utilities.

vi. The original conceptual design for the Aquatics Center is attached as Exhibit “A,” and incorporated by reference (the “Conceptual Design”) and
the New El Segundo Upgrade Option is attached in Exhibit "B" and incorporated by reference "New El Segundo Upgraded Option."

C. If, before construction commences on the Aquatics Center, the final budget for the Aquatics Center provides inadequate funding for all of the options identified in Section 2(B), then the Parties agree to cooperate to reduce the cost of the Aquatic Center through value engineering; eliminating or reducing elements; and otherwise redesigning the Aquatics Center to make it more cost effective.

D. The Final Design.
   i. The Final Design for the Aquatics Center must be consistent with all requirements of applicable law including, without limitation, the Education Code and California State high school facility requirements.
   ii. The Final Design for the Aquatics Center will be consistent with, not be materially different from, and not be smaller than the Conceptual Design.
   iii. District will form a Design Committee for the Aquatics Center and City will be entitled to representation on this Committee. District will accommodate, to the extent reasonable and feasible, the comments of City. Except as set forth in clause (iv) with respect to equipment choices for the Aquatics Center, the determination of the ultimate Final Design for the Aquatics Center rests with the District Board.
   iv. With respect to decisions about equipment choices relating to operation efficiencies of the Aquatics Center and the quality of the equipment, District must implement the recommendations of City provided that such recommendations do not cause District’s total costs for the Aquatics Center to exceed project funding/budget of $6,000,000 as specified in Section 6(A) below, or City pays for any costs in excess of this amount.
   v. Should City and District have a dispute regarding matters under clause (iv), District and City agree to submit such a dispute to nonbinding
mediation as quickly as is practicable. The mediator must be a person specializing in construction matters related to public agencies. If agreement can be reached, the Parties agree to enter into a written mediation settlement agreement setting forth the terms and conditions of the issues upon which the parties have come to an agreement. If the Parties enter into a mediation settlement agreement, it may be enforced in any court of competent jurisdiction. Both Parties agree to share the fees and costs of the mediation equally except that legal, witness, and expert costs are the direct responsibility of each individual Party.

E. None of the Parties may take any action in using, operating, or running the Aquatics Center that would jeopardize the tax exempt status of the bonds used to construct the Project and the Aquatics Center.

F. The Aquatics Center will be named “City of El Segundo – Wiseburn Unified School District Aquatics Center”, or such other name as mutually agreed to by District and City.

3. PROCESSING AQUATICS CENTER PROJECT.

A. Timing Milestones/Requirements:
   i. If the amended settlement agreement is approved by District Board, District must immediately modify its Project plans to include the Aquatics Center and submit such plans to the Division of State Architect ("DSA") as soon as reasonably practical.
   ii. Once DSA approves the Aquatics Center plans, District must undertake construction pursuant to its normal procedures in a timely fashion. District must inform City on an ongoing basis regarding District’s progress and be provided the Notice Inviting Bids, as well as construction schedules submitted by the successful bidder.
iii. For any future change to the Aquatics Center, District will remain lead agency for CEQA purposes. Designation as lead agency does not require District to bear any or all costs of any future modification.

4. AQUATICS CENTER JOINT USE AGREEMENT.

A. The Parties agree to separately enter into a Joint Use Agreement ("JUA") for use of the Aquatics Center in accordance with the requirements of this Agreement. The JUA will be executed by the Parties to this Agreement only; no other person including, without limitation, the ESUSD, will be a party to the JUA or a third-party beneficiary. City may, in its sole discretion, determine how (or if) ESUSD may access or use the Aquatics Center other than as provided in this Agreement.

B. The JUA for the Aquatics Center must, at a minimum, provide as follows:

i. The term must be at least 25 years with a 25 year renewal option, and a subsequent 25 year renewal option that may only be exercised at City’s request.

ii. The form of the JUA must be substantially similar to existing joint facility use agreements between school districts and cities in California.

iii. Unless otherwise provided in the JUA, District and ESUSD will have exclusive (i.e., public use is prohibited during these times) and equal use of the Aquatics Center, including the therapy pool, Monday through Friday, for a maximum of six hours per day for the period commencing one week before the start of the District’s School Year through the end of the District’s School Year, and on select pre-agreed upon, non-school days which days cannot exceed twelve days per year. All other hours will be governed in accordance with Section 4(B)(vi) of this Agreement. The JUA may utilize a method for making changes to this schedule without amending this Agreement. For any such schedule, however, District and ESUSD uses must have priority over other recreational uses. Before the
academic year commences, District, ESUSD and City will develop a master calendar for Aquatics Center use. The District and the City agree to cooperate and entertain flexibility concerning scheduling of the uses of the Aquatic Center.

iv. District’s and ESUSD’s use of the Aquatics Center must be equitably determined by the JUA to accommodate, among other things, the El Segundo High School swim teams or water polo teams during times identified by the JUA to which the ESUSD may be a party.

v. City will have exclusive use of the Aquatics Center, including the therapy pool, during all days and times that District and/or ESUSD do not have such exclusive use. If District and ESUSD have different exclusive use periods and ESUSD has no objection, City may use the therapy pool during ESUSD’s sole exclusive use period. At all times during which City has use of the Aquatics Center, City may utilize its park permitting regulations as set forth in El Segundo Municipal Code ("ESMC") §§ 9-8-1, et seq. for purposes of scheduling events at the Aquatics Center with the understanding that all persons residing in the District’s boundaries are considered City residents for purposes of the Aquatics Center only and entitled to use the Aquatics Center on the same terms and conditions as residents of the City. If it is determined that the park permitting regulations violate the bond restrictions, appropriate adjustments will be made by the City.

vi. Except as otherwise provided, City will operate the Aquatics Center for the term of the JUA. After the Aquatics Center receives its certificate of occupancy, however, City may cease operations after providing District with a two-year written notice. Notwithstanding City’s ability to cease operations, City will nevertheless, at a minimum, maintain and repair the
pool and therapy pool for use by District students for at least five years after the Aquatics Center receives its certificate of occupancy.

vii. City will provide as much notice as practicable before terminating the JUA.

viii. The JUA must contain a mutual defense, indemnification and hold harmless provision.

ix. The JUA must contain a requirement that each Party maintain appropriate levels of insurance to cover their respective use of the Aquatics Center in an amount to be agreed upon in the JUA.

x. The cost of utilities will be allocated between District and City based on their respective exclusive use periods for the Aquatics Center.

xi. During the term of the JUA, District’s share of revenue from the operation of the Aquatics Facility must be allocated to City to offset City’s share of operation and maintenance costs.

xii. ESUSD’s use of the Aquatics Center will be conditioned, at minimum, upon ESUSD agreeing to the mutual defense, indemnification and hold harmless, and providing necessary insurance.

C. Replacement Reserve Fund.

i. District and City will establish a replacement reserve fund ("Replacement Reserves") to be maintained by District. The timing of the payments will be governed by the JUA. The Replacement Reserves must be used by District to make necessary capital improvements. City is not entitled to reimbursement of any Replacement Reserves if it terminates the JUA, or the JUA expires, before the expenditure of such funds.

ii. For the initial 25 year term of the JUA, District must contribute the sum of $40,000 annually to the Replacement Reserves.
iii. If the second 25-year term of the JUA is exercised, District will annually contribute $40,000 to the Replacement Reserves.

iv. In any subsequent terms of the JUA beyond a total of 50 years, if they are exercised, District and City must each annually contribute $20,000 to the Replacement Reserves.

D. The terms of the JUA for the Aquatics Center must incorporate the deal points set forth above as well as other provisions of this Agreement and neither Party may object to the JUA if it substantially conforms to such terms. Failure of the Parties to agree in the JUA on minor, non-substantive issues and immaterial deviations are not grounds for invalidating this Agreement.

E. The JUA must include a provision requiring the Parties to submit any dispute involving the JUA to arbitration before any party can file a petition with the Los Angeles Superior Court.

i. Any dispute must be resolved by arbitration before a retired judge of the Superior Court of the State of California (the "Arbitrator") under the auspices of Judicial Arbitration & Mediation Services, Inc. ("JAMS").

ii. The arbitration must be conducted in Los Angeles County, California. Any party may be represented by counsel or other authorized representative.

iii. The decision rendered by the arbitrator will become binding upon the parties unless appealed to the Los Angeles County Superior Court within thirty (30) days of the decision. If subsequent litigation results in an award to the party appealing the arbitration that is less than or equal to that of the arbitration decision, or if the litigation results in a decision in favor of the nonappealing party, then the party appealing the arbitration will pay the nonappealing party’s attorney’s fees and court costs.

iv. Should a party timely object to the arbitration decision, it may file a petition with the Los Angeles County Superior Court in accordance with
California Code of Civil Procedure ("CCP") §§ 1285, et seq.
Notwithstanding the limitations set forth in CCP § 1286.2, the court may
vacate, correct, or adjust an arbitration award, and enter judgment in
accordance with CCP § 1287.4, for any legal or equitable basis including,
without limitation, error of law. The court will apply the substantial
evidence standard of review when considering the appeal of an objecting
party.

5. ATHLETIC FACILITIES JOINT USE AGREEMENT. The Parties agree to enter into an
agreement for use of the fields at the Project and at City-owned athletic fields at the northeast
corner of Mariposa Avenue and Nash Street (the "Athletic Field Agreement" or "AFA").
Further, the Parties agree to cooperate in identifying other athletic facilities where joint and
reciprocal use of athletic facilities may be possible. The AFA may be part of the JUA or a
separate agreement.

6. DISTRICT RESPONSIBILITIES. Without admitting that the FEIR is deficient, District
must undertake the following obligations in response to City’s concerns regarding the FEIR and
the Project:

A. District must pay up to $6,000,000 for the design, development, planning and
construction of the Aquatics Center.

B. District will hold title to the Property and all improvements including, without
limitation, the Aquatics Center.

C. District will cap daytime high school enrollment at the Property at 1600 students
to ensure Small Learning Communities.

D. District will devote appropriate and sufficient resources to maintain a safe and
secure environment on the Property during school hours, including having a full
time Security Coordinator on the campus.

E. District will implement the mitigation measures set forth in the FEIR to ensure
safe student drop-off areas which do not pose either a pedestrian or a vehicular
hazard on the surrounding public streets. If issues develop relating to drop-off and
pick-up, District will work with City to resolve such matters.

F. District will make the Property available as an Emergency Shelter for the
American Red Cross.

7. CITY RESPONSIBILITIES.

A. Operation and Maintenance. Once the Aquatics Center receives its final certificate
of occupancy and is open to the public, City will operate and maintain it in
accordance with the JUA.

B. Grand Extension. Unless required by law, City will not undertake a public works
project to implement an east-west extension of Grand Avenue during the term of
the JUA and so long as the Property is operated as a school.

C. Both Parties agree to cooperate in efforts to seek outside funding – whether
through grants, donations, or corporate sponsorship – to help fund the Aquatics
Center budget.

D. Should the budget be inadequate to construct the Aquatic Center as anticipated by
this Agreement, and as otherwise modified in accordance with Section 2 of this
Agreement, City may (in the City Council’s sole discretion) provide up to
$1,800,000 in funding.

E. Notwithstanding any other provision, City agrees to provide $300,000 to the
Aquatics Center budget for design costs, payable within 30 days of District
receiving approved (stamped) plans from the Division of the State Architect
(DSA). Should City opt to provide additional funds to the Aquatics Center budget,
i.e., up to an additional $1,500,000, those funds will be provided to the Aquatics
Center budget before bidding commences, in addition to all necessary funds to
complete the Aquatic Center Project. City understands and agrees that the
$300,000 provided for design costs will not be refunded to City even if this
Agreement terminates or if District fails to build the Aquatics Center.
8. NO LIMITATION OF POWERS.
   A. Nothing in this Agreement is intended to, nor can it, act as a limitation on City’s present or future exercise of municipal powers in accordance with the California Constitution and applicable law.
   B. Nothing in this Agreement is intended to, nor can it, require the District Board to exercise its discretion in any way when considering whether to approve the Final Design.

9. REMEDIES/GUARANTEES OF PERFORMANCE.
   A. District must build the Aquatics Center in accordance with this Agreement. The Parties agree that failure of District to meet this standard constitutes a default of this Agreement. The Parties agree that this default will result in damage and injury to City. The Parties further agree, however, that actual damages incurred by City as result of such default is difficult if not impossible to ascertain with any degree of certainty or accuracy. Accordingly, the parties have negotiated and have agreed that District is liable to, and must pay, City for liquidated damages, and not as a penalty, $1.5 million for District’s failure to construct the Aquatics Center. If for any reason District does not approve or construct the Aquatics Center, City is entitled to the sum of $1.5 million in liquidated damages to fully compensate the City for the loss of the ability to use the pool and the impacts on the City’s ability to provide adequate recreational facilities to its citizens. Recovering liquidated damages is the sole and exclusive remedy of City if the District does not approve or does not construct the Aquatics Center.
   i. District must give at least 10 business days notice to City of the date and time of the meeting at which the District Board will consider the Aquatics Center. If District does not approve the Aquatics Center within two hundred ten (210) days after this Agreement becomes effective, City is immediately
entitled to such funds. The Parties may extend this date for good cause shown and by mutual written agreement.

ii. If, after any approval of the Aquatics Center, District decides not to construct the Aquatics Center, District will give City written notice of this decision and City is immediately entitled to liquidated damages.

iii. Absent third party litigation which delays the construction of the Aquatics Center, if no formal action is taken by District but the Aquatics Center is not under construction by the time the High School opens, City is entitled to liquidated damages.

iv. A notice of completion for the Aquatics Center must be recorded not later than July 31, 2018. If a notice of completion is not recorded by that date, City is entitled to liquidated damages. City’s entitlement to liquidated damages will be extinguished upon a notice of completion being recorded for the Aquatics Center.

10. COMPROMISE, SETTLEMENT, AND RELEASE. Except to the extent that City may exercise its police powers to enforce applicable law after the Aquatics Center is approved, in consideration of the mutual terms and conditions set forth in this Agreement, the Parties compromise and settle any and all past, present, or future claims, demands, obligations, or causes of action for compensatory or punitive damages, costs, losses, expenses, and compensation, whether based on tort, contract, or other theories of recovery, that the Parties have or might accrue arising from the Dispute or the Additional Review. Further, the Parties, on their respective behalves and those of their heirs, executors, administrators, and assigns fully release the other Party, its elected and appointed officials, employees, agents, and all other persons and associations, known or unknown, from any obligation or liability arising from the Dispute or the Additional Review. The Parties agree that this compromise, settlement, and release constitutes a bar to any claim involving the Dispute or the Additional Review.

11. GENERAL RELEASE OF ALL KNOWN OR UNKNOWN CLAIMS. The Parties acknowledge and agree that this Agreement applies to all claims that the Parties may have against
each other arising out of the Dispute for injuries, damages, or losses to person and property, real or personal, whether those injuries, damages, or losses are known or unknown, foreseen or unforeseen, or patent or latent, including those that may arise from the Additional Review.

12. CIVIL CODE § 1542. The Parties, or their representatives, certify that he or she read Civil Code § 1542, set forth below, and indicates that fact by initialing here: ___[CITY] ___[DISTRICT].

“A general release does not extend to claims which the creditor does not know or suspect to exist in his or her favor at the time of executing the release, which if known by him or her must have materially affected his or her settlement with the debtor.”

13. WAIVER OF § 1542 PROTECTIONS. After reading and understanding Civil Code § 1542, City and District voluntarily waive their application to this Agreement. City and District understand and acknowledge that the significance and consequence of this waiver is that even if City or District should eventually suffer additional damages arising out of the Dispute or the Additional Review, City and District will not be permitted to make any claim against the other Party for those damages. Furthermore, City and District acknowledge that City and District intend these consequences even as to claims for damages that may exist, and which, if known, would materially affect City’s and District’s decision to execute this Agreement, regardless of whether City’s or District’s lack of knowledge is the result of ignorance, oversight, error, negligence, or any other cause.

14. NO ASSISTANCE TO THIRD PARTY LITIGATION. City agrees that it will not directly or indirectly assist in any challenge brought by a third party against the District with respect to the Project, the Dispute or the Additional Review.

15. THIRD PARTY LITIGATION. If litigation is brought by a third party to challenge the construction, development or funding of the Project, District may act to void this Agreement. If District seeks to void this Agreement, it must provide written notice to City and City then has a new 30-day statute of limitations period in which to challenge the original approval of the Project based on any timely claims that could have been made at such time. The 30-day period commences upon
receipt of written notice by District. In the event, the District elects to void this Agreement pursuant to this Section 15, any remedy for non-performance set forth in Section 9 will unavailable to City. This Section will survive any voiding of the remaining Agreement.

16. LEGAL ADVICE. Each Party warrants and represents that in executing this Agreement, each Party sought legal advice from the attorney of their choice, that the terms of this Agreement and its consequences were completely read and explained to each Party by that attorney, and that each Party fully understands the terms of this Agreement.

17. FULL DISCLOSURE. Each Party acknowledges and represents that each Party was apprised of all relevant information and data relevant to the Dispute and this Agreement, including, without limitation, future risks, complications, and costs. Each Party further acknowledges and represents that, in executing this Agreement, the Party has not relied on any inducements, promises, or representations made by the other Party or any representative of the other Party.

18. WAIVER. A waiver by either Party of any breach of any term, covenant, or condition contained in this Agreement will not be deemed to be a waiver of any subsequent breach of the same or any other term, covenant, or condition contained in this Agreement, whether of the same or different character.

19. NOTICES. All communications to either Party by the other Party will be deemed made when received by such Party at its respective name and address as follows:

CITY
City of El Segundo
350 Main Street
El Segundo, California 90245
Attention: City Manager

DISTRICT
Wiseburn Unified School District
13530 Aviation Boulevard
Hawthorne, California 90250
Attention: Superintendent

Any such written communications by mail will be conclusively deemed to have been received by the addressee upon deposit thereof in the United States Mail, postage prepaid and properly addressed as noted above. In all other instances, notices will be deemed given at the time of
actual delivery. Changes may be made in the names or addresses of persons to whom notices are to be given by giving notice in the manner prescribed in this Section.

20. ATTORNEYS’ FEES AND COSTS. The Parties each agree to waive any entitlement of attorneys’ fees and costs incurred with respect to the Dispute and the negotiation of this Agreement.

21. NO ADMISSION OF LIABILITY. It is understood and agreed that this settlement is a compromise of the Dispute, and that entry into this Agreement cannot be construed as an admission of liability on District’s behalf.

22. INTERPRETATION. This Agreement was drafted in and will be construed in accordance with the laws of the State of California, and exclusive venue for any action involving this Agreement will be in Los Angeles County.

23. ENTIRE AGREEMENT. This Agreement sets forth the entire understanding of the Parties. Except as otherwise provided, there are no other understandings, terms or other agreements, expressed or implied, oral or written.

24. RULES OF CONSTRUCTION. Each Party had the opportunity to independently review this Agreement with legal counsel. Accordingly, this Agreement will be construed simply, as a whole, and in accordance with its fair meaning; it will not be interpreted strictly for or against either Party. This Agreement is intended to, and does, amend and restate the Original Agreement. While specific provisions of the Original Agreement were incorporated by reference, the text of this Agreement takes precedence over any conflicting provision of the Original Agreement and accurately reflects the Parties’ understandings.

25. SEVERABILITY. If any portion of this Agreement is declared by a court of competent jurisdiction to be invalid or unenforceable, then such portion will be deemed modified to the extent necessary in the opinion of the court to render such portion enforceable and, as so modified, such portion and the balance of this Agreement will continue in full force and effect.

26. CAPTIONS. The captions of the Sections of this Agreement are for convenience of reference only and will not affect the interpretation of this Agreement.
27. TIME IS OF ESSENCE. Time is of the essence for each and every provision of this Agreement.

28. FORCE MAJEURE. Should performance of this Agreement be prevented due to fire, flood, earthquake, explosion, acts of terrorism, war, embargo, government action, civil or military authority, the natural elements, or other similar causes beyond the Parties’ reasonable control, then the time periods within this Agreement will be automatically extended for the time period during which it is impracticable for the Parties to perform.

29. AUTHORITY/MODIFICATION. The Parties represent and warrant that all necessary action has been taken by the Parties to authorize the undersigned to execute this Agreement and to engage in the actions described herein. This Agreement may be modified by written agreement. City’s city manager may execute any such amendment on behalf of City.

30. COUNTERPARTS. This Agreement may be executed in one or more counterparts, each of which will be deemed an original.

///
///
///

IN WITNESS WHEREOF the parties hereto have executed this Agreement the day and year first hereinabove written.

Wiseburn Unified School District

City of El Segundo
Israel Mora  
President, Board of Trustees

Suzanne Fuentes  
Mayor

Tom Johnstone, Ed.D.  
Superintendent

Greg Carpenter  
City Manager

Approved as to Form:

Approved as to Form:

John Dietrich,  
Atkinson, Andelson, Loya, Ruud & Romo,  
Attorneys for Wiseburn Unfied School District

Mark D. Hensley,  
City Attorney
<table>
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<td><strong>TOTAL WARRANTS</strong></td>
<td><strong>$1,159,639.70</strong></td>
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STATE OF CALIFORNIA
COUNTY OF LOS ANGELES

Information on actual expenditures is available in the Director of Finance's office in the City of El Segundo.

I certify as to the accuracy of the demands and the availability of fund for payment thereof,

For Approval: Regular checks held for City Council authorization to release.

CODES:

R = Computer generated checks for all non-emergency/urgency payments for materials, supplies and services in support of City Operations

For Ratification:

A = Payroll and Employee Benefit checks

B-F = Computer generated Early Release disbursements and/or adjustments approved by the City Manager. Such as: payments for utility services, petty cash and employee travel expense reimbursements, various refunds, contract employee services consistent with current contractual agreements, instances where prompt payment discounts can be obtained or late payment penalties can be avoided or when a situation arises that the City Manager approves.

H = Handwritten Early Release disbursements and/or adjustments approved by the City Manager.

FINANCE DIRECTOR

CITY MANAGER

DATE: 12-21-15
## CITY OF EL SEGUNDO
### PAYMENTS BY WIRE TRANSFER
#### 11/30/15 THROUGH 12/13/15

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**DATE OF RATIFICATION: 12/14/15**

**TOTAL PAYMENTS BY WIRE:**

3,624,085.27

Certified as to the accuracy of the wire transfers by:

Deputy City Treasurer II

Date: 12/14/15

Director of Finance

Date: 12-21-15

City Manager

Date: 12-21-15

Information on actual expenditures is available in the City Treasurer’s Office of the City of El Segundo.
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<td>Asset Forfeiture Fund</td>
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<td>114</td>
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<td>501</td>
<td>Water Utility Fund</td>
<td>278,159.91</td>
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<tr>
<td>502</td>
<td>Wastewater Fund</td>
<td>114,696.17</td>
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<tr>
<td>503</td>
<td>Golf Course Fund</td>
<td>-</td>
</tr>
<tr>
<td>601</td>
<td>Equipment Replacement</td>
<td>1,500.00</td>
</tr>
<tr>
<td>602</td>
<td>Liability Insurance</td>
<td>7,386.09</td>
</tr>
<tr>
<td>603</td>
<td>Workers Comp. Reserve/Insurance</td>
<td>5,536.09</td>
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<tr>
<td>701</td>
<td>Retired Emp. Insurance</td>
<td>-</td>
</tr>
<tr>
<td>702</td>
<td>Expendable Trust Fund - Developer Fees</td>
<td>468.07</td>
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<tr>
<td>703</td>
<td>Expendable Trust Fund - Other</td>
<td>9,584.64</td>
</tr>
<tr>
<td>708</td>
<td>Outside Services Trust</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL WARRANTS</strong></td>
<td><strong>$ 842,104.06</strong></td>
</tr>
</tbody>
</table>

**STATE OF CALIFORNIA**

**COUNTY OF LOS ANGELES**

Information on actual expenditures is available in the Director of Finance's office in the City of El Segundo.

I certify as to the accuracy of the demands and the availability of fund for payment thereof.

For Approval: Regular checks held for City council authorization to release.

**CODES:**

R = Computer generated checks for all non-emergency/urgence payments for materials, supplies and services in support of City Operations.

A = Payroll and Employee Benefit checks

B = Computer generated Early Release disbursements and/or adjustments approved by the City Manager. Such as: payments for utility services, petty cash and employee travel expense reimbursements, various refunds, contract employee services consistent with current contractual agreements, instances where prompt payment discounts can be obtained or late payment penalties can be avoided or when a situation arises that the City Manager approves.

H = Handwritten Early Release disbursements and/or adjustments approved by the City Manager.

**FINANCE DIRECTOR**

**CITY MANAGER**

**DATE:** 1-12-16

**NOTES**

**VOID CHECKS DUE TO ALIGNMENT:** N/A

**VOID CHECKS DUE TO INCORRECT CHECK DATE:**

**VOID CHECKS DUE TO COMPUTER SOFTWARE ERROR:**
# Payments by Wire Transfer
## 12/14/15 through 1/10/16

<table>
<thead>
<tr>
<th>Date</th>
<th>Payee</th>
<th>Amount</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/18/2015</td>
<td>Health Comp</td>
<td>1,708.43</td>
<td>Weekly claims</td>
</tr>
<tr>
<td>12/18/2015</td>
<td>Manufacturers &amp; Traders</td>
<td>51,998.44</td>
<td>457 payment Vantagepoint</td>
</tr>
<tr>
<td>12/18/2015</td>
<td>Manufacturers &amp; Traders</td>
<td>477.31</td>
<td>IRA payment Vantagepoint</td>
</tr>
<tr>
<td>12/18/2015</td>
<td>South Bay Credit Union</td>
<td>11,000.38</td>
<td>Payroll credit union deduction paynt</td>
</tr>
<tr>
<td>12/18/2015</td>
<td>State of CA EFT</td>
<td>853.45</td>
<td>EFT Child support payment</td>
</tr>
<tr>
<td>12/21/2015</td>
<td>Nationwide NRS EFT</td>
<td>29,938.32</td>
<td>EFT 457 payment</td>
</tr>
<tr>
<td>12/21/2015</td>
<td>IRS</td>
<td>233,103.01</td>
<td>Federal 941 Deposit</td>
</tr>
<tr>
<td>12/21/2015</td>
<td>Employment Development</td>
<td>2,903.60</td>
<td>State SDI payment</td>
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<td>12/21/2015</td>
<td>Employment Development</td>
<td>51,102.25</td>
<td>State PIT Withholding</td>
</tr>
<tr>
<td>12/23/2015</td>
<td>Cal Pers</td>
<td>103,200.00</td>
<td>EFT Retirement Misc</td>
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<td>12/23/2015</td>
<td>Cal Pers</td>
<td>643,900.00</td>
<td>EFT Retirement Safety</td>
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<td>4,200.00</td>
<td>EFT Retirement Safety-Police</td>
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<td>12/23/2015</td>
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<td>18,700.00</td>
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<td>12/24/2015</td>
<td>Dept. of Industrial Relations</td>
<td>225.00</td>
<td>Elevator Permit Fee</td>
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<td>12/24/2015</td>
<td>Health Comp</td>
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<td>12/31/2015</td>
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<tr>
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<td>477.31</td>
<td>IRA payment Vantagepoint</td>
</tr>
<tr>
<td>12/31/2015</td>
<td>South Bay Credit Union</td>
<td>11,000.38</td>
<td>Payroll credit union deduction paynt</td>
</tr>
<tr>
<td>12/31/2015</td>
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<td>12/31/2015</td>
<td>State of CA EFT</td>
<td>534.45</td>
<td>EFT Child support payment</td>
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<tr>
<td>12/31/2015</td>
<td>IRS</td>
<td>234,297.33</td>
<td>Federal 941 Deposit</td>
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<td>12/31/2015</td>
<td>Employment Development</td>
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<td>State SDI payment</td>
</tr>
<tr>
<td>12/31/2015</td>
<td>Employment Development</td>
<td>52,407.09</td>
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<td>1/6/2016</td>
<td>Cal Pers</td>
<td>92,144.80</td>
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<td>1/6/2016</td>
<td>Cal Pers</td>
<td>1,674.89</td>
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<tr>
<td>1/6/2016</td>
<td>Cal Pers</td>
<td>21,999.80</td>
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<tr>
<td>1/6/2016</td>
<td>Cal Pers</td>
<td>489,768.55</td>
<td>EFT Health Insurance Payment</td>
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<tr>
<td>1/7/2016</td>
<td>Cal Pers</td>
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<td>Replacement Benefit Contribution</td>
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<td>1/8/2016</td>
<td>Health Comp</td>
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</tr>
<tr>
<td>1/8/2016</td>
<td>Cal Pers</td>
<td>2,500.00</td>
<td>GASB 68 Reporting Fee - Misc. Plan</td>
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<tr>
<td>1/8/2016</td>
<td>Cal Pers</td>
<td>2,500.00</td>
<td>GASB 68 Reporting Fee - Safety Plan</td>
</tr>
<tr>
<td>12/23/2015</td>
<td>Lane Donovan Golf P't</td>
<td>19,747.22</td>
<td>Payroll Transfer</td>
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<tr>
<td>1/7/2016</td>
<td>Lane Donovan Golf P't</td>
<td>19,132.31</td>
<td>Payroll Transfer</td>
</tr>
<tr>
<td>12/14/15-12/20/15</td>
<td>Workers Comp Activity</td>
<td>14,197.38</td>
<td>SCRMA checks issued</td>
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<tr>
<td>12/21/15-12/27/15</td>
<td>Workers Comp Activity</td>
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<td>1/1/16-1/3/16</td>
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<td>Workers Comp Activity</td>
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<td>12/14/15-12/20/15</td>
<td>Liability Trust - Claims</td>
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<td>Claim checks issued</td>
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<tr>
<td>12/21/15-12/27/15</td>
<td>Liability Trust - Claims</td>
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<tr>
<td>12/28/15-12/31/15</td>
<td>Liability Trust - Claims</td>
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<td>Claim checks issued</td>
</tr>
<tr>
<td>1/1/16-1/3/16</td>
<td>Liability Trust - Claims</td>
<td>0.00</td>
<td>Claim checks issued</td>
</tr>
<tr>
<td>1/4/16-1/10/16</td>
<td>Liability Trust - Claims</td>
<td>650.00</td>
<td>Claim checks issued</td>
</tr>
</tbody>
</table>

**Total Payments by Wire:** 2,602,926.33

**Date of Ratification:** 1/11/16

Information on actual expenditures is available in the City Treasurer's Office of the City of El Segundo.

P:\City Treasurer\Wire Transfers\Wire Transfers 10-01-15 to 9-30-16

361/2016 1/1
REVISED SPECIAL MEETING OF THE EL SEGundo CITY COUNCIL
TUESDAY, DECEMBER 8, 2015 – 5:30 PM

CALL TO ORDER – Mayor Fuentes at 5:30 PM

ROLL CALL

Mayor Fuentes - Present
Mayor Pro Tem Jacobson - Present
Council Member Atkinson - Present
Council Member Fellhauer - Present
Council Member Dugan - Present

PUBLIC COMMUNICATION – (Related to City Business Only – 5 minute limit per person, 30 minute limit total) None

Mayor Fuentes announced that Council would be meeting in closed session pursuant to the items listed on the Agenda.

CLOSED SESSION:

The City Council may move into a closed session pursuant to applicable law, including the Brown Act (Government Code Section §54960, et seq.) for the purposes of conferring with the City’s Real Property Negotiator; and/or conferring with the City Attorney on potential and/or existing litigation; and/or discussing matters covered under Government Code Section §54957 (Personnel); and/or conferring with the City’s Labor Negotiators; as follows:

CONFERENCE WITH CITY’S LABOR NEGOTIATOR (Gov’t Code §54957.6): -8-matters

1. Employee Organizations: Police Management Association; Police Officers Association; Police Support Services Employees Association; Fire Fighters Association; Supervisory and Professional Employees Association; City Employees Association; Executive Management Group (Unrepresented Group); Management/Confidential Group (Unrepresented Group)

   Agency Designated Representative: Steve Filarsky and City Manager

Adjourned at 6:20 PM

Tracy Weaver, City Clerk
REGULAR MEETING OF THE EL SEGUNDO CITY COUNCIL
TUESDAY, DECEMBER 15, 2015 – 5:00 PM

5:00 P.M. SESSION

CALL TO ORDER – Mayor Pro Tem Jacobson at 5:00 PM

ROLL CALL

Mayor Fuentes - Present at 5:01 PM
Mayor Pro Tem Jacobson - Present
Council Member Atkinson - Present
Council Member Fellhauer - Present
Council Member Dugan - Present

PUBLIC COMMUNICATION – (Related to City Business Only – 5 minute limit per person, 30 minute limit total) None

Mayor Pro Tem Jacobson announced that Council would be meeting in closed session pursuant to the items listed on the Agenda.

SPECIAL ORDER OF BUSINESS:

CLOSED SESSION:

The City Council may move into a closed session pursuant to applicable law, including the Brown Act (Government Code Section §54960, et seq.) for the purposes of conferring with the City’s Real Property Negotiator; and/or conferring with the City Attorney on potential and/or existing litigation; and/or discussing matters covered under Government Code Section §54957 (Personnel); and/or conferring with the City’s Labor Negotiators; as follows:

CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION (Gov’t Code §54956.9(d)(1): -1- matter

1. City of El Segundo vs. City of Los Angeles, et.al. LASC Case No. BS094279

CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION

Significant exposure to litigation pursuant to Government Code §54956.9(d)(2): -1- matter.


DISCUSSION OF PERSONNEL MATTERS (Gov’t Code §54957): -0- matter
APPOINTMENT OF PUBLIC EMPLOYEE (Gov’t. Code § 54957): -0- matter

PUBLIC EMPLOYMENT (Gov’t Code § 54957) -0- matter

CONFERENCE WITH CITY’S LABOR NEGOTIATOR (Gov’t Code §54957.6): -7- matters

1. Organizations: Police Management Association; Police Officers Association; Police Support Services Employees Association; Supervisory and Professional Employees Association; City Employees Association; Executive Management Group (Unrepresented Group); Management/Confidential Group (Unrepresented Group)

   Agency Designated Representative: Steve Filarsky and City Manager

CONFERENCE WITH REAL PROPERTY NEGOTIATOR (Gov’t Code §54956.8): -0- matters

Adjourned at 6:50 PM
REGULAR MEETING OF THE EL SEGUNDO CITY COUNCIL  
TUESDAY, DECEMBER 15, 2015 - 7:00 P.M.

7:00 P.M. SESSION

CALL TO ORDER – Mayor Fuentes at 7:00 PM

INVOCATION – Pastor Eric Jay, St. John’s Lutheran Church

PLEDGE OF ALLEGIANCE – Council Member Atkinson

PRESENTATIONS

a) Commendation read by Council Member Fellhauer and presented to Dina Williams El Segundo Police Department’s Retired Senior Volunteer of the Year.

b) Commendation read by Mayor Fuentes and presented to Neal Von Flue, coordinator, for the El Segundo Community Christmas Dinner to be held on December 25, 2015 at the Joslyn Center.

c) Presentation by Chris Cagle, Regional Affairs Manager, the South Bay Workforce Investment Board (SBWIB).

d) Presentation by Meredith Petit, Recreation and Parks Director concerning the Los Angeles County Comprehensive Parks Needs Assessment.

e) Presentation by Crista Binder, City Treasurer and Dino Marsocci, Deputy City Treasurer II, the quarterly Investment Portfolio Report.

ROLL CALL

Mayor Fuentes - Present
Mayor Pro Tem Jacobson - Present
Council Member Atkinson - Present
Council Member Fellhauer - Present
Council Member Dugan - Present

PUBLIC COMMUNICATIONS – (Related to City Business Only – 5 minute limit per person, 30 minute limit total)
Mike Robbins, resident, commented on the Election Resolution No. 4945 published in the El Segundo Herald, commented on item #C2 and item #C3.
Julie Stolnak, resident, commended the Council on working to save the trees along Pine Ave.

CITY COUNCIL COMMENTS – (Related to Public Communications)
A. PROCEDURAL MOTIONS

Consideration of a motion to read all ordinances and resolutions on the Agenda by title only.

MOTION by Mayor Pro Tem Jacobson, SECONDED by Council Member Fellhauer to read all ordinances and resolutions on the Agenda by title only. MOTION PASSED BY UNANIMOUS VOICE VOTE. 5/0

B. SPECIAL ORDERS OF BUSINESS (PUBLIC HEARING)

1. Consideration and possible action regarding (Public Hearing) the proposed project and budget for the 2016-17 Community Development Block Grant (CDBG) Program Year. The estimated CDBG budget allocation for Program Year 2016-2017 is approximately $53,124. (Fiscal Impact: $53,124.00)

Mayor Fuentes stated this was the time and place to conduct a public hearing regarding the proposed project and budget for the 2016-2017 Community Development Block Grant (CDBG) Program Year.

City Clerk Weaver stated that proper notice had been given in a timely manner and that written communication had not been received in the City Clerk’s office.

Greg Carpenter, City Manager, introduced the item.

Tina Gall, CDBG Coordinator, gave a presentation and answered Council questions.

Mayor Fuentes announced the Public Hearing is now open for public comment.

Mayor Fuentes closed the Public Hearing.

Council Discussion

MOTION by Council Member Fellhauer, SECONDED by Council Member Dugan to adopt the 2016-2017 CDBG project and budget and authorize the City Manager to execute the contracts, in a form approved by the City Attorney, with the Los Angeles County Community Development Commission (CDC). MOTION PASSED BY UNANIMOUS VOICE VOTE. 5/0

C. UNFINISHED BUSINESS
2. Continuation of the El Segundo South Campus Specific Plan Project (ESSCSP) for property generally located at 2000 to 2100 El Segundo Boulevard owned by the Raytheon Company.
   (Fiscal Impact: If approved, the project would provide $4,000,000 in direct payment revenue; up to $1,071,228 in direct payment revenue related to development fee per square foot; an estimated $11,893,000 roadway infrastructure; $75,000 for bicycle parking; and potentially $375,000 for wastewater infrastructure improvements).

Greg Carpenter, City Manager, introduced the item.

Scott Pozza, Director of Facilities and Real Estate at Raytheon, spoke concerning the Development Agreement by and between the City of El Segundo and Raytheon Company.

Council Discussion

MOTION by Council Member Atkinson, SECONDED by Council Member Fellhauer to approve Resolution No. 4958, adopt a statement of overriding considerations, amending the General Plan and General Plan Map (No. GPA 11-01), approve a Vesting Tentative Map (No. SUB 11-02) and introduce and waive first reading of an Ordinance No. 1516 adopting a Specific Plan (ZTA 11-01 and SP 11-01), approve a Development Agreement (DA 11-02), amend the Zoning, amend Development Agreement Section 7.1.4 with the following verbiage; “The City will accept dedication of Nast Street and improvements if constructed in accordance with City Standards”, amend Section 7.2.4 with the following verbiage; “The City will accept dedication of Continental Boulevard and improvements if constructed in accordance with City Standards” and schedule second reading and adoption of the Ordinance for January 19, 2016. MOTION PASSED BY UNANIMOUS VOICE VOTE. 5/0

3. Consideration and possible action to approve a revised Due Diligence and Ground Lease Agreement No. 4924 with ES CenterCal LLC ("ES CenterCal") to lease the driving range portion of The Lakes Golf Course for the purpose of developing the facility consisting of a driving range, restaurant, bar and lounge and event. CenterCal has requested two substantive revisions to the Agreement approved by the Council on September 15, 2015.
   (Fiscal Impact :)

Greg Carpenter, City Manager, introduced and presented the item.

Council Discussion

Rupesh Bhakta, Vice President, Acquisitions and Development at CenterCal Properties LLC, answered Council questions.
MOTION by Council Member Dugan, SECONDED by Council Member Fellhauer to approve the revised Due Diligence and Ground Lease Agreement with the substantive changes by CenterCal and allow for minor non-substantive changes approved as to form by the City Attorney. MOTION PASSED BY UNANIMOUS VOICE VOTE. 5/0

D. REPORTS OF COMMITTEES, COMMISSIONS AND BOARDS

4. Consideration and possible action to open the recruitment process for the positions on the Committees, Commissions and Boards ("CCBs") that expires in the year 2016.
   (Fiscal Impact: None)

   Greg Carpenter, City Manager, introduced the item.

   Council directed staff to direct staff to open the recruitment process for the positions on the CCB’s.

E. CONSENT AGENDA

   All items listed are to be adopted by one motion without discussion and passed unanimously. If a call for discussion of an item is made, the item(s) will be considered individually under the next heading of business.

5. Approve Warrant Numbers 3008814 through 3008942 on Register No. 5 in the total amount of $944,991.36 and Wire Transfers from 11/16/2015 through 11/29/2015 in the total amount of $982,284.20. Authorized staff to release. Ratified Payroll and employee Benefit checks; checks released early due to contracts or agreement; emergency disbursements and/or adjustments; and wire transfers.

6. Approve Regular City Council Meeting Minutes of November 17, 2015 and Regular City Council Meeting Minutes of December 1, 2015.

7. Receive and file this report regarding emergency work to repair dwelling units at the Park Vista Senior Housing Facility due to water intrusion without the need for bidding in accordance with Public Contracts Code §§ 20168 and 22050 and El Segundo Municipal Code ("ESMC") 1-7-12 and 1-7A-4.
   (Fiscal Impact: $50,000.00)

8. Authorize the City Manager to execute a contract amendment no. 4918A, in a form approved by the City Attorney, for an additional $25,000 with WaterWise Consulting, Inc. for additional water conservation outreach and support.
   (Fiscal Impact: $25,000.00)
9. Adopt Resolution No. 4957 approving plans and specifications for Trenchless Sewer Improvement – Eastern Residential Zone, Project No. PW 16-03 and authorize staff to advertise for the receipt of construction bids.
(Fiscal Impact: $2,000,000.00)

10. Approve year-end adjustments to the Fiscal Year 2014-2015 Adopted Budget and approve the increase to the Fiscal Year 2015-2016 Adopted Budget for continuing appropriations, thereby amending the Fiscal Year 2015-2016 Adopted Budget in the Funds.
(Fiscal Impact: General Fund estimated revenues will increase by $1,856,700, appropriations will increase by $1,820,200. The following budget adjustments in Special Revenue funds are also requested: COPS Fund appropriations will increase by $73,500; Measure R Fund appropriations will increase by $150,000; TDA Article 3 Fund appropriations will increase by $10,720; State Grants Fund appropriations will increase by $152,100; Capital Improvement Fund estimated revenues and appropriations will increase by $111,250; and Special Revenues/Donations Fund estimated revenues will increase by $48,700, and appropriations will increase by $41,600.)

11. Authorize the City Manager to execute a standard Public Works contract no. 4956, in a form approved by the City Attorney, to R.E. Shultz for Hilltop Park Playground Improvement, Project No. PW 16-05 and authorize an additional $21,275.00 for construction related contingencies.
(Fiscal Impact: $ 183,000.00)

12. Adopt Resolution No. 4959 and Resolution No. 4960 authorizing the City Manager to Execute a Joint Powers Agreement (JPA) No. 4966 with the California Home Finance (CHF) Authority (“Authority”) to participate in the Ygrene Works Property Assessed Clean Energy (PACE) Program (“Program”); authorizing the Authority to take action by including property within the City’s jurisdiction in the Program; and authorizing the City Manager to execute documents needed to implement the resolutions in a form approved by the City Attorney.
(Fiscal Impact: $0)

Applicant: City of El Segundo
(Fiscal Impact: None)
14. Adopt Resolution No. 4961 to apply for a grant from Los Angeles County Regional Park and Open Space District (RPOSD) in the amount of $300,000. The grant funds will be allocated for improvement and rehabilitation of sports court and general use area lighting at Recreation Park.  
(Fiscal Impact: FY 15-16: $300,000 of Intergovernmental Grant Revenue)

15. PULLED BY MAYOR PRO TEM JACOBSON

(Fiscal Impact: $60,000.00 in CDBG grant funds)

17. Approve Resolution No. 4963 to abolish certain part-time classifications in order to comply with the minimum wage increase effective January 1, 2016.  
(Fiscal Impact: No Fiscal Impact for upcoming year)

18. Adopt Resolution No. 4964 establishing a new base salary for the classification of Fire Chief.  
(Fiscal Impact: None)

19. Approve an Interim Side Letter between the City of El Segundo and the Police Managers’ Association (PMA), approve an Interim Side Letter between the City of El Segundo and the Supervisory and Professional Employees’ Association (SPEA) and approve Resolution No. 4965 providing for changes to Chapter 1A2 of the El Segundo Administrative Code by adjusting base salary schedules, repealing obsolete sections, and modifying other benefit provisions for Management-Confidential and Executive classifications.  
(Fiscal Impact: N/A)

MOTION by Council Member Fellhauer, SECONDED by Council Member Dugan to approve Consent Agenda items 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18 and 19.  
MOTION PASSED BY UNANIMOUS VOICE VOTE. 5/0

PULLED ITEMS:

15. Consideration and possible action to adopt a Resolution approving plans and specifications for the Richmond Street Rehabilitation Arterial Improvement Project. Project No. PW 15-01 and authorize staff to advertise for the receipt of construction bids.  
(Fiscal Impact: $800,000.00)

MOTION by Council Member Fellhauer, SECONDED by Council Member Dugan to adopt Resolution No. 4962 approving plans and for the Richmond Arterial Improvement Project, Project No. PW 15-01 and authorize staff to advertise for the receipt of construction bids. MOTION PASSED BY UNANIMOUS VOICE VOTE. 4/1 NO Jacobson
F. NEW BUSINESS

20. Approve an amendment no. 4243A the employment agreement and approve a new salary schedule for the City Manager to extend the term through December 31, 2019; consistent with the action taken by the City Council on June 2, 2015 with respect to Department Directors and Confidential Management staff, convert the City’s payment of the deferred compensation 5% match benefit to base salary and convert the monthly benefit of $1,081 “Additional Pay” to Base Pay pursuant to an understanding reached with the California Public Employees’ Retirement System (PERS) with regard to including all Additional Pay for City employees receiving this benefit in their base salary. (Fiscal Impact: Conversion of $10,500 of annual deferred compensation benefit to base salary and conversion of $1,081 Additional Pay into base salary which results in no additional expense to the City except the City will annually contribute 18% of $10,500 which is the City’s share of the PERS retirement cost)

Karl Berger, Assistant City Attorney, introduced the item.

Council Discussion

MOTION by Council Member Fellhauer, SECONDED by Council Member Atkinson to approve an amendment to the employment agreement of the City Manager to extend the term through December 31, 2015 and approve a new salary schedule consistent with the action taken by Council on June 2, 2015 with respect to Department Directors and Confidential Management staff for the position of City Manager. MOTION PASSED BY UNANIMOUS VOICE VOTE. 5/0

G. REPORTS – CITY MANAGER – Wished City Employees a Happy Holiday season, thanked staff for the Tree Lighting event, thanked the Planning staff for a job well done on the Raytheon Project. Mr. Carpenter announced Kimberly Christensen’s retirement.

H. REPORTS – CITY ATTORNEY – Wished Kim well on her retirement.

I. REPORTS – CITY CLERK – Answered Council’s question concerning the possible revision of Resolution No. 4945 concerning the upcoming election in 2016.

J. REPORTS – CITY TREASURER – Reported earlier in the meeting.

K. REPORTS – CITY COUNCIL MEMBERS

Council Member Fellhauer – Wished Kim well on her retirement, mentioned the San Bernadino incident and repeated the need for “See something, Say something” and wished everyone a Merry Christmas and a Happy New Year.
Council Member Atkinson – Wished everyone a Merry Christmas and a Happy New Year.

Council Member Dugan – Thanked staff for all their hard work on the various Holiday events over the last few weeks. Wished everyone a Merry Christmas and a Happy New Year.

Mayor Pro Tem Jacobson – Thanked staff and the homeowners for a wonderful holiday season of events. Wished everyone a Merry Christmas and a Happy New Year.

Mayor Fuentes – Congratulated Kim on her retirement, thanked the staff for a wonderful job on the Holiday events put on by the City and thanked Chamber of Commerce for a great parade. Mentioned the San Bernadino incident as well and stressed the importance of being vigilant.

21. Consideration and possible action regarding the annual request of Mr. S. Claus for variances from the Municipal Code.
   (Fiscal Impact: None)

MOTION by Council Member Fellhauer, SECONDED by Mayor Pro Tem Jacobson to approve request by Mr. S. Claus for a waiver of the permits required for doing business within the City of El Segundo as follows: 1) The use of air rights and waiver of the Santa Monica Radial 160 R procedure; 2) Grant a free business license for a non-profit organization; 3) Waiver of the Noise Ordinance to permit the sound of bells; 4) Waiver of the Trespass Ordinance including dealing with trespassing animals; 5) Waiver of the ordinance on Animal Regulations. MOTION PASSED BY UNANIMOUS VOICE VOTE. 5/0

PUBLIC COMMUNICATIONS – (Related to City Business Only – 5 minute limit per person, 30 minute limit total)
Mike Robbins, resident, commented on the Tree Lighting ceremony and wished everyone a very Merry Christmas and a Happy New Year.
Kirsten Strickland, resident, commented on the current situation with the POA and stated the community would like the facts stated and questions answered, instead of the hearsay circulating.

MEMORIALS – None

ADJOURNMENT at 8:20 PM

Tracy Weaver, City Clerk
EL SEGUNDO CITY COUNCIL
AGENDA STATEMENT
MEETING DATE: January 19, 2016
AGENDA HEADING: Consent Agenda

AGENDA DESCRIPTION:
Consideration and possible action to receive and file this report regarding emergency work to repair dwelling units at the Park Vista Senior Housing Facility due to water intrusion without the need for bidding in accordance with Public Contracts Code §§ 20168 and 22050 and El Segundo Municipal Code ("ESMC")§ 1-7-12 and 1-7A-4. (Fiscal Impact: $50,000.00)

RECOMMENDED COUNCIL ACTION:
(1) Receive and file this report regarding emergency work to repair dwelling units at the Park Vista Senior Housing Facility due to water intrusion without the need for bidding in accordance with Public Contracts Code §§ 20168 and 22050 and El Segundo Municipal Code ("ESMC")§ 1-7-12 and 1-7A-4.
(2) Alternatively, discuss and take other possible action related to this item.

ATTACHED SUPPORTING DOCUMENTS:
None

FISCAL IMPACT: Included in Adopted Budget

- Amount Budgeted: $50,000.00
- Additional Appropriation: No
- Account Number(s): 405-400-0000-6215 (Facilities Maintenance: Repairs and Maintenance)

ORIGINATED BY: Stephanie Katsouleas, Director of Public Works
REVIEWED BY: Gregg Kovacevich, Assistant City Attorney
APPROVED BY: Greg Carpenter, City Manager

BACKGROUND AND DISCUSSION:
Staff has finally secured a vendor and initiated a contract to relocate all three sliding glass doors. However, the vendor selected was unwilling to reinstall the existing doors, stating that there are too many risks associated with removing the existing doors and ensuring they are not bent or damaged in the process. Staff has therefore ordered new sliding glass doors for the three northern units. Because of the custom size of the doors, the lead time is 3-4 weeks. The doors have been ordered and are scheduled for delivery in late January. The install date for these units is being coordinated around that delivery date.

Public Contracts Code § 22050 (c) requires that the City Council receive updates at every regularly scheduled meeting until the emergency repair is completed. Therefore, staff recommends that City Council receive and file this report on the status of the emergency repair to address the water intrusion issues at Park Vista Senior Housing Facility.
AGENDA DESCRIPTION:

Consideration and possible action to amend a standard Public Works Contract with Jose Angel Fierros (dba FS Construction) for FY 2015/16 Curb, Gutter, Sidewalk, and other Concrete Improvements. Project No. PW 14-16 (Fiscal Impact: $200,000.00)

RECOMMENDED COUNCIL ACTION:

1. Authorize the City Manager to execute a Public Works contract amendment with Jose Angel Fierros dba FS Construction, in a form as approved by the City Attorney, for $200,000 for the FY 2015/16 curb, gutter, sidewalk and other concrete improvements; or

2. Alternatively, discuss and take other possible actions related to this item.

ATTACHED SUPPORTING DOCUMENTS:

Location List

FISCAL IMPACT: Included in Adopted Budget

Amount Budgeted: $200,000.00
Additional Appropriation: No
Account Number(s): 301-400-8203-8705 (Capital Improvement Fund)

ORIGINATED BY: Arianne Bola, Senior Engineer Associate
REVIEWED BY: Stephanie Katsouleas, Public Works Director
APPROVED BY: Greg Carpenter, City Manager

BACKGROUND AND DISCUSSION:

On September 1, 2015, City Council awarded a $229,922.00 standard Public Works contract to Jose Angel Fierros (dba FS Construction) as the low bidder for the FY 2014/15 Curb, Gutter, Sidewalk and other Concrete Improvements Project to address high priority areas throughout El Segundo. City Council also authorized an option to amend the FY 2014/15 contract by $200,000 for additional concrete repairs once staff determined that FS Construction provided high quality work. Another $55,000 was awarded for tree removal work associated with the project and the remaining $15,078 was left for project contingencies, for a total budget of $500,000. Most of the original work identified in the contract and a substantial portion of the amended work has been completed with great success. Additionally, during the FY 2015/16 budget adoption process, City Council allocated another $200,000 for high priority curb, gutter and sidewalk repairs, bringing the total two-year budget to $700,000.

Because the FY 14/15 Concrete Project was awarded through a competitive low bid process and is still in progress, City Council has the option to amend the existing contract in lieu of rebidding, saving valuable time while ensuring that we continue to receive high quality work at an extremely competitive rate. Staff has been extremely pleased with the coordination, quality
and timeliness of FS Construction’s work as well as its unit bid price, and is therefore recommending that City Council authorize the proposed 2nd amendment allocating an additional $200,000 toward high concrete repair work and tree removal as necessary.

If approved, the contractor will continue to make repairs to the high priority areas identified on the attached list of locations during March. Please note that due to the lower than expected bid price, we have been able to address significantly more locations that originally planned.

FY 2014/15 Concrete Quantities Completed:

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sidewalks</td>
<td>27,090 SF</td>
</tr>
<tr>
<td>Driveways</td>
<td>8,484 SF</td>
</tr>
<tr>
<td>Curbs and Gutters</td>
<td>7122 LF</td>
</tr>
<tr>
<td>ADA Ramps</td>
<td>10 replacements</td>
</tr>
<tr>
<td>Trees Removed</td>
<td>38</td>
</tr>
</tbody>
</table>

With the competitive pricing we’re receiving, we anticipate completing concrete work for FY 2015/16 as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sidewalks</td>
<td>13,475 SF</td>
</tr>
<tr>
<td>Driveways</td>
<td>2,308 SF</td>
</tr>
<tr>
<td>Curbs and Gutters</td>
<td>3,275 LF</td>
</tr>
<tr>
<td>ADA Ramps</td>
<td>11 replacements</td>
</tr>
<tr>
<td>Trees Removed</td>
<td>5</td>
</tr>
</tbody>
</table>

**Summary of Work (to be) Completed**
Total Sidewalk Locations: 481
Total Curb and Gutter Locations: 174
Total Driveway Approaches: 117
Total ADA Replacements: 21
Total Trees Removed and to be replaced: 43

With the completion of the FY 15/16 work, we will have largely addressed the known list of documented problem areas, the majority (65%) of which are west of Main St. where the city has a high number of mature trees. While we have historically documented the city’s list sidewalk repairs through observations by City staff or through public reporting, this coming year the Streets Division will be conducting a city-wide audit of our sidewalks to record the state and severity of our undocumented defects. This new list will become the basis for future prioritizing the City’s sidewalk repair and budget needs. We also plan to engage residents on Arena St. about possible solutions to addressing the sidewalk, curb and gutter damage caused by the iconic Camphor trees on this street. Lastly, we will bring for City Council consideration and possible adoption a new Sidewalk Policy at the February 2, 2016 meeting.
### A. ADA Ramps

<table>
<thead>
<tr>
<th>NO.</th>
<th>ADDRESS</th>
<th>TYPE OF REPAIR</th>
<th>DIMENSIONS</th>
<th>QUANTITY</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Guaymas Way</td>
<td>Ramp</td>
<td>1</td>
<td>1</td>
<td>$2,500.00</td>
</tr>
<tr>
<td>2</td>
<td>Pine Ave</td>
<td>Ramp</td>
<td>1</td>
<td>1</td>
<td>$2,500.00</td>
</tr>
<tr>
<td>3</td>
<td>Eucalyptus Drive</td>
<td>Ramp</td>
<td>1</td>
<td>1</td>
<td>$2,500.00</td>
</tr>
<tr>
<td>4</td>
<td>Eucalyptus Drive</td>
<td>Ramp</td>
<td>1</td>
<td>1</td>
<td>$2,500.00</td>
</tr>
<tr>
<td>5</td>
<td>Virginia - Pine (SE Cor)</td>
<td>Ramp</td>
<td>1</td>
<td>1</td>
<td>$2,500.00</td>
</tr>
</tbody>
</table>

5                              |      | $12,500.00|

### B. Sidewalk

<table>
<thead>
<tr>
<th>NO.</th>
<th>ADDRESS</th>
<th>TYPE OF REPAIR</th>
<th>DIMENSIONS</th>
<th>QUANTITY</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Guaymas Way</td>
<td>Sidewalk</td>
<td>11'x12'</td>
<td>132</td>
<td>$858.00</td>
</tr>
<tr>
<td>2</td>
<td>Guaymas Way</td>
<td>Sidewalk</td>
<td>7'x7'</td>
<td>49</td>
<td>$318.50</td>
</tr>
<tr>
<td>3</td>
<td>Pine Ave</td>
<td>Sidewalk</td>
<td>23'x5'</td>
<td>115</td>
<td>$747.50</td>
</tr>
<tr>
<td>4</td>
<td>Pine Ave</td>
<td>Sidewalk</td>
<td>5'x5'</td>
<td>25</td>
<td>$162.50</td>
</tr>
<tr>
<td>5</td>
<td>Guaymas Way</td>
<td>Sidewalk</td>
<td>9'x14' + 4'x5' + 14'x3' + (1/2)(14'x10')</td>
<td>258</td>
<td>$1,677.00</td>
</tr>
<tr>
<td>6</td>
<td>Next to George Brett Field</td>
<td>Sidewalk</td>
<td>10'x6'</td>
<td>60</td>
<td>$390.00</td>
</tr>
<tr>
<td>7</td>
<td>Next to George Brett Field</td>
<td>Sidewalk</td>
<td>10'x6'</td>
<td>60</td>
<td>$390.00</td>
</tr>
<tr>
<td>8</td>
<td>Next to Snack Bar</td>
<td>Sidewalk</td>
<td>19'x9'</td>
<td>171</td>
<td>$1,111.50</td>
</tr>
<tr>
<td>9</td>
<td>Next to Fire Circle</td>
<td>Sidewalk</td>
<td>78'x14' + 14'x9' + 14'x15'</td>
<td>1428</td>
<td>$9,282.00</td>
</tr>
<tr>
<td>10</td>
<td>Next to Fire Circle</td>
<td>Sidewalk</td>
<td>15'x10' + 14'x9'</td>
<td>276</td>
<td>$1,794.00</td>
</tr>
<tr>
<td>11</td>
<td>Next to Fire Circle</td>
<td>Sidewalk</td>
<td>84'x6'</td>
<td>504</td>
<td>$3,276.00</td>
</tr>
<tr>
<td>12</td>
<td>Next to BBQ Area</td>
<td>Sidewalk</td>
<td>37'x7'</td>
<td>259</td>
<td>$1,683.50</td>
</tr>
<tr>
<td>13</td>
<td>Next to BBQ Area</td>
<td>Sidewalk</td>
<td>5'x6'</td>
<td>30</td>
<td>$195.00</td>
</tr>
<tr>
<td>14</td>
<td>Next to BBQ Area</td>
<td>Sidewalk</td>
<td>44'x6'</td>
<td>264</td>
<td>$1,716.00</td>
</tr>
<tr>
<td>15</td>
<td>Close to Joslyn Center</td>
<td>Sidewalk</td>
<td>54'x4'</td>
<td>216</td>
<td>$1,404.00</td>
</tr>
<tr>
<td>16</td>
<td>Close to Joslyn Center</td>
<td>Sidewalk</td>
<td>9'x4'</td>
<td>36</td>
<td>$234.00</td>
</tr>
<tr>
<td>17</td>
<td>Close to Joslyn Center</td>
<td>Sidewalk</td>
<td>5'x7'</td>
<td>35</td>
<td>$227.50</td>
</tr>
<tr>
<td>18</td>
<td>Close to Joslyn Center</td>
<td>Sidewalk</td>
<td>12'x7'</td>
<td>84</td>
<td>$546.00</td>
</tr>
<tr>
<td>19</td>
<td>Next to Stevenson Field</td>
<td>Sidewalk</td>
<td>42'x7'</td>
<td>294</td>
<td>$1,911.00</td>
</tr>
<tr>
<td>20</td>
<td>Next to Stevenson Field</td>
<td>Sidewalk</td>
<td>12'x6'</td>
<td>72</td>
<td>$468.00</td>
</tr>
<tr>
<td>No.</td>
<td>Address</td>
<td>Type</td>
<td>Dimensions</td>
<td>Units</td>
<td>Cost</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------</td>
<td>----------</td>
<td>---------------------</td>
<td>-------</td>
<td>--------</td>
</tr>
<tr>
<td>21</td>
<td>Eucalyptus Drive</td>
<td>Sidewalk</td>
<td>10'x4'</td>
<td>40</td>
<td>$260.00</td>
</tr>
<tr>
<td>22</td>
<td>Whiting - next to Chevron Parking at West Side</td>
<td>Sidewalk</td>
<td>15'x4' + 7'x4' + 5'x4' + 6'x4' + 14'x4' + 36'x4'</td>
<td>332</td>
<td>$2,158.00</td>
</tr>
<tr>
<td>23</td>
<td>Whiting - next to Chevron Parking at East Side</td>
<td>Sidewalk</td>
<td>40'x4' + 20'x4'</td>
<td>240</td>
<td>$1,560.00</td>
</tr>
<tr>
<td>24</td>
<td>Whiting - 118</td>
<td>Sidewalk</td>
<td>42'x4' + 5'x5'(pad)</td>
<td>193</td>
<td>$1,254.50</td>
</tr>
<tr>
<td>25</td>
<td>Whiting - 129</td>
<td>Sidewalk</td>
<td>15'x4'</td>
<td>60</td>
<td>$390.00</td>
</tr>
<tr>
<td>26</td>
<td>Whiting - 133</td>
<td>Sidewalk</td>
<td>15'x4'</td>
<td>60</td>
<td>$390.00</td>
</tr>
<tr>
<td>27</td>
<td>Whiting - 135</td>
<td>Sidewalk</td>
<td>20'x4'</td>
<td>80</td>
<td>$520.00</td>
</tr>
<tr>
<td>28</td>
<td>Whiting - 143</td>
<td>Sidewalk</td>
<td>20'x4'</td>
<td>80</td>
<td>$520.00</td>
</tr>
<tr>
<td>29</td>
<td>Whiting - 144</td>
<td>Sidewalk</td>
<td>43'x4'</td>
<td>172</td>
<td>$1,118.00</td>
</tr>
<tr>
<td>30</td>
<td>Whiting - 147</td>
<td>Sidewalk</td>
<td>45'x4'</td>
<td>180</td>
<td>$1,170.00</td>
</tr>
<tr>
<td>31</td>
<td>Whiting - 217</td>
<td>Sidewalk</td>
<td>3.5'x5' (pad)</td>
<td>17.5</td>
<td>$113.75</td>
</tr>
<tr>
<td>32</td>
<td>Whiting - 224</td>
<td>Sidewalk</td>
<td>18'x3.5'</td>
<td>63</td>
<td>$409.50</td>
</tr>
<tr>
<td>33</td>
<td>Whiting - 230</td>
<td>Sidewalk</td>
<td>29'x3.5'</td>
<td>101.5</td>
<td>$659.75</td>
</tr>
<tr>
<td>34</td>
<td>Whiting - 311</td>
<td>Sidewalk</td>
<td>30'x3.5'</td>
<td>105</td>
<td>$682.50</td>
</tr>
<tr>
<td>35</td>
<td>Whiting - 317</td>
<td>Sidewalk</td>
<td>7'x3.5' + 4'x3.5' (pad)</td>
<td>38.5</td>
<td>$250.25</td>
</tr>
<tr>
<td>36</td>
<td>Whiting - 318</td>
<td>Sidewalk</td>
<td>31'x3.5' + 6'x3' (pad)</td>
<td>126.5</td>
<td>$822.25</td>
</tr>
<tr>
<td>37</td>
<td>Whiting - 320</td>
<td>Sidewalk</td>
<td>6'x3' (pad)</td>
<td>18</td>
<td>$117.00</td>
</tr>
<tr>
<td>38</td>
<td>Whiting - 327</td>
<td>Sidewalk</td>
<td>33'x3.5'</td>
<td>115.5</td>
<td>$750.75</td>
</tr>
<tr>
<td>39</td>
<td>Whiting - 332</td>
<td>Sidewalk</td>
<td>34'x3.5'</td>
<td>119</td>
<td>$773.50</td>
</tr>
<tr>
<td>40</td>
<td>Whiting - 337</td>
<td>Sidewalk</td>
<td>3'x5' (pad)</td>
<td>15</td>
<td>$97.50</td>
</tr>
<tr>
<td>41</td>
<td>Whiting - 338</td>
<td>Sidewalk</td>
<td>38'x3.5'</td>
<td>133</td>
<td>$864.50</td>
</tr>
<tr>
<td>42</td>
<td>Whiting - 341</td>
<td>Sidewalk</td>
<td>2.5'x5' (pad)</td>
<td>12.5</td>
<td>$81.25</td>
</tr>
<tr>
<td>43</td>
<td>Whiting - 347</td>
<td>Sidewalk</td>
<td>27'x3.5'</td>
<td>94.5</td>
<td>$614.25</td>
</tr>
<tr>
<td>44</td>
<td>Whiting - 432</td>
<td>Sidewalk</td>
<td>30'x3.5'</td>
<td>105</td>
<td>$682.50</td>
</tr>
<tr>
<td>45</td>
<td>Whiting - 437</td>
<td>Sidewalk</td>
<td>4'x6'(pad) + 26'x3.5' + 8'x3.5'</td>
<td>143</td>
<td>$929.50</td>
</tr>
<tr>
<td>46</td>
<td>Whiting - 502</td>
<td>Sidewalk</td>
<td>26'x3.5'</td>
<td>91</td>
<td>$591.50</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Area/Dimensions</td>
<td>Quantity</td>
<td>Unit Cost</td>
<td>Total Cost</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------</td>
<td>-----------------</td>
<td>----------</td>
<td>-----------</td>
<td>------------</td>
</tr>
<tr>
<td>47</td>
<td>Whiting - 512</td>
<td>Sidewalk</td>
<td>30'x3.5' + 3.5'x5.5'(pad)</td>
<td>124.25</td>
<td>$807.63</td>
</tr>
<tr>
<td>48</td>
<td>Whiting - 517</td>
<td>Sidewalk</td>
<td>7'x3.5'</td>
<td>24.5</td>
<td>$159.25</td>
</tr>
<tr>
<td>49</td>
<td>Whiting - 538</td>
<td>Sidewalk</td>
<td>22'x3.5'</td>
<td>77</td>
<td>$500.50</td>
</tr>
<tr>
<td>50</td>
<td>Whiting - 542</td>
<td>Sidewalk</td>
<td>35'x3.5'</td>
<td>122.5</td>
<td>$796.25</td>
</tr>
<tr>
<td>51</td>
<td>Whiting - 617</td>
<td>Sidewalk</td>
<td>32'x3.5'</td>
<td>112</td>
<td>$728.00</td>
</tr>
<tr>
<td>52</td>
<td>Virginia - 102 across from</td>
<td>Sidewalk</td>
<td>52'x3.5' + 8'x5' + 7'x5'</td>
<td>257</td>
<td>$1,670.50</td>
</tr>
<tr>
<td>53</td>
<td>Virginia - 122</td>
<td>Sidewalk</td>
<td>3'x5'</td>
<td>15</td>
<td>$97.50</td>
</tr>
<tr>
<td>54</td>
<td>Virginia - 139</td>
<td>Sidewalk</td>
<td>36'x4' + 4.5'x3' (pad)</td>
<td>157.5</td>
<td>$1,023.75</td>
</tr>
<tr>
<td>55</td>
<td>Virginia - 200</td>
<td>Sidewalk</td>
<td>4'x4' + 6'x13' (pad)</td>
<td>94</td>
<td>$611.00</td>
</tr>
<tr>
<td>56</td>
<td>Virginia - 224</td>
<td>Sidewalk</td>
<td>31'x4'</td>
<td>124</td>
<td>$806.00</td>
</tr>
<tr>
<td>57</td>
<td>Virginia - 309</td>
<td>Sidewalk</td>
<td>28'x3.5'</td>
<td>98</td>
<td>$637.00</td>
</tr>
<tr>
<td>58</td>
<td>Virginia - 321</td>
<td>Sidewalk</td>
<td>12'x3.5' + 38'x3.5'</td>
<td>175</td>
<td>$1,137.50</td>
</tr>
<tr>
<td>59</td>
<td>Virginia - 362</td>
<td>Sidewalk</td>
<td>25'x3.5'</td>
<td>87.5</td>
<td>$568.75</td>
</tr>
<tr>
<td>60</td>
<td>Virginia - 402</td>
<td>Sidewalk</td>
<td>52'x3.5' + 6'x5.5'(pad)</td>
<td>215</td>
<td>$1,397.50</td>
</tr>
<tr>
<td>61</td>
<td>Virginia - 431</td>
<td>Sidewalk</td>
<td>35'x3.5'</td>
<td>122.5</td>
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<td>Nash - 601 N (on Mariposa, 300' W of Nash)</td>
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<tr>
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### Addendum: CURB, GUTTER, SIDEWALK, AND OTHER CONCRETE IMPROVEMENTS

**PROJECT NO. PW 14-16**

13475.25  $87,589.13

#### C. Curb Only

<table>
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<tr>
<th>NO.</th>
<th>ADDRESS</th>
<th>TYPE OF REPAIR</th>
<th>DIMENSIONS</th>
<th>QUANTITY</th>
<th>ESTIMATED COST</th>
</tr>
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<tbody>
<tr>
<td>1</td>
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### D. Curb and Gutter

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<th>QUANTITY</th>
<th>ESTIMATED COST</th>
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<tbody>
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<td>1</td>
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**Total Estimated Cost:** $101,950.00

### E. Driveway

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<th>DIMENSIONS</th>
<th>QUANTITY</th>
<th>ESTIMATED COST</th>
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</table>
Addendum: CURB, GUTTER, SIDEWALK, AND OTHER CONCRETE IMPROVEMENTS
PROJECT NO. PW 14-16

<table>
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<th>No.</th>
<th>City</th>
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<th>Description</th>
<th>Length</th>
<th>Width</th>
<th>Cost</th>
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AGENDA DESCRIPTION:

Consideration and possible action regarding the adoption of Ordinance No. 1516 for a Zone Change from the Light Manufacturing (M-1) Zone to the El Segundo South Campus Specific Plan (ESSCSP) Zone, a Zone Text Amendment, a Specific Plan, and a Development Agreement on the site located at 2000-2100 East El Segundo Boulevard. Applicant: The Raytheon Company (Fiscal Impact: If approved, the project would provide $4,000,000 in direct payment revenue; up to $1,071,228 in direct payment revenue related to development fee per square foot; an estimated $11,893,000 roadway infrastructure; $75,000 for bicycle parking; and potentially $375,000 for wastewater infrastructure improvements)

RECOMMENDED COUNCIL ACTION:

1. Waive second reading and adopt Ordinance No. 1516; and/or
2. Alternatively, discuss and take other possible action related to this item.

ATTACHED SUPPORTING DOCUMENTS:

1. Ordinance No. 1516 and Attachments (a. Zoning Map Amendment; b. Specific Plan; c. Development Agreement; and d. Conditions of Approval)

FISCAL IMPACT: N/A

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ORIGINATED BY: Masa Alkire, AICP, Principal Planner and Paul Samaras, Acting Planning Manager

REVIEWED BY: Sam Lee, Director of Planning and Building Safety

APPROVED BY: Greg Carpenter, City Manager

I. Background and Discussion

On December 15, 2015, the City Council adopted Resolution No. 4958 certifying the Environmental Impact Report (Environmental Assessment No. EA-905) for the El Segundo South Campus Specific Plan Project including the Mitigation Monitoring and Reporting Program (MMRP); amending the General Plan (Amendment No. GPA 11-01); and approving Subdivision No. SUB 11-02 for Vesting Tentative Parcel Map (VTM) No. 71551. The City Council also introduced an Ordinance for Zone Change No. ZC 11-02, Zone Text Amendment No. ZTA 11-01, Specific Plan No. SP 11-01, and Development Agreement No. DA 11-02. The Council may waive second reading and adopt the Ordinance. If adopted, Ordinance No. 1516 will become effective in 30 days.
ORDINANCE NO. 1516

AN ORDINANCE APPROVING ZONE CHANGE AND ZONING MAP AMENDMENT NO. ZC 11-02; ZONE TEXT AMENDMENT NO. ZTA 11-01; SPECIFIC PLAN NO. SP 11-01; AND DEVELOPMENT AGREEMENT NO. DA 11-02; ADDING ESMC § 15-3-2(A)(10) AND AMENDING ESMC § 15-3-2(A) FOR THE EL SEGUNDO SOUTH CAMPUS SPECIFIC PLAN PROJECT AT 2000-2100 EAST EL SEGUNDO BOULEVARD.

The City Council of the City of El Segundo does ordain as follows:

SECTION 1: Environmental Assessment. Resolution No. 4958 adopted a Final Environmental Impact Report (FEIR) and a Statement of Overriding Considerations (SOC) for this Project which, among other things, properly assesses the environmental impact of this Ordinance, and the Project, in accordance with CEQA. This Ordinance incorporates by reference the environmental findings and analysis set forth in Resolution No. 4958.

SECTION 2: Factual Findings and Conclusions. The factual findings and conclusions set forth in Resolution No. 4958, adopted on December 15, 2015, are incorporated as if fully set forth.

SECTION 3: Zone Change Findings. Pursuant to ESMC Chapter 15-26, the City Council finds as follows:

A. Based upon the findings in Section 2, the proposed Zone Change is necessary to carry out the proposed project because the proposed General Plan Amendment would change the land use classification of the project site from Light Industrial (M-1) to El Segundo South Campus Specific Plan (ESSCSP). The proposed Zone Change is necessary to maintain consistency with the proposed General Plan land use designation of El Segundo South Campus Specific Plan.

B. ESMC Title 15 is intended to be the primary tool for implementing the goals, objectives and policies of the El Segundo General Plan. The zone change will maintain consistency with the proposed change in General Plan land use designation to El Segundo South Campus Specific Plan and is also consistent with the General Plan goals, objectives and policies.

SECTION 4: ESMC § 15-3-2(A)(10) is added to read as follows:

“10. El Segundo South Campus Specific Plan
There is one zone intended to be used within the boundaries of the El Segundo South Campus Specific Plan. The zone is:

ESSCSP  -  El Segundo South Campus Specific Plan

SECTION 5: Specific Plan Findings. The proposed creation of the El Segundo South Campus Specific Plan (ESSCSP) is desirable to implement the proposed project. Without amending the ESMC, the current zoning would not permit mixed use development with an overall maximum 0.6 FAR based on the 142.2 gross acre size of the project area. An amendment to ESMC § 15-3-2(A) to create the El Segundo South Campus Specific Plan (ESSCSP) is necessary for consistency with the General Plan.

SECTION 6: Development Agreement Findings. Pursuant to City Council Resolution No. 3268, adopted June 26, 1984, the City Council finds that:

A. The project is consistent with the objectives, policies, general land uses, and programs specified in the general plan and any applicable specific plan. The Development Agreement would provide multiple public benefits (as set forth in the Development Agreement) in exchange for valuable development rights (ten-year entitlement with a five-year extension option).

B. The project is compatible with the uses authorized in, and the regulations prescribed for, the land use district in which the real property is located. The proposed project includes a new land use designation and zoning classification, which establishes the permitted uses and development standards that would apply to the project. These uses and development standards are similar and compatible with the other commercially zoned districts in the City.

C. The project conforms to public convenience, general welfare and good land use practice. The El Segundo South Campus Specific Plan includes a range of commercial and industrial uses that will contribute to job creation opportunities and balance growth with local resources and infrastructure capacity. The project will also provide new roadway links in locations identified as needing future roadways in the General Plan Circulation Element, as well as provide new bicycle and pedestrian network improvements.

D. The project will not be detrimental to health, safety and general welfare. An EIR was completed to evaluate the project are reviewed issue areas such as Hazards and Hazardous Materials, Hydrology and Water Quality, Air Quality, and Noise. All feasible mitigation has been incorporated into the project to reduce or eliminate potential impacts and to maintain public health, safety and general welfare.
E. The project will not adversely affect the orderly development of property or the preservation of property values. This project is surrounded by previously developed commercial land and the proposed uses of the El Segundo South Campus Specific Plan are consistent with surrounding development and will not adversely affect the value of neighboring properties. The proposed El Segundo South Campus Specific Plan development standards and development agreement will ensure that the project will be developed in an orderly fashion. All mitigation measures will be implemented at the time and place impacts occur.

SECTION 7: Actions. The City Council takes the following actions:

A. ESMC § 15-3-2(A)(10) is added to read as follows:

"10. El Segundo South Campus Specific Plan

There is one zone intended to be used within the boundaries of the El Segundo South Campus Specific Plan. The zone is:

ESSCSP - El Segundo South Campus Specific Plan"

B. The City's Zoning Map is amended by changing the Project site from "Light Industrial" to "El Segundo South Campus Specific Plan." The corresponding changes to the Zoning Map are set forth in attached Exhibit "A," which is incorporated into this Ordinance by reference.

C. The "El Segundo South Campus Specific Plan" is adopted as set forth in attached Exhibit "B," which is incorporated into this Ordinance by reference.

D. The Development Agreement by and between the City of El Segundo and the Raytheon Corporation, as set forth in attached Exhibit "C," and incorporated into this Ordinance by reference, is approved. The Mayor is authorized to execute the Development Agreement in a form approved by the City Attorney.

E. To the extent they are not otherwise adopted or approved by this Ordinance, and subject to the conditions listed on attached Exhibit "D," which are incorporated into this Ordinance by reference, the City Council approves Zone Change and Zoning Map Amendment No. ZC 11-02, Zone Text Amendment No. ZTA 11-01, Specific Plan No. SP 11-01, and Development Agreement No. DA 11-02.

SECTION 8: Technical Corrections. The City Manager, or designee, is authorized
to make technical corrections, in a form approved by the City Attorney, to maps, diagrams, tables, and other, similar, documents (collectively, "Maps") that may be required to reconcile the changes made by this Ordinance with amendments made to the Zoning Map by other City Council action in unrelated land use applications.

SECTION 9: Reliance on Record. Each and every one of the findings and determinations in this Ordinance are based on the competent and substantial evidence, both oral and written, contained in the entire record relating to the project. The findings and determinations constitute the independent findings and determinations of the City Council in all respects and are fully and completely supported by substantial evidence in the record as a whole.

SECTION 10: Limitations. The City Council’s analysis and evaluation of the Project is based on the best information currently available. It is inevitable that in evaluating a project that absolute and perfect knowledge of all possible aspects of the project will not exist. One of the major limitations on analysis of the project is the City Council’s knowledge of future events. In all instances, best efforts have been made to form accurate assumptions. Somewhat related to this are the limitations on the City’s ability to solve what are in effect regional, state, and national problems and issues. The City must work within the political framework within which it exists and with the limitations inherent in that framework.

SECTION 11: Summaries of Information. All summaries of information in the findings which precede this section, are based on the substantial evidence in the record. The absence of any particular fact from any such summary is not an indication that a particular finding, is not based in part on that fact.

SECTION 12: Effectiveness of ESMC. Repeal or amendment of any provision of the ESMC will not affect any penalty, forfeiture, or liability incurred before or preclude prosecution and imposition of penalties for any violation occurring before this Ordinance’s effective date. Any such repealed part will remain in full force and effect for sustaining action or prosecuting violations occurring before the effective date of this Ordinance.

SECTION 13: Recordation. The City Clerk is directed to certify the passage and adoption of this Ordinance; cause it to be entered into the City of El Segundo’s book of original ordinances; make a note of the passage and adoption in the records of this meeting; and, within fifteen (15) days after the passage and adoption of this Ordinance, cause it to be published or posted in accordance with California law.

SECTION 14: Severability. If any part of this Ordinance or its application is deemed invalid by a court of competent jurisdiction, the city council intends that such invalidity will not affect the effectiveness of the remaining provisions or applications and, to this end, the provisions of this Ordinance are severable.
SECTION 15:  

*Effective Date.* This Ordinance will become effective on the thirty-first (31st) day following its passage and adoption.

PASSED, APPROVED AND ADOPTED this 19th day of January 2016.

Suzanne Fuentes, Mayor
ATTEST:

STATE OF CALIFORNIA    )
COUNTY OF LOS ANGELES  )    SS
CITY OF EL SEGUNDO     )

I, Tracy Sherrill Weaver, City Clerk of the City of El Segundo, California, do hereby certify that the whole number of members of the City Council of said City is five; that the foregoing Ordinance No. 1516 was duly introduced by said City Council at a regular meeting held on the 15th day of December 2015, and was duly passed and adopted by said City Council, approved and signed by the Mayor, and attested to by the City Clerk, all at a regular meeting of said Council held on the 19th day of January 2016, and the same was so passed and adopted by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

__________________________
Tracy S. Weaver, City Clerk

APPROVED AS TO FORM:
Mark D. Hensley, City Attorney

By: ________________________
Karl H. Berger, Assistant City Attorney
EXHIBIT A
2000-2100 East El Segundo Boulevard
Proposed Zoning Designation
El Segundo South Campus Specific Plan

City of El Segundo
CITY COUNCIL ORDINANCE

EXHIBIT B

EL SEGUNDO

SOUTH CAMPUS

SPECIFIC PLAN
EL SEGUNDO SOUTH CAMPUS
SPECIFIC PLAN

Specific Plan No. 11-01

October 2015
# EL SEGUNDO SOUTH CAMPUS SPECIFIC PLAN

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EL SEGUNDO SOUTH CAMPUS SPECIFIC PLAN

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I. INTRODUCTION

A. SPECIFIC PLAN AREA

The El Segundo South Campus Specific Plan (ESSC-SP) area is located in the City of El Segundo, County of Los Angeles, California. El Segundo is situated 15 miles southwest of downtown Los Angeles. The City of El Segundo is located south of the City of Los Angeles, west of the City of Hawthorne and the County of Los Angeles, north of the City of Manhattan Beach, and the east of the City of Los Angeles and the Pacific Ocean (refer to Exhibit 1, Regional Vicinity Map).

More specifically, the roughly 142.28 gross acre Campus site ("Campus") is located in the southeast quadrant of the City of El Segundo, approximately 1.0 miles south of the Los Angeles International Airport (LAX) and the Glen Anderson Century Freeway (I-105), two miles west of the San Diego Freeway (SR-405), and approximately two miles west of the juncture of these two freeways. The Campus is bounded by El Segundo Boulevard to the north, the elevated MTA Line and an older industrial subdivision on Coral Circle to the east, a Union Pacific Railroad spur and the El Segundo sump to the south, and a Southern California Edison high voltage transmission easement to the west (refer to Exhibit 2, Local Vicinity Map, and Exhibit 3, Local Vicinity Aerial View). The adjacent zoning uses are: corporate office and mixed-use to the north, across El Segundo Boulevard; light manufacturing to the east and south; and open space and public facility to the west. A multi-media zone overlies the entire eastern half of the City, including the Specific Plan Area.

B. BACKGROUND

In 1978 a Precise Plan was approved for Hughes (which merged with Raytheon Company in December 1997) to build a total of 2,575,000 square feet of improvements on the Campus for a FAR of 0.42. The Precise Plan project consisted of two main components – an office tower of up to 16 stories to be located on the northwest portion of the Campus and a large low-profile complex housing the engineering and manufacturing components. The approval allowed Hughes to consolidate its corporate headquarters which was then in Culver City with its electro-optical data systems group which was already located elsewhere in El Segundo. The Campus was chosen by Hughes for the flexibility and consolidation potential made possible by the size of the property, the proximity to other Hughes’ facilities, and the proximity to LAX - considerations that remain important today. Before the implementation of the Precise Plan, the Campus had been used primarily for farming.
EXHIBIT 1
REGIONAL LOCATION MAP
Through the years the Precise Plan went through several changes including moving the recreation component from under the Edison Right-of-Way to the northwest portion of the Campus, eliminating the corporate office tower which was planned for the northwest corner of the Campus, and adding additional facilities. Up until 1983 there was no official “Precise Plan” map. With Hughes’ request to construct additional storage buildings in 1983, the City Council provided that the plan that was submitted with the amendment request would be the official Precise Plan which could only be modified with Planning Commission and City Council approval. In 1987, the City Council approved the last modification of the Precise Plan. Today there are 11 structures on the Campus, including the recreation facility, comprising approximately 1,802,513 square feet of net development, for an FAR of approximately 0.29 (refer to Exhibit 4, Existing Development). The current net square footage is broken down as follows between uses:

- Office 1,018,959 s.f.
- Laboratory 303,825 s.f.
- Manufacturing 373,634 s.f.
- Warehouse 106,095 s.f.

More specifically, the structures shown on Exhibit 4 consist of:

Table I-1
Existing Uses

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*Note: Building E-24 includes locker rooms, restroom and shower rooms which are non-assignable areas for purposes of net square footage.
Under the existing approvals, only an additional 215,390 net square feet can be built for a total FAR of 0.325. With this FAR, the Property is extremely underdeveloped as both the General Plan and zoning for similar light industrial uses allow a 0.60 FAR as of right. Further, the El Segundo Municipal Code (ESMC) was recently amended to clarify that the FAR is based on net square feet of development in the light manufacturing zone. Currently the Campus is built close to the maximum FAR currently allowed. The limitations caused by the Precise Plan have caused Raytheon to utilize property in other areas for its operations when the need arises. This creates inefficiency and unnecessary costs, as well as results in economic losses for the City.

In order to make efficient use of the Campus, Raytheon filed for this Specific Plan in December 2011 along with other applications, including a General Plan Amendment, Zoning Amendment, and Tentative Map. The intent of the Specific Plan is to allow Raytheon to develop the Specific Plan area with any combination of allowed uses provided that the FAR does not exceed a specified development square footage (at a maximum FAR of 0.60 within the ESSCSP area) and the specified peak hour trip ceiling on new development (26,585 daily trips, 3042 a.m. peak hour trips and 3120 p.m. peak hour trips). The adoption of this Specific Plan will allow Raytheon to expand its operations, invest in the City of El Segundo, and make use of its property in a manner similar to adjacent properties.

C. DEMOGRAPHICS

According to the 2010 United States Census, as of 2010 El Segundo had a population of 16,654 persons and a total of 7410 dwelling units. From 2000 to 2010, El Segundo’s population increased by 4%. The 2009 Profile of the City of El Segundo prepared by the Southern California Association of Governments (“SCAG”) indicates that as of 2008 there were 53,715 jobs in the City of El Segundo, which was 1.3% lower than the 2003 level. Raytheon employs approximately 7,000 of these employees. During the period from 2003 to 2008 there was a 13.2% decrease in manufacturing jobs although manufacturing jobs remain the largest sector of jobs in the City.

D. ECONOMIC CONTEXT

El Segundo has a daytime population of approximately 85,000 persons compared to its resident population of approximately 17,000 persons. Through the years El Segundo has steadily moved away from heavy industrial and manufacturing uses towards more diversified commercial and professional uses. With the exception of the Chevron Refinery and the Air Products Chemical Plants, most heavy industrial uses have relocated outside of the City. El Segundo is home to many major corporations including Raytheon, Boeing, Chevron, Computer Sciences Corporation, DirecTV, Mattel, Xerox, Time Warner Cable, The Aerospace Corporation, and Northrop Grumman. Raytheon is the City’s largest employer.

Over the past few years there has been a net loss of jobs in the City. The potential for additional businesses and jobs that may be created by this Specific Plan will improve the overall economic health of the City, allowing the City to provide a high quality of municipal services to the benefit of the City’s resident and business community.
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II. OVERVIEW OF THE SPECIFIC PLAN

A. PURPOSE AND AUTHORITY OF SPECIFIC PLAN

The purpose of this Specific Plan is to provide a foundation for the proposed land uses on the subject property through the application of regulations, standards and design guidelines. The El Segundo South Campus Specific Plan provides text and exhibits which describe the proposed land uses and associated guidelines.

This Specific Plan is adopted pursuant to Government Code §§ 65450 through 65457.

Pursuant to Government Code § 65450, a Specific Plan must include text and a diagram or diagrams which specify all of the following in detail:

- The distribution, location, and extent of the uses of land, including open space within the area covered by the plan.

- The proposed distribution, location, extent, and intensity of major components of public and private transportation, sewage, water, drainage, solid waste disposal, energy and other essential facilities proposed to be located within the land area covered by the plan and needed to support the land uses described in the plan.

- Standards and criteria by which development will proceed, and standards for the conservation, development, and utilization of natural resources, where applicable.

- A program of implementation measures including regulations, programs, public works projects and financing measures necessary to carry out the above items.

- A discussion of the relationship of the Specific Plan to the General Plan.

A thorough review of the El Segundo General Plan shows that this Specific Plan is compatible and consistent with the goals and policies outlined in the General Plan. This Specific Plan will further the goals and policies of the General Plan as more fully described below.

This Specific Plan was prepared to provide the essential relationship between the policies of the El Segundo General Plan and actual development in the Project area. By functioning as a regulatory document, the El Segundo South Campus Specific Plan provides a means of implementing the City of El Segundo’s General Plan. All future development plans and entitlements within the Specific Plan boundaries must be consistent with the standards set forth in this document.
B. SPECIFIC PLAN SCOPE AND GOALS

The City of El Segundo is an employment-led community and accordingly, development has been led by employment rather than housing growth. The El Segundo South Campus Specific Plan will serve the mission of economic development in the City which is to create, maintain, and implement a business climate that fosters a strong economic community, develop a strategic plan that will result in business retention and attraction, provide an effective level of City services to all elements of the community, and maintain the quality of life that has characterized El Segundo for more than nine decades.

Permitted uses within the Campus will create job opportunities and seek balance between growth, local resources, and infrastructure capacity. Additionally, the growth allowed by the Specific Plan will create a synergy with other uses in the area and help those businesses to grow as well. The development allowed under the Specific Plan will provide a basis for a positive contribution to the maintenance and expansion of El Segundo’s economic base as development typically increases the City’s business license taxes, increases the City’s utility user taxes, increases the City’s property taxes, and increases the City’s sales taxes. An increased economic base will provide the City with resources to provide high-quality services to its residents and daytime population.

C. CONSISTENCY WITH THE GENERAL PLAN

The El Segundo General Plan provides the underlying fundamentals of the El Segundo South Campus Specific Plan, which serves both as a planning and regulatory document. The Specific Plan is the document implementing the El Segundo General Plan for the Campus area.

Proposed development plans or agreements, tentative tract or parcel maps, and any other development approvals must be consistent with the Specific Plan. Projects consistent with this Specific Plan will be automatically deemed consistent with the General Plan.

The El Segundo South Campus Specific Plan requires a General Plan Amendment that changes the Land Use Designation from Light Industrial, Public Facility and Open Space to El Segundo South Campus Specific Plan with an accompanying Land Use map change. With approval of this amendment, the Specific Plan is consistent with the General Plan of the City of El Segundo. More specifically, the Specific Plan directly implements or furthers the intent of the following goals, objectives and policies of the General Plan:

ECONOMIC DEVELOPMENT ELEMENT

Goal ED1: To create in El Segundo a strong, healthy economic community in which all diverse stakeholders may benefit.

Policy ED1-1.1: Maintain economic development as one of the City’s and the business and residential communities’ top priorities.
Policy ED1-1.2: Focus short-run economic development efforts on business retention and focus longer-run efforts on the diversification of El Segundo’s economic base in order to meet quality of life goals.

Objective ED1-2: Center diversification efforts on targeted industries that meet the City’s criteria for job creation, growth potential, fiscal impact, and fit with local resources.

Policy ED1-2.1: Seek to expand El Segundo’s retail and commercial base so that the diverse needs of the City’s business and residential communities are met.

Policy ED1-2.2: Maintain and promote land uses that improve the City’s tax base, balancing economic development and quality of life goals.

Goal ED2: To provide a supportive and economically profitable environment as the foundation of a strong local business community.

Policy ED2-1.3: Develop a framework within which interested groups can work together on matters of common interest related to economic growth, its orderly management, and the resolution of attendant problems to improve the City’s business climate.

LAND USE ELEMENT

Goal LU4: Provide a stable tax base for the City through development of new commercial uses, primarily within a mixed-use environment, without adversely affecting the viability of Downtown.

Objective LU4-1: Promote the development of high quality retail facilities in proximity to major employment centers.

Policy LU4-3.1: Encourage retail uses, where appropriate, on the ground floor of Urban Mixed-Use and corporate offices with other uses above.

Policy LU4-3.2: Encourage mixed-use developments within one-quarter mile of the Green Line Stations.

Objective LU4-4: Provide areas where development has the flexibility to mix uses, in an effort to provide synergistic relationships which have the potential to maximize economic benefit, reduce traffic impacts, and encourage pedestrian environments.
Policy LU4-4.1: Policies and zoning regulations shall be developed to help guide the development of commercial activities within mixed-use projects.

Policy LU4-4.4: Promote commercial uses, in conjunction with other uses, in buildings within a quarter-mile walking radius of the Green Line Stations.

Policy LU4-4.6: Promote mixed-use development near transit nodes and encourage modes of transportation that do not require an automobile.

**Goal LU5:** Retain and attract clean and environmentally safe industrial uses that provide a stable tax base and minimize any negative impact on the City.

**Objective LU5-1:** Attract the kinds of industrial uses which will be economically beneficial to the community as well as enhance the environmental quality of the City.

**Objective LU5-2:** Encourage the construction of high-quality, well designed industrial developments through adoption of property development standards and provisions of community services and utilities.

Policy LU5-2.1: New industrial developments shall provide landscaping in parking areas and around the buildings. This landscaping is to be permanently maintained.

Policy LU5-2.5: Employee recreational facilities shall be provided by the employer for large industrial developments.

**Objective LU5-4:** Preserve and maintain a balanced and diversified industrial base.

**Objective LU5-6:** Encourage a mix of office and light industrial uses in industrial areas.

Policy LU6-1.1: Continue to provide uniform and high quality park and recreational opportunities to all areas of the City, for use by residents and employees.

**CIRCULATION ELEMENT**

**Goal C1:** Provide a safe, convenient, and cost-effective circulation system to serve the present and future circulation needs of the El Segundo community.
Policy C1-1.8: Provide all residential, commercial, and industrial areas with efficient and safe access to the major regional transportation facilities.

Policy C1-1.9: Provide all residential, commercial, and industrial areas with efficient and safe access for emergency vehicles.

Goal C2: Provide a circulation system that incorporates alternatives to the single-occupant vehicle, to create a balance among travel modes based on travel needs, costs, social values, user acceptance, and air quality considerations.

Objective C2-1: Provide a pedestrian circulation system to support and encourage walking as a safe and convenient travel mode within the City's circulation system.

Policy C2-1.3: Encourage new developments in the City by participating in the development of the citywide system of pedestrian walkways and require participation funded by the Project developer where appropriate.

Policy C2-1.4: Ensure the installation of sidewalks on all future arterial widening or new construction projects, to establish a continuous and convenient link for pedestrians.

Objective C2-2: Provide a bikeway system throughout the City to support and encourage the use of the bicycle as a safe and convenient travel mode within the City's circulation system.

Policy C2-2.1: Implement the recommendations on the Bicycle Master Plan contained in the Circulation Element, as the availability arises; i.e., through development, private grants, signing of shared routes.

Policy C2-2.2: Encourage new development to provide facilities for bicyclists to park and store their bicycles and provide shower and clothes hanging facilities at or close to the bicyclist's work destination.

Policy C2-2.6: Encourage design of new streets with the potential for Class I or Class II bicycle routes that separate the automobile, bicycle, and pedestrian to the maximum extent feasible.

Policy C2-2.8: Evaluate bikeway system links with the Metro Green Line rail stations and improve access wherever feasible.
Policy C3-1.8: Require the provision of adequate pedestrian and bicycle access for new development projects through the development review process.

OPEN SPACE AND RECREATION ELEMENT

Goal OS1: Provide and maintain high quality open space and recreational facilities that meet the needs of the existing and future residents and employees within the City of El Segundo.

Objective OS1-3: Provide recreational programs and facilities for all segments of the community.

Policy OS1-3.4: Encourage commercial recreational uses to locate in El Segundo.

CONSERVATION ELEMENT

Goal CN2: Assist in the maintenance of a safe and sufficient water supply and distribution system that provides for all the water needs within the community.

Policy CN2-7: Require new construction and development to incorporate the principles and practices of sound landscape design and management, particularly those conserving water and energy.

Policy CN2-11: Encourage, whenever appropriate and feasible, development techniques which minimize surface run-off and allow replenishment of soil moisture. Such techniques may include, but not be limited to, the on-site use and retention of storm water, the use of pervious paving material (such as walk-on-bark, pea gravel, and cobble mulches), the preservation of vegetative covers, and efficiently designed and managed irrigation systems.

Goal CN5: Develop programs to protect, enhance, and increase the amount and quality of the urban landscape to maximize aesthetic and environmental benefits.

Policy CN5-8: Increase the quantity of plant material to:

- Increase filtration of airborne particulate matter
- Increase oxygen production
- Provide carbon storage
- Reduce the solar heat load on structures and heat gain from paved surfaces
- Increase the percolation of water into soil


- Decrease run-off and evapotranspiration

Policy CN5-10: Develop standards, procedures, and guidelines for sound landscape design and management. Incorporate these standards, procedures, and guidelines, including conservation concepts, into the City’s review and approval process for residential and non-residential projects.

AIR QUALITY ELEMENT

Goal AQ4: Reduce Motorized Transportation

Policy AQ4-1.1: It is the policy of the City of El Segundo that the City actively encourage the development and maintenance of a high quality network of pedestrian and bicycle routes, linked to key locations, in order to promote non-motorized transportation.

NOISE ELEMENT

Goal N1: Encourage a high quality environment within all parts of the City of El Segundo where the public’s health, safety, and welfare are not adversely affected by excessive noise.

Objective N1-1: It is the objective of the City of El Segundo to ensure that City residents are not exposed to mobile noise levels in excess of the interior and exterior noise standards or the single event noise standards specified in the El Segundo Municipal Code.

Policy N1-1.4: Consider noise impacts from traffic arterials and railroads, as well as aircraft, when identifying potential new areas for residential land use.

Objective N1-2: It is the objective of the City of El Segundo to ensure that City residents are not exposed to stationary noise levels in excess of El Segundo’s Noise Ordinance standards.

PUBLIC SAFETY ELEMENT

Goal PS1: Protect the public health and safety and minimize the social and economic impacts associated with geologic hazards.

HAZARDOUS MATERIALS AND WASTE MANAGEMENT ELEMENT

Goal HM1: Protect health and safety of citizens and businesses within El Segundo and neighboring communities.
Goal HM3: Ensure compliance with State laws regarding hazardous materials and waste management.

Goal HM4: Assist in meeting State, Federal, and County hazardous materials and waste management goals, as these are consistent with City goals.

Goal HM5: Assist in meeting State and County goals to reduce hazardous waste generation to the maximum extent possible.

Goal HM8: Maintain the economic viability of the City of El Segundo.

Policy HM8-1: Promote continuous updating of business plans by companies in the City.

D. ENTITLEMENTS

The following entitlements are required in conjunction with this Specific Plan (SP No. 11-01):

- General Plan Amendment No. 11-01 to change the land use designation from Light Industrial, Public Facility and Open Space to El Segundo South Campus Specific Plan with an accompanying Land Use map change.

- Zone Text Amendment No. 11-01 to: 1) add “El Segundo South Campus Specific Plan” to El Segundo Municipal Code (“ESMC”) §15-3-1; and 2) add a new ESMC §15-3-2(A)(8) “El Segundo South Campus Specific Plan.”

- Zone Change No. 11-02 to rezone the property from Light Manufacturing, Open Space and Public Facility to El Segundo South Campus Specific Plan.

- Development Agreement No. 11-02 between the City of El Segundo and Raytheon Company.

- Vesting Tentative Map # 71551 – dividing the Specific Plan Area into 26 individual lots.

Findings justifying the General Plan Amendment and Zone Change include:

1. The Specific Plan designation is intended to provide more flexibility for the development of a master-planned Campus that will be constructed in several phases.

2. The primary objective of the Specific Plan is to provide for superior, more comprehensive, site planning of the Campus.

3. Uses permitted within the Campus are consistent with prior zoning and compatible with adjacent uses.
E. EXISTING LAND USES

The City of El Segundo has distinctive land use patterns, which are divided into four quadrants by the intersection of Sepulveda Boulevard and El Segundo Boulevard. Compatibility of an individual land use is determined mainly by its relationship to other uses within its quadrant. The El Segundo South Campus Specific Plan area is located in the southeastern quadrant of the City of El Segundo, which is east of Sepulveda Boulevard and south of El Segundo Boulevard. The design and implementation of this Specific Plan relate directly to its position within this larger context.

The southeast quadrant of the City is primarily designated for light industrial which allows a mixture of industrial and office uses. This quadrant also contains a commercial region which is home to the retail development of Plaza El Segundo, an approximately 388,000 square foot lifestyle retail center. The northeast quadrant of the City lies directly across El Segundo Boulevard and consists primarily of corporate office and urban mixed uses which allow for office and commercial uses. The southwest quadrant of the City lies directly across Sepulveda Boulevard and consists primarily of oil refinery/heavy industrial use. A multimedia zone overlies both the southeast and northeast quadrants of the City. Before the adoption of the El Segundo South Campus Specific Plan (ESSC-SP) the property was designated primarily as Light Industrial in the General Plan Land Use Element with Light Industrial zoning.

Adjacent land uses include the following:

North: Across El Segundo Boulevard, include mid- and high-rise office buildings with multi-story parking structures and a hotel. LAX is located approximately 1.0 mile north of the Campus.

East: The adjacent land uses to the east include the elevated MTA Green Line and a variety of one and two story industrial uses along Coral Circle. The El Segundo Boulevard Green Line station is located at the northeast corner of the Campus.

South: A Union Pacific Railroad spur line lies immediately to the south and further to the south, the Plaza El Segundo commercial center. Immediately to the southwest of the Campus is a City of El Segundo Stormwater retention basin and to the west of that are public storage units and a Federal Express distribution facility.

West: Land uses to the west include the El Segundo Municipal Golf Course and the West Basin Municipal Water District Water Recycling Facility. The Chevron Refinery is located across Sepulveda Boulevard.
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III. LAND USE PLAN

The Raytheon campus has been in place since the 1970s and has been modified and expanded several times as the need arose. The existing Campus includes 1,802,513 square feet of mixed development on the site’s 142.28 gross acres, 13,624 square feet of which would be demolished as part of the land use program. The project area, excluding the right-of-way of El Segundo Boulevard, is 137.06 acres.

A. DEVELOPMENT CONCEPT

The Specific Plan establishes the general type, parameters and character of the development in order to develop an integrated Campus that is also compatible with the surrounding area. The Campus’ proximity to freeways, major arterials, and the Metro Rail makes the Campus an ideal location for the expansion of uses and is consistent with the City’s desire to facilitate economic development in El Segundo.

The El Segundo South Campus Specific Plan development concept provides flexibility for Raytheon to either expand its existing operations or develop a mixed-use project that would be compatible with the existing Raytheon Campus facilities and operations. On an overall basis, the maximum development potential within the 142.28 acre campus is based upon a floor area ratio (FAR) of 0.60, resulting in a maximum development intensity of 3,718,889 net square feet. Development of individual parcels may exceed 0.60 FAR as noted in the sections below.

In order to allow for maximum flexibility within the Specific Plan area, a Mixed Use concept is utilized, with mechanisms in the Specific Plan’s Development Regulation to allow for transfers between land use types and planning areas, subject to the following requirements:

1. The overall FAR of the Campus cannot exceed 0.60 based on the gross acreage of the site, resulting in a maximum development intensity of 3,718,889 net square feet of building area;

2. Land uses conform to allowable uses as outlined in the Permitted Use Table in the Development Standards section of this Specific Plan; and

3. The total number of traffic trips cannot exceed the trip ceiling established for the Project. The trip ceiling for trip generation of new development within the Project area is:

   a. 631 PM peak hour inbound trips and 2,489 PM peak hour outbound trips, for a total of 3,120 PM peak hour trips as outlined in the trip budget mechanism for the Project (refer to Appendix A).
   b. 2,634 AM peak hour inbound trips and 408 outbound AM peak hour trips, for a total of 3,042 AM peak hour trips as outlined in the trip budget mechanism for the Project (refer to Appendix A).
   c. 26,585 daily trips as outlined in the trip budget mechanism for the Project (refer to Appendix A).
Floor Area. For purposes of this Specific Plan, application of a floor area ratio results in net building square footage. Gross floor area is the sum of the net floor area plus an additional twelve percent (12%) of net floor area. The purpose of evaluating individual buildings proposed within the Specific Plan area net floor area is defined in section VI.B.5.c of this Specific Plan.

B. LAND USE PLAN

The El Segundo South Campus Specific Plan is based upon the following land uses (refer to Exhibit 5, Land Use Plan):

1. Commercial/Office Mixed Use (CMU)

The Commercial/Office Mixed Use (CMU) land use designation is located on parcels fronting onto El Segundo Boulevard, consisting of lots 2, 3, 4, 14, 15, and 16, and totaling approximately 24 acres. The CMU area allows for a wide range of office and commercial uses consistent with the existing and planned Campus. However this area’s frontage on El Segundo Boulevard is most appropriate for commercial land uses such as office, retail, restaurants, and fitness centers which require more visibility and the potential to attract users from outside the Raytheon Campus.

The specific uses are limited in this land use category as shown in the Specific Plan’s development regulations in order to provide an aesthetically pleasing frontage to the Campus along this high visibility corridor.

Anticipated floor area ratios along this frontage range from 0.25-1.81. Table III-1 shows one potential scenario, based upon the conceptual site plan shown in Exhibit 6, Conceptual Site Plan.

2. Office/Industrial Mixed Use (O/I MU)

The Office/Industrial Mixed Use (O/I MU) land use designation is comprised of the balance of the development areas of the site, including the existing Raytheon Campus buildings. This consists of lots 1, 5, 6, 7, 8, 9, 10, 12, 13, 17 and 18 and totals approximately 86.62 acres. This designation includes a full range of commercial, office, warehousing, and light industrial land uses, allowing for new light industrial/R&D, office, and commercial uses consistent with the existing Campus. This range of uses would facilitate an expansion of the existing Campus or the sale of parcels for development by others.

Anticipated floor area ratios range from 0.22-2.2. Table III-1 shows one potential scenario, based upon the conceptual site plan shown in Exhibit 6, Conceptual Site Plan.

The existing Raytheon Campus facility is located in the central portion of the Office/Industrial Mixed Use area. This facility may continue to be fenced and gated to secure its perimeter.
3. Recreation/Open Space (REC/OS)

The Recreation/Open Space category includes the Project’s private recreation facility, identified as Lot 11 on Exhibit 6, as well as several small remnant and potential right-of-way parcels along the properties eastern (Lots 20, 22, 23, and 24) and western (Lot 26) edge, as shown on Exhibits 6 and 7).

The Specific Plan recreation facility includes 7.54 acres of private outdoor recreational facilities for Raytheon employees. A field house building including showers, lockers and restrooms would be provided as a required facility but is not counted as part of the Project’s FAR and square footage cap.

The recreation facilities provided on site must include at least three of the following:

- Fields for baseball, soccer and/or other team sports
- Tennis courts
- Basketball courts
- Handball courts
- Volleyball courts

Table III-1, Land Use Summary, shows the anticipated scenario for the Project’s land use mix.

<table>
<thead>
<tr>
<th>Table III-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Use Summary</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Building Area (Net) (square feet)</th>
<th>Building Area (Gross) (square feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office</td>
<td>1,565,000</td>
<td>1,752,800</td>
</tr>
<tr>
<td>Warehouse/Storage</td>
<td>82,000</td>
<td>91,840</td>
</tr>
<tr>
<td>Light Industrial</td>
<td>150,000</td>
<td>168,000</td>
</tr>
<tr>
<td>Commercial</td>
<td>133,000</td>
<td>148,960</td>
</tr>
<tr>
<td><strong>Subtotal New Development</strong></td>
<td><strong>1,930,000</strong></td>
<td><strong>2,161,600</strong></td>
</tr>
<tr>
<td>Existing Campus Uses¹</td>
<td>1,788,889</td>
<td>2,069,947</td>
</tr>
<tr>
<td>Total Campus Development</td>
<td>3,718,889</td>
<td>4,231,547</td>
</tr>
</tbody>
</table>

¹ Buildings scheduled for demolition are E-20, E-21, E-23, and E-24 (refer to Exhibit 4); already excluded from Existing Campus Uses.
Table III-2, *Land Use – Project Development Scenario*, show a potential implementation of the uses and standards of this Specific Plan based upon the vesting map and the Conceptual Site Plan shown in Exhibit 6, *Site Plan*. Ultimate land use would be determined at the time of site plan submittal for a specific parcel, subject to the development standards and permitted uses outlined in Section VI, *Development Standards*, and analysis of compliance with overall FAR and trip budget limitations.

**Table III-2**  
Land Use – Project Development Scenario

| Parcel | Use                        | Acreage | Building Area (Net) | Building Area (Gross)
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Commercial/Office Mixed Use (CMU)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Office</td>
<td>4.87</td>
<td>380,040</td>
<td>425,644.80</td>
</tr>
<tr>
<td>3</td>
<td>Office</td>
<td>2.57</td>
<td>191,540</td>
<td>214,524.80</td>
</tr>
<tr>
<td>4</td>
<td>Office</td>
<td>5.20</td>
<td>191,540</td>
<td>214,524.80</td>
</tr>
<tr>
<td>14</td>
<td>Commercial</td>
<td>4.01</td>
<td>50,000</td>
<td>56,000</td>
</tr>
<tr>
<td>15</td>
<td>Commercial</td>
<td>3.99</td>
<td>46,000</td>
<td>51,520</td>
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<td>16</td>
<td>Commercial</td>
<td>3.36</td>
<td>37,000</td>
<td>41,440</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td><strong>24.00</strong></td>
<td><strong>896,120</strong></td>
<td><strong>1,003,554.4</strong></td>
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<tr>
<td><strong>Office/Industrial Mixed Use (O/I MU)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Office</td>
<td>10.02</td>
<td>191,540</td>
<td>214,524.8</td>
</tr>
<tr>
<td>5</td>
<td>Existing</td>
<td>7.17</td>
<td>67,465</td>
<td>82,412</td>
</tr>
<tr>
<td>6</td>
<td>Warehouse Light Ind.</td>
<td>4.53</td>
<td>82,000</td>
<td>91,840</td>
</tr>
<tr>
<td>7</td>
<td>Office</td>
<td>4.75</td>
<td>163,840</td>
<td>183,500.8</td>
</tr>
<tr>
<td>8</td>
<td>Office</td>
<td>5.81</td>
<td>163,840</td>
<td>183,500.8</td>
</tr>
<tr>
<td>9</td>
<td>Office</td>
<td>1.68</td>
<td>160,840</td>
<td>180,140.8</td>
</tr>
<tr>
<td>10</td>
<td>Parking structure</td>
<td>1.49</td>
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<td>--</td>
</tr>
<tr>
<td>12</td>
<td>Existing</td>
<td>7.78</td>
<td>53,934</td>
<td>82,798</td>
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<tr>
<td>13</td>
<td>Office</td>
<td>2.71</td>
<td>121,820</td>
<td>136,438.4</td>
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<tr>
<td>17</td>
<td>Existing</td>
<td>22.32</td>
<td>996,871</td>
<td>1,121,048</td>
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<tr>
<td>18</td>
<td>Existing</td>
<td>18.36</td>
<td>670,619</td>
<td>783,689</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td><strong>86.62</strong></td>
<td><strong>2,822,769</strong></td>
<td><strong>3,227,892.6</strong></td>
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<tr>
<td><strong>TOTAL DEV</strong></td>
<td></td>
<td><strong>110.62</strong></td>
<td><strong>3,718,889</strong></td>
<td><strong>4,231,547</strong></td>
</tr>
<tr>
<td>19-26</td>
<td>Roads/OS</td>
<td>18.07</td>
<td>--</td>
<td>--</td>
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<tr>
<td>11</td>
<td>Recreation</td>
<td>7.54</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>El Segundo Blvd. New Dedication</td>
<td>Road and Bike Path</td>
<td>0.83</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>El Segundo Blvd. Existing Dedication</td>
<td>Road</td>
<td>5.22</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>142.28</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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2 Gross building area of new construction is assumed to be 1.12% of net area. Twelve (12) percent of gross area is excluded, accounting for elevators, stairwells, and other non-occupied space.

3 FAR calculation yields a net building area.

4 Total allowable intensity would be capped at a potential maximum of 3,718,889 net square feet.
**Trip Ceiling.** A Trip Budget tracking system is a mechanism for managing the forecast vehicular trips generated by the land use mix identified in Tables III-1 and III-2. The Trip Budget is defined in Appendix “A” of this Specific Plan and is outlined in Table III-3 below.

The purpose of the system is to ensure that development can be accommodated within the planned roadway capacity of the on-site and off-site roadway systems and to allow maximum flexibility of land uses in keeping with the market and ongoing Raytheon facilities requirements.

The basis for the trip budget is the specification of a mix of uses within the Specific Plan area. The budget establishes a baseline capacity of trips. Using assumed traffic generation rates for the uses anticipated within the Project, the number of trips that would be generated at build-out of the plan was estimated.

**Table III-3**  
Project Trip Ceiling  
for trips associated with new development  
within the ESSCSF area.

<table>
<thead>
<tr>
<th>AM Peak Hour Trips</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>In</td>
<td>Out</td>
<td>Total</td>
</tr>
<tr>
<td>2634</td>
<td>408</td>
<td>3042</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PM Peak Hour Trips</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>In</td>
<td>Out</td>
<td>Total</td>
</tr>
<tr>
<td>631</td>
<td>2489</td>
<td>3120</td>
</tr>
</tbody>
</table>

**Total Daily Trips**

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>26,585</td>
</tr>
</tbody>
</table>

If a different mix of land uses is proposed at the time of Site Plan review, a trip budget table and analysis would be provided as part of the Project submittal to allow for:

- Confirmation that the proposed mix of uses falls within the maximum trip allowance; and
- City tracking of the land use mix within the Project.
EXHIBIT 5
LAND USE PLAN
EXHIBIT 6
CONCEPTUAL SITE PLAN
EXHIBIT 7
VESTING TENTATIVE MAP #71551
C. PHASING

Development starts and occupancy rates are not mandated by any phasing schedule. Development will be dictated by market demand and phased accordingly. The conceptual phasing schedule identified below is a best estimate for planning purposes only.

<table>
<thead>
<tr>
<th>Land Use</th>
<th>2013</th>
<th>Phase I Opening 2015</th>
<th>Phase II 2016 - 2022</th>
<th>Buildout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>-</td>
<td>0</td>
<td>1,752,800</td>
<td>1,752,800</td>
</tr>
<tr>
<td>Warehouse</td>
<td>-</td>
<td>0</td>
<td>91,840</td>
<td>91,840</td>
</tr>
<tr>
<td>Industrial</td>
<td>-</td>
<td>0</td>
<td>168,000</td>
<td>168,000</td>
</tr>
<tr>
<td>Retail/Restaurant</td>
<td>-</td>
<td>92,960</td>
<td>56,000</td>
<td>148,960</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>-</td>
<td>92,960</td>
<td>2,068,640</td>
<td>2,161,600</td>
</tr>
</tbody>
</table>

D. CIRCULATION PLAN

Regionally, the Campus is accessible from the San Diego freeway (405), Century Freeway (105), the Metro Green Line, and the major arterials of El Segundo Boulevard and Sepulveda Boulevard. The Campus is directly accessible from El Segundo Boulevard at the intersections of Continental Boulevard and Nash Street and is accessible off of Sepulveda Boulevard via Hughes Way. There is a third access point located adjacent to the El Segundo Boulevard Metro Green Line station. However, that access is gated. The internal circulation system of the Campus is currently private and access is controlled by fencing, guard stations, and gates.

The development of the Specific Plan must provide for an efficient, internal roadway system that will facilitate on-site circulation and parking. Access will be provided for emergency vehicles and development within the Campus will provide infrastructure and facilitate access for various modes of travel including automobiles, transit, bicycles, and pedestrian. Connectivity in this part of the City will also be provided in accordance with the City's General Plan. Pedestrian and handicap access must be provided between buildings, to key elements in the surrounding area, and to the nearby MTA Green Line station.

VEHICULAR CIRCULATION

**El Segundo Boulevard.** El Segundo Boulevard is an existing public arterial that abuts the property on its northern edge. An off-street “Class I” bicycle path will be designed and constructed consistent with the requirements of the South Bay Bicycle Master Plan. The bicycle path may diverge from running parallel to El Segundo Boulevard near the overhead green line overhead alignment and enter the El Segundo Green Line Station south of any obstructions created by the supports for the Green Line’s elevated track.
A limited number of additional curb cuts may be allowed along El Segundo Boulevard to provide direct access to the Campus, subject to the approval of the Director of Planning and Building Safety and Director of Public Works as part of site plan review.

**Hughes Way/Nash Street Extension.** With the development of the Specific Plan, Hughes Way will be connected with Nash Street through the south and eastern portions of the Campus (Parcel 19). The street will be dedicated to the City for public right-of-way purposes as a Secondary Arterial with a right-of-way width of 100 feet, including a 22-foot wide raised landscaped median. Hughes Way extension will include a 6-foot wide on-street “Class II” bicycle lane consistent with the South Bay Bicycle Plan. This street must be completed before a certificate of occupancy is issued for any use which would cause the new development trip cap of 89 a.m. peak hour, 225 p.m. hour peak trips or 3775 daily trips to be exceeded.

The circulation pattern provides for future connection from the Nash Street extension to Coral Circle (an easement through Parcels 20 and 22) and provides for additional parking for the Coral Circle businesses (Parcels 20 and 22). 20-year irrevocable offers of dedication to Parcels 20 and 22 must be offered and may be accepted by the City at such time as the City acquires access rights from the affected businesses along Coral Circle and enters into a contract for the construction of the connecting street.

**Continental Boulevard.** The Circulation Plan calls for the extension of Continental Boulevard, along the southwestern boundary lines, to its connection with Hughes Way. This street will initially be private and gate controlled until such time as the first parcel taking access from the road is either sold or leased for use by non-Raytheon parties. At that time a portion of the road (Parcel 21 or Parcel 25 or both) will be opened to public access either through dedication to the City or recordation of a public access easement. Continental Boulevard is designed as a Collector Street with a right-of-way width of 80 feet, and a 14-foot raised median.

At the point where the future Continental Boulevard turns from an east-west direction to a north-south direction, a parcel has been created (Parcel 26) which will allow access to the adjacent golf course. Raytheon will provide a 20-year irrevocable offer of dedication for this parcel. This dedication may be accepted by the City at such time the City permits circulation through the adjacent golf course and Continental Boulevard is made accessible to the public.

Until such time as a street is accepted by the City, the street may be fenced, guarded or gated. However, perimeter security will be relocated so as to provide unfettered access to all public streets.

**NON-VEHICULAR CIRCULATION**

Three non-vehicular circulation components are included within the Campus:

* A 6-foot wide Class I bicycle path (4-foot one way path with 2-foot shoulder) is required to be installed in a dedicated public easement adjacent to El Segundo Boulevard (consistent with the South Bay Bicycle Plan). This path is illustrated in the Landscape portion of the Specific Plan Design Guidelines.
- A 6-foot wide Class II, on-street bicycle lane is included within the right-of-way of the Hughes/Nash Street extension on each side of the street.

- A pedestrian access easement across one or a combination of parcels 13, 14 and/or parcel 24 of Vesting Map 71551 is required to allow direct pedestrian access to the Green Line Station.

Improved bicycle parking facilities will be located at either the Metro Green-line station or on-site, on land reserved for secured bicycle parking in close proximity to the Green-line station. This facility, at a minimum, will include fully enclosed, secured parking for bicycles. The station could also include other amenities for cyclists, such as: staffing, repair facilities, sales of bicycle related materials, changing and or shower facilities, bicycle rental and/or bicycle sharing facilities.

E. GRADING CONCEPT

Site grading will require cut and fill to create building pads. The grading is expected to be balanced on-site. Final grading plans will be approved by the City Engineer before the City issues a grading permit.
IV. EXISTING UTILITIES AND INFRASTRUCTURE

The following is a summary of existing and proposed public infrastructure for development of the site. Some private infrastructure may be converted to public infrastructure where appropriate and if the City of El Segundo approves. All infrastructure will be constructed in accordance with the standards of the governing agency.

A. WATER SERVICE

EXISTING CONDITION

Water utility service is provided by the City of El Segundo and is currently available within the Campus. Water is purchased through West Basin Municipal Water District which is a member of The Metropolitan Water District of Southern California.

The current points of connection to the public water system are near the midpoint of the northern and midpoint of the eastern property line. Connection is made with 12-inch service laterals to an existing 27-inch diameter City of El Segundo water main line.

Water for fire suppression is provided by on-site building sprinklers and fire hydrant(s) and from off-site fire hydrants located on El Segundo Boulevard.

PROPOSED CONDITION

The existing and future water service must be provided through a future public line or a private line with private easement serving each lot. Location of lines in public streets is the preferred condition; where a public main line serving multiple lots is not within a public street, an easement must be granted to the City for access and maintenance. Points of connection will be based on the City of El Segundo’s approval and may include connections to existing 27-inch water main line in El Segundo Boulevard, an existing 10-inch public water service in Hughes Way, or an existing 27-inch public water service which lies within an existing City easement along the east side of the site. Future water service points of connection will need to be provided to existing Raytheon buildings to remaining and future buildings. A Conceptual Water Utility Plan has been developed for the Specific Plan Area (refer to Exhibit 8, Water Plan).

Fire flows for future construction will be based on County of Los Angeles Fire Department Land Development Unit standards, requiring up to 5,000 gallons per minute (gpm) at 20 psi residual pressure for up to a five-hour duration. Final fire flows will be based on specific building design details.
EXHIBIT 8
CONCEPTUAL WATER PLAN
Source: Psomas
B. RECLAIMED WATER

EXISTING CONDITION

Reclaimed water utility service is provided by the West Basin Municipal Water District from a treatment plant just west of the Campus and is already being used for landscaping the Campus. A current point of connection to the reclaimed water system for irrigation of landscaping along El Segundo Boulevard is along El Segundo Boulevard at Continental Boulevard. Connection is made with a 6-inch service lateral to an existing 42-inch diameter West Basin reclaimed water main line.

A sewer study was prepared by Psomas for the Specific Plan, dated September 2012. Please refer to the full study for technical details on potential reclaimed water usage.

PROPOSED CONDITION

The existing and future reclaimed water service must be provided through a future public main line or a private line with private easement serving each lot. Location of lines in public streets is the preferred condition; where a public main line serving multiple lots is not within a public street, an easement will be granted to the City for access and maintenance. Points of connection will be based on West Basin Municipal Water District’s and the City of El Segundo’s input and may include connections to an existing 8-inch reclaimed water service in Hughes Way and/or to an existing 42-inch reclaimed water line in El Segundo Boulevard. New service points of connection will need to be provided to the new parcels within the Campus. A Conceptual Reclaimed Water Utility Plan has been developed for the Specific Plan area (refer to Exhibit 9, Reclaimed Water Plan).

C. SEWER SERVICE

EXISTING CONDITION

Sewer utility service is provided by the City of El Segundo and County Sanitation District of Los Angeles County and is currently available within the Campus. The Raytheon Campus presently includes an 18-inch sewer line which connects to an existing 21-inch trunk sewer near the southeast corner of the site. This trunk sewer continues northeasterly to Douglas Street, turns southerly along Douglas Street to Alaska Avenue, runs easterly in Alaska Avenue to Hawaii Street and runs southeasterly in Hawaii Street to Aviation Boulevard where it increases to a 24-inch trunk, runs southerly for a short distance and then connects to the Los Angeles County Sanitation District trunk in Aviation. From research of existing sewer plans, there are no connections to this trunk sewer through this entire alignment as smaller, parallel lines collect all the sewage from the parcels along this alignment. An existing 10-inch and 15-inch sewer line is also present in El Segundo Boulevard generally east of Nash Street.
PROPOSED CONDITION

The existing and future sewer service must be provided through a future public sewer line or a private line with private easement serving each lot. Location of lines in public streets is the preferred condition; where a public main line serving multiple lots is not within a public street, an easement must be granted to the City for access and maintenance. Points of connection will be based on the City’s approval and may include connections to an existing 21-inch sewer located at the southeast corner of the site and/or the existing sewer in El Segundo Boulevard. To serve the new Project, approximately 8,000 linear feet of new public sewer is anticipated to be constructed within the Project boundary. A conceptual sewer plan has been developed for the Specific Plan area (refer to Exhibit 10, Sewer Plan).

D. DRAINAGE

EXISTING CONDITION

A drainage study was prepared by Psomas for the Specific Plan, dated September 2012. Please refer to the full study for technical details.

The area drains in a northwest to southeast direction. Current points of connection to the City’s public drainage system exist at multiple locations along the eastern and southern Raytheon property lines. The City’s public drainage system consists of variable diameter (96 to 108 inches) reinforced concrete pipe (RCP) storm drain. The public main lines discharge into an existing City of El Segundo retention and infiltration basin just south of the Raytheon site. Existing storm water quality currently goes untreated on-site. However, downstream of the Project site runoff drains to the City of El Segundo retention and infiltration basin where it is captured and infiltrated.

Federal Emergency Management Agency (FEMA) map #06037C1770F shows this Project site is located within Zone X, which is described to be an area determined to be outside of the 0.2% annual chance floodplain. There are no Special Flood Hazards on-site.

PROPOSED CONDITION

Relatively minor off-site flows from El Segundo Boulevard and the property to the south will continue unobstructed to combine with on-site flows. The Project area will continue to drain in its existing northwest to southeast direction. Reconfiguration of site roadways and the replacement of existing buildings and surface parking lots with new buildings and parking lots/structures will result in changes to drainage patterns and amounts of impervious surfaces. However, proposed drainage sub-areas will closely match existing sub-areas in area, and potential increases in surface runoff will be mitigated by Project design features. The average imperviousness of the site is expected to decrease from 79.5% to 70.0%.
EXHIBIT 10
CONCEPTUAL SEWER PLAN
Source: Psomas
As each phase of the proposed Project is implemented, flows into the existing public storm drain system will not increase. If the proposed Project results in a change in drainage pattern, an increase in impervious area, or higher rates of flow, storm water detention will be part of the design to avoid negative downstream impacts. Sub-drainage areas will continue to flow to the City of El Segundo storm drain along the eastern and southern edge of the Project boundary.

The total proposed tributary area to be studied is less than 1% larger than the existing tributary area since portions of the Project area that formerly drained off-site will be redirected and managed on-site. There will be no net increase in discharge of storm water from the site. The total proposed tributary area is approximately 134.4 acres.

New storm drains will be required to serve the site redesign. To serve the proposed Project, approximately 7,000 linear feet of new on-site storm drain lines are expected be constructed within the Project boundary. The maximum pipe diameter is not expected to exceed 54 inches. On-site detention is not expected to be required (refer to Exhibit 11, Drainage Plan).

**Storm Water Quality**

Existing storm water quality currently goes untreated on-site. The project site discharges into an existing City of El Segundo retention and infiltration basin just south of the Raytheon site. No runoff leaves the City of El Segundo retention and infiltration basin. However, the project site lies within the Dominguez Channel watershed. The Dominguez Channel ultimately empties into the consolidated slip of the Los Angeles Harbor.

To the maximum extent practical, storm water quality treatment will be provided with infiltration. The treatment methods are expected to include infiltration wells, infiltration basins, high-efficiency planter boxes, and surface planting areas. Drainage must comply with all applicable laws and regulations, including without limitation, the City’s National Pollution Discharge Elimination System (NPDES) Permit.

**E. GAS**

**EXISTING CONDITION**

Natural gas service is provided by Southern California Gas Company and is currently available within the Campus.

**PROPOSED CONDITION**

The existing and future natural gas service must be provided through a future public main line or a private line with private easement serving each lot.
Note: Storm Drain may be private or public. If public there will be an easement to the City.

EXHIBIT 11
CONCEPTUAL DRAINAGE PLAN
Source: Psomas
Location of lines in public streets is the preferred condition; where a public main line serving multiple lots is not within a public street, an easement will be granted for access and maintenance. Points of connection will be based on Southern California Gas Company’s approval and may include connections to existing 12-inch and 20-inch high pressure gas lines within El Segundo Boulevard and/or an existing 4-inch service line along the easterly property line. A conceptual plan has been developed for the Specific Plan area (refer to Exhibit 12, Electric, Gas and Telecommunication).

F. ELECTRIC

EXISTING CONDITION

Electric power is provided by Southern California Edison to the Campus through underground utilities.

PROPOSED CONDITION

Location of lines in public streets is the preferred condition; where a public main line serving multiple lots is not within a public street right-of-way, an easement will be granted for access and maintenance. Points of connection will be based on Edison’s approval. A future substation location, reserved by an easement adequate in size for the placement of a SCE substation, is identified on Parcel 5 (refer to Vesting Tentative Map No. 71551). A conceptual plan has been developed for the Specific Plan area (refer to Exhibit 12, Electric, Gas and Telecommunication).

G. TELECOMMUNICATIONS UTILITIES

EXISTING CONDITION

Cable and telecommunication service is provided by a variety of companies and is currently available within the Campus. These companies include AT&T, Level 3, MCI (Verizon), Quest, Time Warner, and XO Communications.

PROPOSED CONDITION

Location of lines in public streets or their rights-of-way is the preferred condition; where a public line serving multiple lots is not within a public street or its right-of-way, an easement will be granted for access and maintenance. Points of connection will be based on the requirements of local providers. A conceptual plan has been developed for the Specific Plan area (refer to Exhibit 12, Electric, Gas and Telecommunication).
EXHIBIT 12
ELECTRIC, GAS AND TELECOMMUNICATION CONCEPTUAL PLAN
Source: Psomas
H. SOLID WASTE DISPOSAL

EXISTING CONDITION

Solid waste disposal is provided to commercial and industrial users by a variety of private haulers.

FUTURE CONDITION

Development within the Campus would contract with a provider. Landfill capacity is adequate for assumed population and commercial growth within Los Angeles County. Solid waste facilities within the Specific Plan area will comply with all ESMC requirements pertaining to building, fire, zoning codes (e.g., adequate trash enclosures and screening).

I. FIRE PROTECTION

EXISTING CONDITION

The Campus is less than one mile from Fire Station 2, located at Mariposa Avenue and Douglas Street. The provision of water for fire suppression is provided by on-site building sprinklers and fire hydrants and from off-site fire hydrants located on El Segundo Boulevard.

FUTURE CONDITION

Future development will include new public fire hydrants within the future public street connecting Hughes Way and Nash Street. Buildings will be sprinklered as required by the ESMC. Development will be required to pay fire impact fees to off-set the additional demand for municipal fire protection services as a result of the new development.

J. POLICE SERVICES

EXISTING CONDITION

Police services are provided by the El Segundo Police Department which is located at 348 Main Street.

FUTURE CONDITION

Development will be required to pay police impact fees to off-set the additional demand for municipal police services as a result of the new development.
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V. DESIGN GUIDELINES

These design guidelines are intended as “guidelines” instead of “development regulations,” Consequently, strict compliance is not required. To promote the quality of design planned for this Project, the design guidelines given in this document establish criteria that enhance the coordination, organization, function and identity of the site, while maintaining a compatible relationship with the surrounding development of the El Segundo South Campus.

A. DESIGN OBJECTIVES AND INTENT

Design Guidelines for the South Campus Specific Plan will promote and reinforce the City’s commitment to high quality development. The objectives of these guidelines are to:

- Provide for high-quality, large scale commercial/industrial development within a cohesive campus setting.
- Promote orderly and predictable development.
- Encourage individual creativity and innovative solutions by allowing flexibility in how a particular guideline is met as long as the intent of the guideline is achieved.
- Ensure functional pedestrian, bicycle and motor vehicle circulation within the Project and convenient pedestrian and bicycle linkages to and from adjacent residential, commercial, industrial, and school areas.

1. Site Planning

   a. The arrangement of new buildings, parking and circulation areas should recognize the particular characteristics of the site and should create an identity as a cohesive campus.

   b. Site development should utilize variations on building orientation and landscaping adjacent to the public streets so that a monolithic “wall” of building faces is not created.

   c. The design and location of accessory buildings (e.g., security kiosks, maintenance buildings, trash and recycling enclosures, and outdoor mechanical equipment enclosures) should be incorporated into and be compatible with the overall design of the Project and the main buildings on the site.
d. Appropriate linkages between internal Project components and buildings, as well as between the Project and the surrounding development should be incorporated, including pedestrian walkways, and plaza areas.

e. Buildings should be arranged to create opportunities for open space amenities (e.g., plazas, courtyards, outdoor eating areas, public art, etc.).

2. Access and Parking

a. The use of common (shared) access points and driveways is encouraged; placement of vehicle access points close to building entries should be avoided to minimize pedestrian and vehicular conflicts.

b. Entry driveway areas should be clearly marked by special features, (e.g., enhanced paving, prominent landscape features, low-height decorative walls, and well-designed monument-type signs).

c. Access to each building should be clearly visible to pedestrians and motorists through the use of signage, color, and/or design elements.

d. Parking lots adjacent to and visible from public streets should be appropriately screened to minimize undesirable visual impacts.

e. Parking lots should not be a dominant visual element on the site from El Segundo Boulevard or the Nash Street extension.

f. Surface parking areas should be enhanced and visually broken up through the use of appropriate trees and landscape improvements.

g. Surface parking areas should be divided into smaller multiple lots and provided with canopy trees spaced appropriately throughout the parking area to reduce the effects of heat gain.

h. Parking lot design is encouraged to include water quality storm water facilities consistent with City standards and a Water Quality Management Plan prepared for each phase.
3. Architecture/Orientation/Massing

a. The massing, scale and architectural style should consider compatibility with the surrounding character and existing buildings to reflect a cohesive campus character.

b. The orientation of the newly constructed buildings should facilitate and encourage pedestrian activity and convey a visual link to the Project’s internal road system.

c. The mass and scale of new buildings should be compatible with the existing and adjacent structures and with each other. This can be accomplished by transitioning from the height of adjacent buildings to the tallest elements of the new building, stepping back the upper portions of taller buildings, and incorporating human scale elements, such as pedestrian scaled doors, windows, and building materials on the ground floor.

d. Buildings should be divided into distinct massing elements and should be articulated with architectural elements and details. Changes in height, horizontal plane, materials, patterns and colors should be used to reduce building scale and mass.

e. Primary building entries should be easily identified through the use of prominent architectural elements, signage, landscaping, decorative hardscape, lighting, canopies, roof form, architectural projections, columns, vertical and/or horizontal elements, and other design features that help emphasize a building’s entry.

f. Building elevations, whether front, side, or rear, that are visible from public rights-of-way should be architecturally detailed to incorporate quality materials and architectural features that reflect the theme of surrounding structures and facades. Buildings facing El Segundo Boulevard should include enhanced and articulated facades. Building entrances should be readily identifiable. The use of recesses, projections, columns, and other design elements to articulate entrances is encouraged.

g. Facades should be ‘divided’ by vertical and horizontal variations in wall planes, building projections, door and window bays, and similar elements. Building articulation should be present on the side and rear walls of the building.
h. Roofs should be designed as an integral component of building form, mass, and facade. Building form should be enhanced by varying and offset roof planes, eave heights, and rooflines.

i. Green roofs and rooftop gardens are allowed to add landscaping, decrease the heat island effect of large expanses of flat roofs, retain and filter storm water run-off, and to reduce energy demand for heating and cooling buildings. Green roofs are encouraged, but not required.

j. The exterior surfaces of buildings for the ground floor must be protected with anti-graffiti coating where appropriate.

4. Color and Materials

a. Colors and materials should be consistent and complementary throughout the Project area.

b. Exterior materials and architectural details should complement each other and should be stylistically consistent.

c. Building materials must be durable and resistant to damage, defacing, and general wear and tear. Acceptable building materials may include concrete, stone masonry, metal, stucco, glass and/or other contemporary composites.

d. Building materials that support sustainability through the use of environmentally sound building materials and local resources (e.g., locally available, contain high recycled-content, are reused, come from renewable sources, and that contain low volatile organic compound (VOC) levels) is highly encouraged.

5. Screening and Mechanical Equipment

a. All screening devices must be compatible with the architecture, materials and colors of the building.

b. Loading docks, bays and parking spaces, delivery service areas, outdoor storage areas, stand-alone mechanical equipment facilities, should be located and designed to minimize their visibility, circulation conflicts and adverse noise impacts. These facilities must be oriented so that they do not face any public or private rights-of-way. Sound attenuation walls must be used where appropriate to reduce noise where required by code or the Project’s environmental analysis.
c. Utility and mechanical equipment must be screened from view of public streets and nearby buildings on all sides with landscaping and/or architectural elements.

d. Rooftop mounted equipment visible from the surrounding area, adjacent buildings, and any public or private rights-of-way must be screened from public view and equipment should be painted to match the roof color when equipment is visible.

e. Trash and recycling receptacles areas must be completely screened from public view from public and private rights-of-way with a combination of solid walls, wood, and landscaping.

f. Ground mounted enclosures must be protected with anti-graffiti coating.

6. Parking Structures

a. Parking garages should be designed to help reduce the mass and scale of the garage and to ensure their compatibility with surrounding uses.

b. Parking garages should be designed to conceal the view of vehicles in the garage through a combination of screen walls and plantings while providing adequate visibility for security purposes.

c. The exterior elevations of parking structures should be designed to avoid a monotonous, monolithic appearance. This can be accomplished through a menu of options as follows:

- Minimize horizontal and vertical banding by balancing both horizontal and vertical elements.

- Design ‘green screens’ to provide visual relief.

- Use simple, clean geometric forms, and coordinated massing.

- Size openings in the parking garage to resemble large windows as in an office building.

- Use masonry materials that are predominantly light in color, but avoid unpainted concrete. Use of accent materials is encouraged.

- Avoid a sloping ramp appearance by providing level and uniform spandrels.
• Visually define and differentiate between pedestrian and vehicular entrances through appropriate architectural detailing.

d. Stairs and elevators should be located adjacent to a street on the exterior of the structure where lobbies can be exposed to outside view. Safe pedestrian street crossings should be taken into consideration.

e. The use of security cameras is encouraged and may be required by the Police Department as part of site plan approval.

f. Lighting levels should be equally distributed to provide uniform illumination over all parking areas. Photometric analysis will be required as part of site plan/architectural review.

g. Light sources should be shielded so that the source of the illumination is not seen from outside the structure.

h. The ground floor level of any parking structure must be protected with anti-graffiti coating.

7. Landscaping

A Landscape Master Plan for the Campus must be provided to the City at or before first site plan review submittal to provide for a unified concept for the Campus.

Streetscape concepts are provided for the three hierarchies of streets within the project, including the El Segundo Boulevard frontage, Hughes/Nash Street Extension, and Continental (see Exhibits 13-15, Streetscape Concepts). The Master Landscape Concept Plan must be consistent with these concepts and their associated plant palettes.

General

a. Entries into the project should include a consistent entry feature for the Campus as a whole. Entries should be provided in the following locations:

• Hughes Way at El Segundo Boulevard
• Hughes Way/Nash Street at the southern Campus boundary

b. Consistent tree species must be planted at Project entries, consistent with Exhibit 16, Corner Entry Concept.
EL SEGUNDO BOULEVARD

PARKWAY TREE
LAGERSTROEMIA INDICA

CRAPE MYRTLE

SHRUBS
MITOSPORUM TOBIRA 'WHELLER'S DWARF'
WHELLER'S DWARF TOBIRA

DESCRIPTION
EL SEGUNDO BOULEVARD WILL HAVE A NEW CLASS I BIKE TRAIL ALONG THE STREET FRONTAGE. DUE TO THE EXISTING POWER LINES, THE PARKWAY WILL BE PLANTED WITH CRAPE MYRTLES BECAUSE OF ITS SMALL SCALE AND FLOWERING CHARACTERISTICS. WHELLER'S DWARF TOBIRA WILL BE USED IN THE PARKWAY, SO THAT IT CAN BE EASILY MAINTAINED AWAY FROM THE BIKE PATH CLEAR ZONE.

EXHIBIT 13
EL SEGUNDO BOULEVARD STREETSCAPE CONCEPT
**SECONDARY ARTERIAL STREET**

**HUGHES WAY/NASH STREET EXTENSION**

MEDIAN TREE
PLATANUS ACERIFOLIA
LODGEPOLE PINE

PARKWAY TREE
RHUS LANCEA
AFRICAN SUMAC

SHRUBS
LIGUSTRUM JAPONICUM "TEXANUM" TEXAS PRIVET
LIGUSTRUM CORDATUM "CANYON PRINCE" CANYON PRINCE WILD RYE

GROUND COVER
TRACHELOSPERMUM JASMINOIDES STAR JASMINE

DESCRIPTION
THE SECONDARY ARTERIAL STREET (NASH/HUGHES) WILL BE PLANTED WITH LONDON PLANE TREES IN THE MEDIAN TO MATCH THE EXISTING LONDON PLANE TREES FOUND ON SOUTH HUGHES WAY. THIS WILL CREATE A CONTINUOUS AND CONSISTENT LANDSCAPE CHARACTER FOR THE STREET CORRIDOR. THE PARKWAYS WILL BE PLANTED WITH RHUS LANCEA TREES TO PROVIDE SHADE AND A HEDGE OF TEXAS PRIVET SHRUBS WILL BE USED IN THE PARKWAYS TO PROVIDE SCREENING OF THE ADJACENT USES AND CANYON PRINCE WILD RYE WILL BE USED IN THE MEDIAN UNDER THE LONDON PLANE TREES.

**EXHIBIT 14**

HUGHES/NASH EXTENSION STREETSCAPE CONCEPT
COLLECTOR STREET
CONTINENTAL BOULEVARD

18" WIDE DECORATIVE MAINTENANCE WALK
AUSTRALIAN WILLOW TREE
@ 30' O.C.
LITTLE JOHN BOTTLEBRUSH
COAST ROSEMARY
LITTLE JOHN BOTTLEBRUSH

PARKWAY AND MEDIAN TREES
GEUERA PARVIFLORA
AUSTRALIAN WILLOW

SHRUBS
BUXUS MICROPHYLLA JAPONICA
JAPANESE BOXWOOD
CALLISTEMON "LITTLE JOHN"
LITTLE JOHN BOTTLEBRUSH
WESTRINGIA FRUTICOSA "MORNING LIGHT"
COAST ROSEMARY

DESCRIPTION
THE COLLECTOR STREET WILL BE PLANTED WITH AUSTRALIAN WILLOW TREES IN BOTH THE PARKWAYS AND MEDIANS TO PROVIDE SHADE AND INTERESTING TEXTURE TO THE STREETSCAPE. A HEDGE OF JAPANESE BOXWOOD SHRUBS WILL BE USED IN THE PARKWAYS TO PROVIDE SCREENING OF THE ADJACENT USES. LITTLE JOHN BOTTLEBRUSH WILL BE USED IN THE PARKWAYS AND MEDIANS TO PROVIDE FLOWERING COLOR TO THE STREETSCAPE AND COAST ROSEMARY WILL BE USED IN THE MEDIANS TO PROVIDE SHRUBS OF VARYING HEIGHTS.

EXHIBIT 15
CONTINENTAL STREETSCAPE CONCEPT
CORNER ENTRY TREATMENT

DESCRIPTION

The corner entry area will be defined by a 50' radius as measured from intersection of extending the radius lines. The corners will feature date palms to create a bold and visually interesting entry statement. A Texas privet hedge will provide an evergreen backdrop and star jasmine will provide flowers to the entry area.

EXHIBIT 16
CORNER ENTRY CONCEPT
c. All areas not covered by buildings, walkways, driveways, parking spaces, and service areas must be landscaped (with drought tolerant plantings and sustainable hardscapes in accordance with the City’s water conservation requirements).

d. Landscaping should enhance the quality of the Project by framing and softening the appearance of buildings, defining site functions, screening undesirable views and buffering incompatible uses.

e. Landscaping at the perimeter of buildings is encouraged to soften the transition between building and parking lot. Parking lot landscaping must be distributed evenly to provide for consistent design and shading.

f. Landscaped areas should generally incorporate a combination of planting materials utilizing a three tiered system consisting of: 1) trees, 2) shrubs or vines, 3) groundcover/ornamental grasses. Landscaping should be in scale with the adjacent buildings and be of appropriate size at maturity.

g. Placement of landscaping should not interfere with the lighting of the Project area or restrict access to utilities.

h. Landscaping should be utilized to define edges, buffer adjacent properties, screen parking areas and storage areas.

i. Street trees should be spaced appropriately (in adequately sized and landscaped parkway strips or in tree-wells within wider sidewalks or plazas) to emphasize and reinforce the spatial definition between the building, pedestrian environment and the street.

j. In order to reduce the heat-island effect, space parking lot trees to achieve shading at ratios required by the development regulations of this Specific Plan. Trees must adequately shade parking lots and provide sufficient area for water quality requirements.

k. Textured paving materials should be used in pedestrian areas such as pedestrian courtyards and plaza areas for safety and to provide visual interest.
1. Paving materials should include pervious hardscape materials to facilitate water treatment and reduce runoff.

m. Bio-retention areas can be used to detain/percolate run-off in planted swales, raised open-bottomed planters, etc.

n. Site furnishings including, but not limited to, fixed and moveable seating, trash and recycling receptacles, bike racks, and pedestrian scaled lighting should be of durable and sustainable materials.

o. Design and selection of site furniture should include considerations for the security, safety, comfort and convenience of the user.

p. A unified site furniture “look” is encouraged. The color and appearance of site furniture products should be selected to complement other design elements.

8. Walls and Fences

a. Wall and fence design should complement the Project’s architecture. Landscaping may be used to soften the appearance of the wall surface.

b. Wall and fencing materials must be made of a durable material. Wall and fencing materials may consist of wrought iron, tubular steel, stone, stucco, or brick. Solid walls should incorporate pilasters with decorative caps and offsets, consistent with the overall architecture.

c. Landscaping should be used to soften the appearance of the wall surfaces and deter graffiti.

d. Security fencing must be of high quality design. Razor wire is not permitted. Chain link fencing is not permitted in any areas that are visible from any public or private rights-of-way.

e. Walls and fences must be protected with anti-graffiti coating.
9. Lighting Design
   a. The type and location of parking area and building lighting must prevent
direct glare onto adjacent properties.
   b. Pedestrian scale lighting should be present at all entries, plazas, courtyards,
parking lots, pedestrian ways, and other areas where nighttime pedestrian
activity is expected.
   c. Lighting design of fixtures and their structural support should be
architecturally compatible with the architecture of the Project.
   d. When appropriate, wall-mounted lighting may be incorporated. Wall-
mounted lights should be compatible with the building’s architectural style.

10. Signage
   a. A Master Sign Program must be prepared for the South Campus Specific
Plan at or before the first site plan review submittal. Unless specifically
modified by this Specific Plan, all signage must comply with ESMC
requirements.
   b. Billboards, pole signs, and signs incorporating flashing or blinking lights
are not permitted within this Specific Plan area.
   c. The character of the signage, including the location, size, height, design and
lighting must be in keeping with the architectural character and monument
style of the overall Project.
   d. Signs should make a positive contribution to the desired character of the
Project and overall streetscape and provide for clear identification and
wayfinding.
   e. Vehicle, bicycle and pedestrian circulation throughout the Project site, to
parking and various destinations should be enhanced through a
comprehensive system of directional signage and related wayfinding
elements.
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VI. DEVELOPMENT STANDARDS

The following standards are intended to supplement the existing General Plan and ESMC. Where this Specific Plan is inconsistent with the ESMC, the Specific Plan prevails. Where this Specific Plan does not specifically regulate, development must comply with the standards and requirements set forth in the ESMC.

A. PERMITTED USES

Uses within the Specific Plan area are governed by the following Table, by district: Wireless facilities are permitted subject to the requirements of ESMC Chapter 15-19.

<table>
<thead>
<tr>
<th>Use</th>
<th>CMU</th>
<th>O/I MU</th>
<th>REC/OS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative fuel stations</td>
<td>P</td>
<td>P</td>
<td>--</td>
</tr>
<tr>
<td>Cafes</td>
<td>P</td>
<td>P</td>
<td>--</td>
</tr>
<tr>
<td>Data Centers</td>
<td>C</td>
<td>P</td>
<td>--</td>
</tr>
<tr>
<td>Financial institutions</td>
<td>P</td>
<td>P</td>
<td>--</td>
</tr>
<tr>
<td>General Offices, including medical and dental</td>
<td>P</td>
<td>P</td>
<td>--</td>
</tr>
<tr>
<td>General storage and warehousing</td>
<td>--</td>
<td>P</td>
<td>--</td>
</tr>
<tr>
<td>General storage and warehousing (Raytheon Company only)</td>
<td>P</td>
<td>P</td>
<td>--</td>
</tr>
<tr>
<td>Health Clubs</td>
<td>P</td>
<td>P</td>
<td>--</td>
</tr>
<tr>
<td>High and medium bay labs</td>
<td>--</td>
<td>P</td>
<td>--</td>
</tr>
<tr>
<td>High and medium bay labs (Raytheon Company only)</td>
<td>P</td>
<td>P</td>
<td>--</td>
</tr>
<tr>
<td>Light Industrial uses</td>
<td>--</td>
<td>P</td>
<td>--</td>
</tr>
<tr>
<td>Light Industrial uses (Raytheon Company only)</td>
<td>P</td>
<td>P</td>
<td>--</td>
</tr>
<tr>
<td>Movie and Entertainment Facilities</td>
<td>P</td>
<td>P</td>
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</tr>
<tr>
<td>Multimedia Related Offices</td>
<td>P</td>
<td>P</td>
<td>--</td>
</tr>
<tr>
<td>Postproduction Facilities</td>
<td>P</td>
<td>P</td>
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<tr>
<td>Public facilities, including, but not limited to, fire and police facilities, post offices, and libraries.</td>
<td>P</td>
<td>P</td>
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<tr>
<td>Public Utilities</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Recreation Facilities (public and private)</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Research and Development, including scientific research and experimental development laboratories</td>
<td>P</td>
<td>P</td>
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<tr>
<td>Restaurants, full service</td>
<td>P</td>
<td>P</td>
<td>--</td>
</tr>
<tr>
<td>Restaurants, fast food</td>
<td>P</td>
<td>P</td>
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</tr>
<tr>
<td>Retail uses (excluding off site sale alcohol sales)</td>
<td>P</td>
<td>P</td>
<td>--</td>
</tr>
<tr>
<td>Use</td>
<td>CMU</td>
<td>O/I MU</td>
<td>REC/OS</td>
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<tr>
<td>--------------------------------------------------------------------</td>
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<tr>
<td>Special Effects Studios</td>
<td>P</td>
<td>P</td>
<td>--</td>
</tr>
<tr>
<td>Studio/sound stage(s) and other support facilities</td>
<td>P</td>
<td>P</td>
<td>--</td>
</tr>
<tr>
<td>Trade and vocational schools for adults</td>
<td>P</td>
<td>P</td>
<td>--</td>
</tr>
<tr>
<td>Any use customarily incidental to a permitted use, including the storage of hazardous materials associated with any allowable use.</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Drive-through or walk-up services related to financial operations.</td>
<td>A</td>
<td>A</td>
<td>--</td>
</tr>
<tr>
<td>The on-site sale and consumption of alcohol at restaurants and cafes.</td>
<td>AUP</td>
<td>AUP</td>
<td>--</td>
</tr>
<tr>
<td>The off-site sale of alcohol at retail establishments.</td>
<td>AUP</td>
<td>AUP</td>
<td>--</td>
</tr>
<tr>
<td>Drive-through restaurants</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Hotels (provided that the existing deed restriction is removed)</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Outdoor dining, exempting outdoor dining at restaurants where outdoor dining comprises 20% or less of the total dining area of the restaurant, but not exceeding two hundred (200) square feet of floor area.</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Laser/optical targets</td>
<td>A/AUP</td>
<td>A/AUP</td>
<td>--</td>
</tr>
<tr>
<td>Parking structures and surface parking lots</td>
<td>A</td>
<td>P/A</td>
<td>P/A</td>
</tr>
<tr>
<td>Radar towers</td>
<td>A/AUP</td>
<td>A/AUP</td>
<td>A/AUP</td>
</tr>
<tr>
<td>Video arcades, defined as any business with three or more video or arcade machines.</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>All uses that are not permitted, conditionally permitted, or determined to be similar uses as specified above.</td>
<td>--</td>
<td>--</td>
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</tr>
<tr>
<td>All uses that are involved with the storage of waste materials as the primary business</td>
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</tr>
<tr>
<td>Freight Forwarding</td>
<td>--</td>
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</tr>
<tr>
<td>Gasoline and Diesel Service Stations</td>
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<tr>
<td>Mini-storage</td>
<td>--</td>
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<td>--</td>
</tr>
<tr>
<td>Residential Uses</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>AUP Administrative Use Permit</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A Permitted Accessory Use</td>
<td>C</td>
<td></td>
<td></td>
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<tr>
<td>P Conditional Use</td>
<td>P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-- Not Permitted</td>
<td>--</td>
<td></td>
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</tr>
</tbody>
</table>

Note: Pursuant to the ESMC, uses of a similar nature which are unlisted in Table IV-1 may be considered by the Director of Planning and Building Safety, subject to appeal to the Planning Commission.
B. DEVELOPMENT STANDARDS

1. Lot Area
   a. The minimum building lot area is 10,000 gross square feet.

2. Height
   a. Buildings and structures within the Campus cannot exceed 200 feet in height, measured from finished grade. Exceptions to building height are permitted in accordance with ESMC §15-2-3.
   b. Structures cannot interfere with the operation of the MTA Green Line.

3. Setbacks
   a. Buildings and structures within the Campus must be setback a minimum of twenty-five feet (25’) from the adjoining public rights-of-way of El Segundo Boulevard, the future extension of Nash Street, and the future extension of Continental Boulevard, except for lots with frontage on the portion of El Segundo Boulevard located east of the future extension of Continental Boulevard and west of the future extension of Nash Street. For lots with frontage on the portion of El Segundo Boulevard located east of the future extension of Continental Boulevard and west of the future extension of Nash Street, buildings and structures must be setback a minimum of fifteen feet (15’) from the adjoining public right-of-way of El Segundo Boulevard.
   b. Building and structure setbacks within the interior of the Specific Plan must be a minimum of fifteen feet (15’) from each lot line. Actual required setbacks may vary depending on Building Code requirements that relate to type and height of the structure.
   c. Permitted intrusions into setbacks are identified in ESMC §15-2-7. The Class 1 bicycle path located adjacent to El Segundo Boulevard may also be located within required setback areas as long as a minimum distance of 5 feet is maintained from any building.

4. Lot Frontage
   a. A minimum of 100 feet of frontage must be provided for all lots whether on a dedicated public street or a private street. Parcels exclusively devoted to right-of-way purposes are excluded from minimum lot frontage requirements.
5. **Floor Area**

a. The South Campus Specific Plan is currently developed with 1,802,513 net square feet of development. Development in the Campus is limited to an additional 1,916,376 net square feet of floor area, as specified herein, for a total pre-dedication of public right-of-way net FAR of 0.60 distributed over the entire Campus area and not required as a maximum FAR on any individual lot as permitted in Section B.6 below. The maximum amount of developed floor area within the Specific Plan must not exceed 3,718,889 net square feet as permitted by this Specific Plan.

b. For purposes of this Specific Plan, application of a floor area ratio results in net building square footage. Gross floor area is the sum of the net floor area plus an additional twelve percent (12%) of net floor area for all proposed new construction.

c. Net floor area consists of the area of all floors or levels included within the exterior surrounding walls of a building or structure. The total space devoted to high or medium bay labs may be multiplied by a factor of 0.5 to determine the net floor area. Space devoted to the following is not included when determining the total net floor area within a building or structure:

1. Elevator shafts;
2. Stairwells;
3. Courts or atriums uncovered and open to the sky;
4. Rooms exclusively holding building operating equipment;
5. Parking spaces at or above grade and access thereto;
6. Structures devoted exclusively for parking;
7. Restrooms in common areas of nonresidential buildings.

d. Gross floor area consists of the area included within the surrounding exterior walls of a building or portion thereof, exclusive of garages, vent shafts, and courts. The floor area of a building, or portion thereof, not provided with surrounding exterior walls is the usable area under the horizontal projection of the roof or floor above. For new construction, after the date of adoption of this plan, gross floor area is defined as specified in section VI.B.5.b. above.

6. **Floor Area Ratio and Transfer of Development Rights**

a. FAR may be transferred from any parcel within the boundaries of the Campus (the “Donor Site”) to any other parcel within the boundaries of the Campus, whether contiguous or non-contiguous, within the Specific Plan area (the “Receiver Site”) upon the written consent of the owners of both the Donor Site and Receiver Site. Any FAR transferred from a Donor Site
is deducted from that parcel’s base FAR. The overall FAR for the entire Campus cannot exceed a net 0.60 as computed in accordance with the above, based on pre-dedication of public right-of-way, but any individual parcel may exceed such FAR. Transfer of FAR may be accomplished by submitting a letter from the applicant to the Director of Planning and Building Safety before the City issues building permits for the Receiver Site which would utilize the transferred FAR. The Director will maintain records of such transfers and the current density allocations, if any, of all of the properties within the Specific Plan area. In addition, the owner of Donor Site must record a covenant acceptable to the Director and the City Attorney memorializing such transfer of FAR. No approval from the City is required for such transfer.

b. Regardless of any transfer of FAR, no building can exceed the applicable development standards set forth in this Specific Plan.

7. **Walls and Fences**

a. All walls and fences must comply with ESMC §15-2-4.

8. **Accessory Structures**

a. Radar towers, dishes, laser/optical targets, and other similar structures are permitted as accessory structures only subject to approval of an Administrative Use Permit.

C. **CIRCULATION**

1. Transportation Demand Management (TDM) Plan, that identifies trip reduction methods in accordance with the guidelines set forth in ESMC Chapter 15-16 and Chapter 15-17, must be prepared for development within the Campus. A TDM Plan must be submitted for City review concurrent with the first site plan application within the campus.

2. The maximum number of total daily trips, as well as A.M. and P.M. peak hour vehicle trips for new development within the Specific Plan area, as determined in accordance with the Trip Generation tables set forth in Appendix A, cannot exceed the table below, unless a subsequent traffic report is prepared and approved by the Director of Planning and Building Safety that identifies potential impacts and proposes feasible measures to mitigate previously unidentified new impacts. To ensure that peak traffic does not exceed these thresholds, a trip inventory analysis must be prepared, acceptable to the Director of Planning and Building Safety, to maintain a cumulative accounting of total square footage by land use as well as the cumulative number of A.M. and P.M. peak hour trips. The trip inventory must be updated and submitted upon the filing of each building permit request.
3. Public and private streets must be designed and constructed in accordance with the General Plan and in the overall right-of-way size identified in the General Plan.

   a. The connection of Hughes Way with Nash Street must be constructed to the standards of a secondary arterial street identified in the Circulation Element of the General Plan.

   b. The extension of Continental Boulevard to Hughes Way must be constructed to the standards of a commercial collector street identified in the Circulation Element of the General Plan.

   c. The private street connecting Continental Boulevard and Nash Street must be constructed to the standards of a local commercial street identified in the Circulation Element of the General Plan.

D. PARKING AND LOADING

   1. Parking and loading spaces must be provided in accordance with ESMC Chapter 15-15, except as provided below.

   2. Within the O/I MU District or for office/industrial uses within the CMU District, parking lots or structures may serve multiple lots and buildings. Up to 100% of the required parking for an individual lot in the O/I MU District or for office/industrial uses within the CMU District, may be provided off-site subject to the following standards:

      a. Parking must be located within 300 feet of the lot it serves.
b. Pedestrian pathways must be provided connecting parking lots or structures with the buildings they serve. Where off-site parking is across a project roadway, a crosswalk must be provided.

c. Reciprocal parking and access easements or covenants must be recorded before the City issues a building permit and must be shown or noted on the applicable site plans.

d. Parking lots and driveways may straddle lot lines subject to provisions in a reciprocal parking and access easement or covenant. Such documents must provide provisions for shared maintenance.

3. For retail and restaurant uses within the CMU District, up to 20% of the required parking for an individual lot in may be provided off-site with approval by the Director of Planning and Building Safety, subject to the following performance standards:

   a. Parking must be located within 150 feet of the lot it serves.

   b. Pedestrian pathways must be provided connecting parking lots or structures with the buildings they serve. Where off-site parking is across a project roadway, a crosswalk must be provided.

   c. Other conditions may be applied by the Director as part of site plan approval.

   d. Requests for over 20% off-site parking require Planning Commission review and approval and may include such conditions as the Planning Commission may lawfully impose.

4. For retail and restaurant uses within the CMU District, parking lots may service multiple lots or buildings subject to the following standards:

   a. Reciprocal parking and access easements or covenants must be recorded before issuance of a building permit and must be shown or noted on the applicable site plans.

   b. Parking lots and driveways may straddle lot lines subject to provisions in a reciprocal parking and access easement or covenant. Private access roads that connect parking lots with a right-of-way may encroach into a required landscape setbacks on interior property lines. Such documents must provide provisions for shared maintenance and landscaping.

5. The number of required parking spaces may be modified subject to the approval of
a Transportation Systems Management Plan, as specified in the ESMC Chapter 15-16 “Developer Transportation Demand Management.”

6. The Director of Planning and Building Safety may modify the required number of parking spaces up to a maximum of 10% based on the submittal and approval of a parking demand study or shared parking analysis. Additionally, for any use for which the number of parking spaces is not listed in ESMC Chapter 15-15, the Director of Planning and Building Safety shall specify the required number of spaces based on a parking demand study.

7. The Planning Commission may modify the required number of parking spaces up to a maximum of 20% based on the submittal of a parking demand/shared parking study.

8. Notwithstanding items 6 and 7 above, the Director of Planning and Building Safety may also grant uses with significantly different peak hours of operation up to a 20% parking reduction, without approval of the Planning Commission. Any request for such shared parking must meet the following requirements:

a. A parking study must be submitted by the applicant demonstrating that there will not be substantial conflict in the peak hours or parking demand for the uses for which the joint use is proposed.

b. The number of parking stalls which may be credited against the requirements of the structures or uses involved cannot exceed the number of stalls reasonably anticipated to be available during differing hours of operation.

c. A written agreement must be executed by all parties concerned, to the satisfaction of the Director of Planning and Building Safety and the City Attorney assuring the continued availability of the number of stalls designed for joint use.

9. Preferential parking must be provided for carpools and vanpools.


11. The Raytheon Company recreation facility within the Specific Plan area is not required to provide parking beyond that already provided for daytime, weekday users.

E. LANDSCAPING

Landscaping is a critical criterion when evaluating development proposals in the Campus. This section will ensure that adequate landscaping area and permanent maintenance is provided for all
new development. This mandate is also in accordance with the City’s requirements to landscape commercial and industrial areas.

Landscaped areas must be provided and permanent irrigation systems installed in the landscaped areas at: 1) the Campus entry areas, 2) around the perimeter of the buildings in the setbacks, 3) within the required setbacks along the property perimeter and, 4) in the Vehicular Use Areas (VUAs) as defined in ESMC §15-1-6.

A Landscape Master Plan must be prepared for the Campus to ensure a unified appearance implementing the intent of the Design Guidelines and objectives of this Specific Plan. The Landscape Master Plan must be submitted to the City at or before the first site plan review submittal within the Campus.

ALL LANDSCAPING

1. Landscaping must conform to the City’s Water Conservation in Landscaping requirements as set forth in ESMC Chapter 10-2.

CAMPUS ENTRIES

Campus entries must be provided at the following locations:

- Nash Street at El Segundo Boulevard
- Hughes Way/Nash Street at the southern campus boundary

Entry landscaping must be in substantial conformance with the entry concepts outlined in the Design Guidelines of this Specific Plan.

BUILDING PERIMETER LANDSCAPING

1. Except as otherwise allowed by this Plan, a minimum horizontal depth of five feet of landscape materials, excluding curbs, must be provided around each building. In instances where two buildings are separated by ten feet, the landscape requirement may be reduced to allow for pedestrian walkways/access.

PROPERTY PERIMETER LANDSCAPING

1. One shade tree must be provided for every 25 feet of street frontage.

2. The following encroachments are permitted into the landscaped setback areas:

a. Parking may encroach into the landscaped setback up to a maximum of fifty percent of the required setback area, provided a minimum landscaped setback of five feet is maintained except as permitted in Specific Plan § VI.D.2.

b. “Architectural landscape features” including fountains, free-standing
arbors/pergolas, and public art, may encroach into the landscaped setback area subject to site plan review, provided a minimum landscaped setback of five feet is maintained. The features may cover a maximum of twenty five percent of the total area of the setback, and be a maximum of twenty feet in height.

**VEHICULAR USE AREAS**

1. Vehicular Use Areas (VUA) include parking lots and loading areas. Landscaping in the VUAs must cover a minimum of five percent of the VUA and be distributed uniformly throughout the VUA. Such landscaping is in addition to the required property perimeter and building perimeter landscaping. The figure to the right represents a typical parking area within the Campus.

   a. A minimum of 5 foot landscape buffers must be provided at all parking lot edges to screen parking lots and provide shading.

   b. Planting areas containing trees must have a minimum width of 5 feet.

   c. Each parking space must be located within 30 feet of a tree. Trees are required to provide shade and parking lot/loading area screening.

**F. PUBLIC SAFETY**

In an effort to ensure the safety of employees and visitors to the Campus, the following strategies must be incorporated into site development:

1. Lighting must be adequate throughout the Campus and shielded to minimize off-site illumination. Submittal of photometric studies is required as part of any site plan review submittal which includes parking lots, and parking structures in the Specific Plan area.

2. The site design and operation must comply with fire and police safety regulations.
with regard to site layout, building configurations, landscape design, and infrastructure requirements.

3. Street lighting must be provided in accordance with ESMC requirements.

G. SIGNAGE

1. Signage within the Campus must conform to the signage regulations of the ESMC except as established and approved in a Master Sign Program for the Campus.

2. The following signs are not permitted within the Campus:
   - Billboards, as defined in the ESMC; and
   - Pole signs; and
   - Signs incorporating flashing or blinking lights.

3. A Master Sign Program for the entire Campus must be developed and submitted for review and approval by the Planning Commission before or concurrent with the first site plan review for a project within the Specific Plan. The Master Sign Program must include the following elements:
   - Campus Master signage (entryways, common sign design throughout Campus);
   - Sign standards developed for each of the three uses allowed: industrial, commercial and office;
   - Provisions for way finding and decorative elements such as banners;
   - General features that all signs in the Campus are required to comply with; and
   - Regulations for temporary signs (including construction signs).

H. SUSTAINABILITY

1. All new development must have buildings designed to be energy efficient, at least 15% above Title 24 requirements.

2. The Project areas must include Stormwater management practices that treat Stormwater runoff from 90% of the average rainfall on the site using structural and non-structural management measures.

3. Preferential parking must be provided for carpools and vanpools at the rate of not less than 10 percent of total employee parking.
4. Bicycle parking must comply with the ESMC.

5. Shower facilities must be provided for buildings of 25,000 square feet or greater.

6. Exterior lighting must be energy efficient and designed to minimize light pollution.

7. Low-emitting building materials must be utilized.

8. Roof structures must be designed to support future solar panels.

9. Reclaimed water must be utilized for all landscaped areas.

10. A Pedestrian Walkway for direct access to the Green Line Station from the project site that meets ADA minimum width requirements.

I. ENCLOSED USES

All uses must be conducted wholly within an enclosed building except for the following:

1. Electrical distribution stations, adequately screened from public rights-of-way and public view, as determined by the Director of Planning and Building Safety.

2. Outdoor restaurants and cafes incidental to the permitted use, provided they comply with the provisions of ESMC §15-2-16.

3. Recreational facilities customarily conducted in the open.

4. Radar towers, antennas, dishes, and laser/optical targets, provided they comply with the screening requirements of ESMC § 15-2-8.
VII. ADMINISTRATION

A. INTRODUCTION

Unless regulated by this Specific Plan, development will be administered and enforced by the City in accordance with the ESMC. This Specific Plan supersedes any conflicts with ESMC zoning regulations.

1. The Director of Planning and Building Safety may grant administrative use permits in accordance with ESMC Chapter 15-22.

2. The Director of Planning and Building Safety may make other administrative determinations using the same procedures set forth in ESMC Chapter 15-22.

3. The Director of Planning and Building Safety may grant adjustments and administrative adjustments in accordance with ESMC Chapter 15-24.

4. The Planning Commission may grant conditional use permits in accordance with ESMC Chapter 15-23.

B. MUNICIPAL CODE REFERENCES

All section references in the Specific Plan refer to the El Segundo Municipal Code (ESMC) as adopted at the time of building permit application submittal.

C. MODIFICATIONS

1. Major Modifications

The following modifications constitute a Major Modification and require an amendment to this Specific Plan:

a. Any decrease in the required building setbacks as set forth in Section VI.B.3 above;

b. Any increase in the total developable square footage of the entire Specific Plan in excess of the maximum allowable development intensity allowed under the Specific Plan;

c. Any increase in height of buildings or structures on the Property above 200 feet;

d. Any increase in the maximum number of A.M. and P.M. peak hour vehicle trips for the Specific Plan as specified in Section VI.C.2 above, unless a subsequent traffic report has been prepared to the reasonable satisfaction of
the Director that identifies potential impacts and proposes feasible mitigation measures to mitigate such impacts and otherwise complies with CEQA;

e. Any change in use to a use which is not permitted under the Specific Plan, except as approved by the Director in accordance with Chapter 15-22 of the ESMC;

f. Any change in the land use plan categories identified in Exhibit 5 of this plan.

g. Any decrease in the minimum required lot area;

h. Any decrease in the minimum required lot frontage;

i. Any material modification that requires modification to the EIR other than an Addendum; and

j. Any modification deemed by the Director of Planning and Building Safety as major and requiring amendment to this Specific Plan.

2. Minor Modifications

Any modification to this Specific Plan not listed above as a “major modification,” including a use approved subject to an Administrative Use Permit, is a Minor Modification. The Developer may make Minor Modifications without amending this Specific Plan upon the administrative approval of the Director of Planning and Building Safety or designee, provided that such modifications are consistent with the Development and Design Standards, Applicable Rules, and Project Approvals. Such Minor Modifications may include:

- Modifications to the streetscape palette with the concurrence of the City’s urban forester.

- Modifications to infrastructure sizing based upon final engineering plans approved by the City.

- Relocation of the Raytheon Recreation Facility to a parcel or parcels of the same size (7.54 acres) or larger and having similar access. Should this occur, a revised land use plan shall be provided updating the land use plan of this document (Exhibit 5).

- Modifications to the conceptual plan (Exhibit 6), Vesting Tentative Map (Exhibit 7) and Conceptual Utility Plans (Exhibits 8, 9, 10, 11 and 12) that do not exceed the new development vehicle trip cap, do not increase the number of parcels and do not require subsequent CEQA environmental
review may be deemed minor by the Director of Planning and Building Safety.

- Adjustments, Administrative Adjustments, Administrative Determinations subject to the requirements in Section VII.A, above.

D. SITE PLAN REVIEW

1. Overview

In order to develop a Project that is in conformance with the uses, density, approved FAR, Design Guidelines and trip generation of this Specific Plan, a Site Plan Review ("SPR") application shall be filed with the Department of Planning and Building Safety.

2. Application for Site Plan Review - Contents

The Site Plan Review Application must conform to the following. The number of copies required for submittal will be determined by City policy at time of submittal:

a. A “Development Status Tracking Table” must be submitted to the Director of Planning and Building Safety for review by the Planning and Building Safety Department as part of any site plan submittal within the Specific Plan area. This table must specify the development request for the site plan including the following information:

   - Specific Plan parcel area(s) and the allocation of intensity by land use as defined in Section III herein;

   - A revised Land Use table for the Specific Plan area by phase, showing updated land use distribution and intensity as modified by the site plan submittal; and

   - Submittal of a traffic report analyzing the trip generation for the land use(s) and demonstrating that the maximum number of vehicle trips (trip ceiling) is not exceeded.

c. Plans and landscape plans for projects must be prepared by a registered architect and a licensed landscape architect respectively.

c. Site Plan. A fully dimensioned site plan, drawn to scale and showing:

1. Location of existing and proposed structures, including signs, showing dimensions from property line;

2. Location, size and species of existing trees or natural attributes;
3. Location of off-street parking. The number of parking spaces (specifying handicapped, compact and regular spaces), type of paving, direction of traffic flow, parking stall dimensions, and areas for turning and maneuvering vehicles;

4. Location and dimension of driveway approaches, off-street loading areas, street and highway dedications;

5. Refuse disposal and recycling;

6. Location, height, and material of existing and/or proposed fences and walls;

7. Means of screening all vents, pipes, antennas and machinery placed on roofs;

8. Location, height and specifications of all existing and/or proposed exterior lighting;

9. Location of all utility pipes, valves, vaults and similar appurtenances; and

10. Location of structures on abutting lots showing dimensions to property line.

d. Photometric Analysis for parking lots and parking structures.

e. Elevation Drawings. Elevation drawings dimensioned and fully illustrating all sides of the proposed structures. These drawings must include:

1. Location of signs and size, height, color, material and type of illumination of all signs. A Master Sign Plan must be submitted when the development includes two or more tenants;

2. Location, size and style of architectural features, such as awnings, doors, windows and other wall openings; and

3. All exterior materials and their colors.

f. Landscape Plan. A preliminary landscape plan showing the location and design of the following listed items:

1. Existing trees (by species and size) proposed to be retained, removed or relocated on the site;
2. Landscaped areas and the numbers, varieties and sizes of plant materials to be planted therein and all other landscape features;

3. Softscape, hardscape (walkways, paving, textured concrete) and lighting; and

4. All submittal material required by ESMC Chapter 10-2.

g. Colors and Materials. A materials and colors board showing all colors and materials, with color chips and textures keyed to the principal plan elements where those components are found.

h. Floor Plans.

i. Photo Board. Showing subject site, and all surrounding properties.

j. Rendering/Illustration. One set of color elevation drawings or a color rendering. The Director of Planning and Building Safety may require, at his/her discretion, a computer model where such is necessary to evaluate scale, massing and architectural treatment.

3. Site Plan Review - Procedure

a. The Director of Planning and Building Safety must review the application to ensure there is consistency with the Specific Plan within 30 days after the Director deems the application complete.

b. CEQA Review, if required, must be conducted in accordance with applicable law.

c. The Site Plan Review must be timely scheduled for public hearing before the Planning Commission, which date should not exceed 45 days after the completion of the public review period of the environmental documentation, or within 30 days from the date the application is deemed complete if no further environmental review is required. The Planning Commission must render its decision in writing, either approving, approving with conditions, or denying the Site Plan Review application, stating the reasons for such action. The decision of the Planning Commission is final unless appealed to the City Council.

d. Any aggrieved person may appeal the Planning Commission’s decision to the City Council. Such appeal must be filed in writing with the Department of Planning and Building Safety within ten (10) days after the date of the written decision by the Planning Commission. Upon receipt of such an appeal and the payment of the appropriate filing fee, the matter must be scheduled for consideration by the City Council no more than 45 days after
the date of receipt of the appeal.

e. The Site Plan is valid for two years from the date of approval. If construction does not commence within such time, but the applicant has diligently pursued the Project plan review process, the Director of Planning and Building Safety may extend the Site Plan approval for up to two additional years.

f. After the Site Plan is approved, the Director of Planning and Building Safety may approve minor changes in the Site Plan or its conditions if the Director finds that there are practical reasons for such changes, that such changes do not substantially vary from the previously approved site plan and applicable law and that such changes do not involved deviations from the design’s intent.

4. Site Plan Review Criteria

The purpose of the Site Plan Review procedure is to ensure that the development provides a cohesive visual identity and coordinated design character for the Specific Plan area of high quality. The overall coordinated design character must be expressed in the site planning, architecture, landscaping, lighting, and signage. The architectural design is to be compatible in character, massing and materials consistent with the conceptual plan depicted in this Plan.

In approving the Site Plan Review the Planning Commission, or City Council on appeal, must consider the following factors:

a. The dimensions, shape and orientation of the parcel;

b. The placement of buildings and structures on the parcel;

c. The height, setbacks, bulk and building materials;

d. The building materials and design;

e. The distance between buildings or structures;

f. The location, number and layout of off-street parking and loading spaces;

g. The internal vehicular patterns and pedestrian safety features;

h. The location, distribution, amount and type of landscaping materials and the sustainability of the landscaping material with the El Segundo climate in compliance with the applicable climate zone;
i. The placement, photometrics, height and direction of illumination of light standards;

j. The location, number, size and height of signs;

k. The location, height and materials of walls, fences or hedges;

l. The location and method of screening refuse and storage areas, roof equipment, pipes, vents, utility equipment and all equipment not contained in the main buildings of the development;

m. Compliance with all applicable development standards including, but not limited to, height, setbacks, FAR, trip generation, and off-street parking requirements; and,

n. Consistency with the Design Guidelines of this Specific Plan.

5. Approval Criteria

The Planning Commission, or City Council on appeal, may approve the Site Plan Review if it finds that the site plan, architecture and landscape design, with conditions if necessary are consistent with this Specific Plan.

6. Exempt Activities

The following is a list of activities which are exempt from the site plan review process. This list is not all-inclusive; the Director of Planning and Building Safety may exempt other activities not listed:

a. All interior changes and alterations

b. Demolition of Buildings E-20, E-21, E-23, or E-24

c. Exterior mechanical equipment (heating, air conditioning, water heater) designed with mechanical equipment screening compatible with the architecture of the building to which it is adjacent or affixed.

d. Minor exterior repairs costing less than $50,000 in 2015 dollars, indexed for inflation to the Consumer Price Index (CPI).

e. Reglazing, new mullions

f. Re-landscaping consistent with the landscape palette

g. Repainting

h. Reroofing with similar style roofing materials
E. AMENDMENT

In accordance with the Government Code §§ 65450-65457, Specific Plans must be prepared, adopted and amended in the same manner as General Plans except that Specific Plans may be adopted by resolution or by ordinance.

This Specific Plan may be amended as necessary by ordinance. Said amendment or amendments do not require a concurrent General Plan amendment unless the Director of Planning and Building Safety determines that the proposed amendment would substantially affect General Plan goals, policies, objectives or programs.

F. CALIFORNIA ENVIRONMENTAL QUALITY ACT COMPLIANCE

The El Segundo South Campus Specific Plan and related entitlements were approved in accordance with the California Environmental Quality Act (CEQA), the State CEQA Guidelines (Guidelines), and City policies adopted to implement the CEQA and the Guidelines.

An Environmental Impact Report was prepared and certified by the City Council which establishes the development thresholds shown in Table VII-1 below.

<table>
<thead>
<tr>
<th>EIR Project</th>
<th>Net Floor Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Site Facilities</td>
<td>1,802,513 square feet</td>
</tr>
<tr>
<td>The Conceptual Site Plan and Application Materials evaluated within the EIR document.</td>
<td>1,930,000 square feet (including 13,624 square feet of demolition and replacement)</td>
</tr>
</tbody>
</table>

The CEQA clearance indicated above analyzes the effects of 1,930,000 net square feet of incremental development by the Project, 13,624 of which is anticipated to be replacement of existing facilities with allowed uses.

Any portion of the Project that is developed consistent with the Conceptual Site Plan evaluated for this Specific Plan is exempt from further CEQA analysis unless an event specified in Public Resources Code § 21166 occurs as to the Specific Plan.
APPENDIX A

El Segundo South Campus Specific Plan Trip Generation Rates, Credits, and Caps

The following two tables are to provide data for maintaining a trip inventory analysis for the build-out of the Specific Plan. A table maintaining a cumulative accounting of total square footage by land use as well as the cumulative number of A.M. and P.M. peak hour trips generated by new development within the Specific Plan area must be generated by the project applicant and verified by the City. The trip inventory must be updated and submitted upon the filing of site plan review application and verified before a building permit is issued.

The traffic-generating characteristics of most of the components of the Project are identified in the Institute of Transportation Engineers’ (ITE) *Trip Generation, 9th Edition.*

With mixed-use projects there are many opportunities for interaction amongst the various uses. The interaction is likely to reduce the number of trips entering and leaving the site (“internal capture”). Additionally, many of the individual uses will attract vehicles already on the surrounding street network (“diverted/pass-by”). These are trips that are already on the roadway network and are diverted to the Project. Furthermore, since the Specific Plan is adjacent to the El Segundo Metro Green Line station, the following table takes into consideration credits for transit usage, as well as for “internal capture” and “diverted/pass-by.”

**Appendix A – Table 1**

*Project Trip Ceiling for trips associated with new development within the ESSCSP area.*

<table>
<thead>
<tr>
<th>AM Peak Hour Trips</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In</td>
<td>Out</td>
</tr>
<tr>
<td>2634</td>
<td>408</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PM Peak Hour Trips</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In</td>
<td>Out</td>
</tr>
<tr>
<td>631</td>
<td>2489</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Daily Trips</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>26,585</td>
<td></td>
</tr>
</tbody>
</table>
Appendix A – Table 2
Summary of Trip Generation Rates and Trip Credits

RAYTHEON SOUTH CAMPUS SPECIFIC PLAN DRAFT TRAFFIC IMPACT ANALYSIS
SUMMARY OF TRIP GENERATION RATES AND TRIP CREDITS

<table>
<thead>
<tr>
<th>Use</th>
<th>AM Peak-Hour Formula (per 1,000 gross square feet)</th>
<th>PM Peak-Hour Formula (per 1,000 gross square feet)</th>
<th>Average Daily Trips Formula (per 1,000 gross square feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail</td>
<td>T = 0.96 (A)</td>
<td>T = 3.71 (A)</td>
<td>T = 42.70 (A)</td>
</tr>
<tr>
<td>Internal Capture</td>
<td>Less 1%</td>
<td>Less 1%</td>
<td>Less 2%</td>
</tr>
<tr>
<td>Diverted/Pass-By</td>
<td>-</td>
<td>Less 34%</td>
<td>-</td>
</tr>
<tr>
<td>General Light Industrial</td>
<td>T = 0.92 (A)</td>
<td>T = 0.97 (A)</td>
<td>T = 6.97 (A)</td>
</tr>
<tr>
<td>Internal Capture</td>
<td>-</td>
<td>Less 1%</td>
<td>Less 1%</td>
</tr>
<tr>
<td>Warehouse</td>
<td>T = 0.30 (A)</td>
<td>T = 0.32 (A)</td>
<td>T = 3.56 (A)</td>
</tr>
<tr>
<td>Office</td>
<td>T = 1.56 (A)</td>
<td>T = 1.49 (A)</td>
<td>T = 11.03 (A)</td>
</tr>
<tr>
<td>Internal Capture</td>
<td>-</td>
<td>Less 1%</td>
<td>Less 1%</td>
</tr>
<tr>
<td>Transit Credit*</td>
<td>Less 5%</td>
<td>Less 5%</td>
<td>Less 5%</td>
</tr>
</tbody>
</table>

Other Possible Uses

<table>
<thead>
<tr>
<th>Use</th>
<th>AM Peak-Hour Formula (per 1,000 gross square feet)</th>
<th>PM Peak-Hour Formula (per 1,000 gross square feet)</th>
<th>Average Daily Trips Formula (per 1,000 gross square feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health/Fitness Club</td>
<td>T = 1.41 (A)</td>
<td>T = 3.53 (A)</td>
<td>T = 32.93 (A)</td>
</tr>
<tr>
<td>Hotel</td>
<td>T = 0.53 (R)</td>
<td>T = 0.60 (R)</td>
<td>T = 8.17 (R)</td>
</tr>
<tr>
<td>Medical/Dental Office</td>
<td>T = 2.39 (A)</td>
<td>T = 3.57 (A)</td>
<td>T = 36.13 (A)</td>
</tr>
<tr>
<td>Supermarket</td>
<td>T = 3.40 (A)</td>
<td>T = 9.48 (A)</td>
<td>T = 102.24 (A)</td>
</tr>
<tr>
<td>Quality Restaurant</td>
<td>T = 0.81 (A)</td>
<td>T = 7.49 (A)</td>
<td>T = 89.95 (A)</td>
</tr>
<tr>
<td>High-Turnover (Sit-Down) Restaurant</td>
<td>T = 10.81 (A)</td>
<td>T = 9.85 (A)</td>
<td>T = 127.15 (A)</td>
</tr>
<tr>
<td>Fast-Food Restaurant without Drive-Through</td>
<td>T = 43.87 (A)</td>
<td>T = 26.15 (A)</td>
<td>T = 716.00 (A)</td>
</tr>
<tr>
<td>Window</td>
<td>T = 108.38 (A)</td>
<td>T = 40.75 (A)</td>
<td>T = 818.58 (A)</td>
</tr>
</tbody>
</table>

Notes
* Trip generation adjustment discount associated with proximity to transit service for similar sites based on recommendations published by Los Angeles County Metropolitan Transportation Authority (LAMTA) and ITE.
T: Trip ends
A: Building area in 1,000 sq. ft.
R: Rooms
APPENDIX B
EL SEGUNDO SOUTH CAMPUS SPECIFIC PLAN
LEGAL DESCRIPTION

THAT PORTION OF SECTION 18, TOWNSHIP 3 SOUTH, RANGE 14 WEST, IN THE RANCHO SAUSAL REDONDO, IN THE CITY OF EL SEGUNDO, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS SHOWN ON THE MAP FILED IN CASE NO. 11629, SUPERIOR COURT OF SAID COUNTY ON JUNE 21, 1890, IN THE OFFICE OF THE COUNTY CLERK OF SAID COUNTY, A COPY OF SAID MAP APPEARING IN THE FILES OF THE COUNTY SURVEYOR OF SAID COUNTY AS CLERK’S FILED MAP NO. 218, BOUNDED AS FOLLOWS:

BOUNDED ON THE NORTH BY THE NORTH LINE OF SAID SECTION 18; BOUNDED ON THE EAST BY THE WESTERLY LINE AND THE NORTHERLY PROLONGATION THEREOF OF TRACT NO. 26556, AS SHOWN ON MAP RECORDED IN BOOK 675 PAGES 93 TO 94 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY; BOUNDED ON THE SOUTHEAST BY THE NORTHWESTERLY LINE OF THE 80 FOOT STRIP OF LAND DESCRIBED IN THE DEED TO PACIFIC ELECTRIC RAILWAY CO., RECORDED MAY 27, 1913 AS INSTRUMENT NO. 210 IN BOOK 5750 PAGE 43 OF DEEDS, RECORDS OF SAID COUNTY AND BOUNDED ON THE SOUTHWEST BY THE NORTHEASTERLY LINE OF THE LAND DESCRIBED AS PARCEL 2 IN THE DEED TO SOUTHERN CALIFORNIA EDISON COMPANY, RECORDED MARCH 6, 1930 AS INSTRUMENT NO. 535 IN BOOK 9840 PAGE 33, OFFICIAL RECORDS OF SAID COUNTY.

EXCEPT THEREFROM, ALL OIL, GAS AND OTHER HYDROCARBONS, GEOTHERMAL RESOURCES AS DEFINED IN SECTION 6903 OF THE CALIFORNIA PUBLIC RESOURCES CODE AND ALL OTHER MINERALS, WHETHER SIMILAR TO THOSE HEREIN SPECIFIED OR NOT, WITHIN OR THAT MAY BE PRODUCED FROM THE PROPERTY BELOW A DEPTH OF FIVE HUNDRED (500) FEET, AS RESERVED BY DEED EXECUTED BY CHEVRON U.S.A. INC., A CORPORATION, RECORDED ON NOVEMBER 28, 1978 AS INSTRUMENT NO. 78-1317577, WHICH ALSO RECITES, "PROVIDED, HOWEVER, THAT ALL RIGHTS AND INTEREST IN THE SURFACE OF THE PROPERTY AND THE LAND MASS OF THE PROPERTY TO A DEPTH OF FIVE HUNDRED (500) FEET ARE HEREBY CONVEYED TO GRANTEE, NO RIGHT OR INTEREST OF ANY KIND THEREIN, EXPRESS OR IMPLIED, BEING EXCEPTED OR RESERVED TO GRANTOR EXCEPT AS HEREINAFTER EXPRESSLY SET FORTH."

ASSESSOR’S PARCEL NOs. 4138-014-047 AND 4138-014-013
CITY COUNCIL ORDINANCE
EXHIBIT C

DEVELOPMENT AGREEMENT
RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO:
CITY CLERK
CITY OF EL SEGUNDO
350 Main Street
El Segundo, California 90245

EXEMPT FROM RECORDER’S FEES
Pursuant to Government Code § 6103

DEVELOPMENT AGREEMENT
BY AND BETWEEN
THE CITY OF EL SEGUNDO
AND
RAYTHEON COMPANY

2000 El Segundo Boulevard
El Segundo, California 90245

THIS AGREEMENT MUST BE RECORDED WITHIN TEN DAYS OF EXECUTION BY
ALL PARTIES HERETO PURSUANT TO THE REQUIREMENTS OF GOVERNMENT
CODE § 65868.5
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DEVELOPMENT AGREEMENT

This Development Agreement is made and entered into by and between the CITY OF EL SEGUNDO ("City"), a general law city and municipal corporation, and RAYTHEON COMPANY ("Developer"), a Delaware corporation, as of this ___ day of __________, 2016. City and Developer are also individually referred to as “Party” and collectively as “Parties.” In consideration of the mutual covenants and agreements contained in this Agreement, City and Developer agree as follows:

1. Definitions. Unless the contrary is stated or clearly appears from the context, the following definitions govern the construction of the words and phrases used in this Agreement. Words and phrases not defined in this Section will have the meaning set forth in this Agreement; the El Segundo Municipal Code; or in common usage.

“Agreement” means this Development Agreement between the City and Developer.

“Applicable Rules” means:

- The El Segundo General Plan, as it existed on the Application Date, as modified by the Project Approvals;
- The El Segundo Municipal Code, as it existed on the Effective Date, as modified by the Project Approvals;
- The El Segundo South Campus Specific Plan as adopted;
- Such other laws, ordinances, rules, regulations, and official policies governing permitted uses of the Campus, density, design, improvement, development fees, and construction standards and specifications applicable to the development of the Campus in force at the time of the Effective Date, which are not in conflict with this Agreement.

“Application Date” means December 8, 2011, the date on which the last of the Project Approval applications was deemed complete by the City.

“Approved Plans” means a plan for any aspect of the Project, including, without limitation, the Site Plan, signage plans, and landscaping and irrigation plans, which are approved by City in accordance with the Development Standards, Applicable Rules and Project Approvals.


“Campus” means that 142.28 acre property located at 2000 El Segundo Boulevard in El Segundo, California more particularly described in attached Exhibit “A,” which is incorporated by reference.
“CEQA” means the California Environmental Quality Act (Public Resources Code § 21000, et seq.) including the regulations promulgated thereunder (14 Cal. Code of Regulations §15000, et seq., the “CEQA Guidelines”).

“City Council” means the City Council of the City of El Segundo.

“Developer” means Raytheon Company and its transferees, assigns and successors in interest.

“Development Standards” means the design and development standards that are applicable to the Project.

“Director” means the Director of Planning and Building Safety, or designee.

“Effective Date” means the date on which the Enabling Ordinance becomes effective in accordance with Government Code § 36937.


“Existing Development” means that development which exists on the Campus on the Effective Date, as more specifically set forth in attached Exhibit “B,” which is incorporated by reference.

“Enabling Ordinance” means Ordinance No. 1516, approving this Development Agreement.

“Future Approvals” means such subsequent discretionary and ministerial entitlements, including permits, which are required to develop the Project in addition to the Project Approvals, and which are applied for by Developer and approved by City.

“New Development” means any development constructed within the Specific Plan area after the Effective Date.

“Person” must mean a natural person or any entity.

“Project” means the development of the Campus in accordance with the Project Approvals.

“Project Approvals” means:

- Final Environmental Impact Report No. EA-905, as certified by Resolution No. 4958;
- Mitigation Monitoring Program for Final Environmental Impact Report No. EA-905, as adopted by Resolution No. 4958;
- General Plan Amendment No. 11-01, as approved by Resolution No. 4958 including a change in the Land Use Map;
• El Segundo South Campus Specific Plan No. 11-01, as adopted by Ordinance No. 1516;

• Zone Change No. 11-02, as approved by Ordinance No. 1516, including a change in the Zoning Map;

• Zone Text Amendment No. 11-01, as approved by Ordinance No. 1516;

• Vesting Map No. 71551, as approved by Resolution No. 4958; and

• This Agreement.

“Specific Plan” or “ESSCSP” means the El Segundo South Campus Specific Plan.

“Subsequent Rules” means any changes to the Applicable Rules, including, without limitation, any change by means of an ordinance, initiative, resolution, policy, order or moratorium, initiated or instituted for any reason whatsoever and adopted by the City Council, the Planning Commission or any other board, agency, commission or department of the City, or any officer or employee thereof, or by the electorate, which would, absent this Agreement, otherwise be applicable to the Campus.

“Transferee” means a Person which assumes in whole or in part the rights and obligations under this Agreement with respect to all or a portion of the Campus.

“Uniform Codes” means those Uniform Codes adopted by reference in the ESMC in accordance with Government Code §§ 50022.2, et seq. as required by applicable law including, without limitation, Health and Safety Code § 18944.5 and Title 24 of the California Code of Regulations. The Uniform Codes govern building and construction standards including, without limitation, the building, plumbing, electrical, mechanical, grading, sign, and fire standards.

2. Recitals. This Agreement is made with respect to the following facts and for the following purposes, each of which is acknowledged as true and correct by the Parties:

2.1 Pursuant to Government Code § 65865, et seq., City is authorized to enter into a binding contractual agreement with any person having a legal or equitable interest in real property for the development of such property.

2.2 Developer is the owner of the Campus.

2.3 Developer desires to develop the Campus in accordance with the El Segundo South Campus Specific Plan.

2.4 By this Agreement, City desires to obtain the binding agreement of Developer to develop the Campus in accordance with the Project Approvals and Applicable Rules. In consideration thereof, City agrees to limit the future exercise of certain of its governmental and proprietary powers to the extent specified in this Agreement.
2.5 By this Agreement, Developer desires to obtain the binding agreement of City to permit the development of the Campus in accordance with the Project Approvals and Applicable Rules. In consideration thereof, Developer agrees to waive its rights to challenge legally the restrictions and obligations set forth in this Agreement.

2.6 City and Developer have acknowledged and agreed that the consideration that is to be exchanged pursuant to this Agreement is fair, just and reasonable.

2.7 This Agreement is intended to provide flexible entitlements, within the parameters set forth herein and subject to the terms and conditions hereof, to meet the changing market demands that are likely to occur throughout the Term of this Agreement.

2.8 The Project uses are consistent with the General Plan, as amended through General Plan Amendment No. GPA 11-01.

2.9 Development of the Project will further the comprehensive planning objectives contained within the General Plan, and will result in public benefits including, among others, better circulation in the northeast quadrant of the City.

2.10 All of the Campus is subject to this Agreement.

3. **Binding Effect.** The burdens of this Agreement are binding upon, and the benefits of the Agreement inure to, each Party and each successive transferee, assign and successor in interest thereto and constitute covenants that run with the land.

3.1 **Constructive Notice and Acceptance.** Every Person who acquires any right, title or interest in or to any portion of the Campus in which Developer has a legal interest is, and must be, conclusively deemed to have consented and agreed to be bound by this Agreement, whether or not any reference to this Agreement is contained in the instrument by which such person acquired such right, title or interest.

3.2 **Rights to Transfer.** Developer may assign or transfer in whole or in part its rights and obligations under this Agreement with respect to the Campus, or any portion thereof, to any Transferee at any time during the Term of this Agreement without approval of City, including through provision of a long-term ground lease. For purposes of this Agreement, the Transferee must be considered the “owner” of that portion of the Campus which is covered by such transfer.

3.3 **Liabilities Upon Transfer.** Upon the delegation of the duties and obligations under this Agreement and the sale, transfer or assignment of all or any portion of the Campus, Developer will be released from its obligations under this Agreement with respect to the Campus, or portion thereof, so transferred arising subsequent to the effective date of such transfer, if (i) Developer has provided to City prior or subsequent written notice of such transfer and (ii) Transferee has agreed in writing to be subject to all of the provisions hereof applicable to the portion of the Campus so transferred by executing an Assignment and Assumption Agreement in the form of attached Exhibit “C,” which is incorporated by reference. Upon any transfer of any portion of the Campus and the express assumption of Developer’s obligations under this Agreement by such Transferee, City agrees to look solely to Transferee for compliance by such Transferee with the provisions of this Agreement as such provisions relate to the portion of the Campus acquired by such Transferee.
Any such Transferee must be entitled to the benefits of this Agreement as “Developer” hereunder and is subject to the obligations of this Agreement applicable to the parcel(s) transferred. A default by any Transferee only affects that portion of the Campus owned by such Transferee and does not cancel or diminish in any way Developer’s rights hereunder with respect to any portion of the Campus not owned by such Transferee. The Transferee is responsible for satisfying the good faith compliance requirements set forth in Section 8 below relating to the portion of the Campus owned by such Transferee, and any amendment to this Agreement between the City and a Transferee must only affect the portion of the Campus owned by such Transferee.

3.4 Resumption of Rights. If Transferee defaults with respect to any provision of this Agreement, Developer may, but is not obligated to, resume Transferee’s obligations upon written notification to City.

4. Development of the Campus. The following provisions, in addition to Applicable Rules, govern the development and use of the Campus. However, nothing affects any Existing Development on the Campus which is allowed to continue in its current location and under its current development standards.

4.1 Entitlement to Develop. The Developer is granted the vested right to develop the Project on the Campus subject to the Applicable Rules, the Project Approvals and any Future Approvals.

4.2 Permitted Uses, Density, Height and Dedication of Land for Public Purposes. The permitted and conditionally permitted uses of the Campus as well as the density or intensity of use, the maximum height and size of buildings and provisions for reservation or dedication of land for public purposes are set forth in the Project Approvals and Applicable Rules.

4.3 Development Standards. The Development Standards applicable to the Campus are set forth in the Project Approvals and Applicable Rules.

4.4 Building Regulations. Nothing in this Agreement precludes City from applying changes occurring from time to time in the Building Regulations, provided that such changes (a) are found by City to be necessary to the health or safety of the citizens of the City, (b) are generally applicable to all similar types of property in the City, and (c) do not prevent or unreasonably delay development of the Project in accordance with this Agreement.

4.5 Subsequent Rules. Subsequent Rules cannot be applied by City to any part of the Campus unless Developer gives City written notice of its election to have such Subsequent Rule applied to the Campus, in which case such Subsequent Rule is deemed to be an Applicable Rule.

4.6 Fees, Exactions, Mitigation Measures, Conditions, Reservations and Dedications.

4.6.1 All fees, exactions, mitigation measures, conditions, reservations and dedications of land for public purposes that are applicable to the Project are set forth in the Project Approvals, the Applicable Rules and this Agreement.

4.6.2 Except as otherwise provided in this Agreement, and specifically excluding fees set by entities not controlled by City that are collected by City, City can only charge and
impose those fees and exactions, including, without limitation, dedications and any other fee relating to development or the privilege of developing, which are in effect on a City-wide basis as of the Effective Date.

4.6.3 Developer must pay the impact fees pursuant to City Council Resolution Nos. 4443 and 4687.

4.6.4 This Section cannot be construed to limit the authority of City to charge normal and customary application, processing, and permit fees, including legal and environmental processing costs, for land use approvals, building permits and other similar permits, for Future Approvals, which fees are designed to reimburse City’s actual expenses attributable to such application, processing and permitting and are in force and effect on a City-wide basis at such time as applications for such approvals are filed with City.

4.6.5 Nexus/Reasonable Relationship Challenges. Developer consents to, and waives any rights it may have now or in the future to challenge the legal validity of, the conditions, requirements, policies or programs required by this Agreement or Applicable Rules including, without limitation, any claim that they constitute an abuse of the police power, violate substantive due process, deny equal protection of the laws, effect a taking of property without payment of just compensation, or impose an unlawful tax.

4.7 Use of Easements. Notwithstanding the provisions of the Applicable Rules, easements dedicated for vehicular and pedestrian use are permitted to include easements for underground drainage, water, sewer, gas, electricity, telephone, cable, environmental remediation and other utilities and facilities so long as they do not unreasonably interfere with pedestrian and/or vehicular use.

4.8 Timing of Development. In Pardee Construction Co. v. City of Camarillo (Pardee), 37 Cal.3d 465 (1984), the California Supreme Court held that the failure of the parties therein to provide for the timing or rate of development resulted in a later-adopted initiative restricting the rate of development to prevail against the parties’ agreement. City and Developer intend to avoid the result in Pardee by acknowledging and providing that Developer has the right, without obligation, to develop the Campus in such order and at such rate and times as Developer deems appropriate within the exercise of its subjective business judgment, subject to the Term of this Agreement.

In furtherance of the Parties’ intent, as set forth in this Section, no future amendment of any existing City ordinance or resolution, or future adoption of any ordinance, resolution or other action, that purports to limit the rate or timing of development over time or alter the sequencing of development phases, whether adopted or imposed by the City Council or through the initiative or referendum process, applies to the Campus. However, nothing in this Section must be construed to limit City’s right to enforce Developer’s obligation pursuant to this Agreement to provide all infrastructure required by the Project Approvals and this Agreement.

Notwithstanding the above, Developer must be required to build the on-site and off-site infrastructure required for the Project in accordance with the Project Milestones and Thresholds that are listed in Exhibit D, attached hereto and incorporated herein by reference.
4.9 **Moratorium.** No City-imposed moratorium or other limitation (whether relating to the rate, timing or sequencing of the development or construction of all or any part of the Campus, whether imposed by ordinance, initiative, resolution, policy, order or otherwise, and whether enacted by the City Council, an agency of City, the electorate, or otherwise) affecting parcel or subdivision maps (whether tentative, vesting tentative or final), building permits, occupancy certificates or other entitlements to use or service (including, without limitation, water and sewer) approved, issued or granted within City, or portions of City, applies to the Campus to the extent such moratorium or other limitation is in conflict with this Agreement. However, the provisions of this Section do not affect City’s compliance with moratoria or other limitations mandated by other governmental agencies or court-imposed moratoria or other limitations.

4.10 **Infrastructure.**

4.10.1 **Infrastructure Capacity.** Subject to Developer’s installation of infrastructure in accordance with the requirements of the Project Approvals, this Agreement, and any Future Approvals, City acknowledges that it will have sufficient capacity in its infrastructure, services and utility systems, including, without limitation, traffic circulation, storm drainage, flood control, electric service, sewer collection, sewer treatment, sanitation service and, except for reasons beyond City’s control, water supply, treatment, distribution and service, to accommodate the Project. To the extent that City renders such services or provides such utilities, City agrees that it will serve the Project and that there is no restriction on hookups or service for the Project except for reasons beyond City’s control.

4.10.2 **Infrastructure Phasing Flexibility.** Notwithstanding the provisions of any phasing requirements in the Project Approvals or any Future Approvals, Developer and City recognize that economic and market conditions may necessitate changing the order in which the infrastructure is constructed. Therefore, City and Developer agree that should it become necessary or desirable to develop any portion of the Project’s infrastructure in an order that differs from the order set forth in this Agreement, Developer and City will collaborate and City will permit any modification requested by Developer so long as the modification continues to ensure adequate infrastructure is available to serve that portion of the Project being developed and is in compliance with Section 4.12 of this Agreement.

4.10.3 **Infrastructure Completion.** No building permit, final inspection or certificate of occupancy will be unreasonably withheld, conditioned, or delayed by City if all infrastructure required to serve the portion of the Campus covered by the building permit, final inspection or certificate of occupancy is in place or is suitably guaranteed to be completed (by covenant, bond, letter of credit or otherwise) to the reasonable satisfaction of the City before completion of construction and all of the other relevant provisions of the Project Approvals and any Future Approvals are satisfied.

4.10.4 **Prevailing Wages.** In the event any infrastructure improvements are paid for in whole or in part out of public funds, as contemplated by Labor Code § 1720, Developer must pay prevailing wages for the construction of such improvements to the extent required by Applicable Law.
4.11 **Term.** The term of this Agreement is ten (10) years from the Effective Date (the “Term”). However, Developer or City is entitled to, by written notice to the other Party before the Agreement’s expiration, one (1) five (5)-year extension, provided that the requesting Party is not in material default of this Agreement at such time beyond any applicable period to cure provided for by Section 12 below. Before the expiration of such five (5)-year extension, the Parties may mutually agree to further extensions. In the event of litigation challenging this Agreement, the Term is automatically suspended for the duration of such litigation and resumes upon final disposition of such challenge and any appeal thereof upholding the validity of this Agreement. In the event that a referendum petition concerning this Agreement is duly filed in such a manner that the ordinance approving this Agreement is suspended, then the Term is deemed to commence upon City Council certification of the results of the referendum election approving this Agreement.

4.12 **Term of Map(s) and Other Project Approvals.** Pursuant to California Government Code §§ 66452.6(a) and 65863.9, the term of any subdivision or parcel map that has been or in the future may be processed on all or any portion of the Campus and the term of each of the Project Approvals will be extended for a period of time through the scheduled termination date of this Agreement as set forth in Section 4.11 above, including any extensions thereto pursuant to Section 4.11 above.

4.13 **Satisfaction of Mitigation Measures and Conditions.** In the event that any of the mitigation measures or conditions required of Developer are implemented by others, Developer is conclusively deemed to have satisfied such mitigation measures or conditions, consistent with CEQA. If any such mitigation measures or conditions are rejected by a governmental agency with jurisdiction, Developer may implement reasonably equivalent substitute mitigation, consistent with CEQA, to the City’s satisfaction, in lieu of the rejected mitigation measures or conditions. Such substitution is deemed to be a Minor Modification pursuant to the ESSCSP.

4.14 **In Lieu Credits.** The City must grant Developer in lieu credits, as appropriate, and as specified herein and for those matters set forth on attached Exhibit “E,” which is incorporated by reference.

5. **Developer Agreements.**

5.1 **General.** Developer must comply, or cause compliance, with: (i) this Agreement; (ii) the Project Approvals including, without limitation, all mitigation measures required by the determination made pursuant to CEQA; and (iii) all Future Approvals for which it is the applicant.

5.2 **Maintenance Obligations.** Developer must maintain all portions of the Campus visible from a public street and in its possession or control, including improvements thereon, in a clean, neat and orderly manner. Developer’s maintenance obligations survive any termination or expiration of this Agreement.

5.3 **Sales and Use Tax.**

5.3.1 In the event the contract price for any work on the Project is valued at ten million dollars ($10,000,000) or more, Developer agrees to report, on a State Board of Equalization Tax Return, any purchases of tangible personal property made in connection with the finishing of and/or installation of materials, or fixtures for the Project, when such purchases were made without
sales or use tax due. Developer must indicate the City as a registered job site location on the State Board of Equalization Tax Return. In such event, Developer must also obtain a permit or a sub-permit from the State Board of Equalization indicating the City as the registered job site location, in accordance with Revenue and Taxation Code § 7051.3 or State Board of Equalization Compliance Policy and Procedure Manual (Section 295.060).

5.3.2 Developer further agrees that if Developer retains contractors or subcontractors to perform a portion of work in the Project, and said contracts or subcontracts are valued at ten million dollars ($10,000,000) or more, said contracts or subcontracts must contain the provisions set forth in Section 5.3.1 above.

5.3.3 The Director of Finance of the City is authorized to relieve Developer, and Developer’s contractors and subcontractors, from the requirements set forth in this Section 5.3 upon proof to the reasonable satisfaction of the Director of Finance that Developer and/or its contractors or subcontractors have made good faith efforts to obtain said permit or sub-permits, but were denied the same by the State Board of Equalization.

5.4 All new development must have buildings designed to be energy efficient, at least fifteen percent (15%) above the requirements set forth in California Code of Regulations Title 24 in effect at the time that building plans are submitted.

6. City Agreements.

6.1 Expedited Processing. The City must process in an expedited manner all plan checking, excavation, grading, building, encroachment and street improvement permits, Certificates of Occupancy, utility connection authorizations, and other ministerial permits or approvals necessary, convenient or appropriate for the grading, excavation, construction, development, improvement, use and occupancy of the Project in accordance with City’s accelerated plan check process under the Applicable Rules. Without limiting the foregoing, if requested by Developer, City agrees to utilize private planners and plan checkers (upon Developer’s request and at Developer’s cost) and any other available means to expedite the processing of Project applications, including concurrent processing of such applications by various City departments.

6.2 Processing Cooperation and Assistance. To the extent permitted by law, City must reasonably cooperate with Developer in securing any and all entitlements, authorizations, permits or approvals which may be required by any other governmental or quasi-governmental entity in connection with the development of the Project or the Campus. Without limiting the foregoing, City must reasonably cooperate with the Developer in any dealings with federal, state and other local governmental and quasi-governmental entities concerning issues affecting the Campus. City must keep Developer fully informed with respect to its communications with such agencies which could impact the development of the Campus. City must not take any actions to encourage any other governmental or quasi-governmental entities from withholding any necessary approvals and any such contrary actions on the part of the City must be considered a breach of this Agreement by City.
6.3 Processing During Third Party Litigation. The filing of any third party lawsuit(s) against City or Developer relating to this Agreement, the Project Approvals, any Future Approvals or to other development issues affecting any portion of the Campus or the Project must not hinder, delay or stop the development, processing or construction of the Project, approval of applications for any Future Approvals, or issuance of ministerial permits or approvals, unless the third party obtains a court order preventing the activity. City must not stipulate to or cooperate in the issuance of any such order.

6.4 Reimbursement for City's Efforts on Behalf of Developer. To the extent that City, on behalf of Developer, attempts to enter into binding agreements with other entities in order to ensure the availability of certain permits and approvals or services necessary for development of the Project as described in this Agreement, Developer must reimburse City for all costs and expenses incurred in connection with seeking and entering into any such agreement. Any fees, assessments or other amounts payable by City pursuant to any such agreement must be borne by Developer except where Developer notified City in writing, before City entering into such agreement, that it does not desire for City to execute such agreement.

6.5 City's Efforts to Defend and/or Enforce Multi Agency Agreements. Except as limited by Section 19.1, Developer must defend and indemnify – the to the extent set forth in this Agreement – City in any challenge by any person to any such agreement, and must reimburse City for any costs and expenses incurred by City in enforcing any such agreement.

7. Traffic Improvements.

7.1 Nash Street.

7.1.1 At such time that the Nash Street connection is required under the terms of the Agreement, Developer must build the Nash Street extension consistent with the General Plan Secondary Arterial roadway classification and as shown on Vesting Map No. 71551.

7.1.2 The Nash Street extension must be completed before Phase II of Vesting Map No. 71551 is recorded or a certificate of occupancy being issued for any new development which would cause the Phase 1 Development trip cap of 89 a.m. peak hour, 225 p.m. peak hour trips, or 3,775 daily trips to be exceeded.

7.1.3 Developer will receive in lieu credit against City’s traffic impact fees for the actual cost of construction of the Nash Street extension. Developer must submit appropriate documentation to City to verify the construction costs.

7.1.4 When the Nash Street extension is complete, Developer must offer for dedication the street and public improvements associated with the street to City (collectively, “Nash Street Improvements”). The City will accept the dedication of the Nash Street improvements if it is constructed in accordance with City standards.

7.1.5 When City accepts the Nash Street extension and improvements, Developer will not be responsible for maintenance of the public street improvements including, without limitation, sidewalks, signs, roadways, street lights, and lighting fixtures. Public use of the Nash Street extension is not permitted until City accepts such dedication.
7.1.6 Developer agrees to cooperate with City in creating a landscaping and lighting assessment district to cover only the maintenance costs of the landscape and lighting portion of the Nash Street improvements and will not protest the formation of any such district. The costs of the assessment engineer and other direct set-up costs of the assessment district will be included in the assessment costs to be levied against the affected properties.

7.2 Continental Boulevard Public Access.

7.2.1 Developer must build the extension of the Continental Boulevard roadway located on Parcel 25 consistent with the General Plan Secondary Arterial roadway classification (as shown on Vesting Map No. 71551) before Phase II of Vesting Map No. 71551 is recorded. The Developer must build the extension of the Continental Boulevard roadway located on Parcel 21 consistent with the General Plan Collector roadway classification (as shown on Vesting Map No. 71551) before Phase III of Vesting Map No. 71551 is recorded.

7.2.2 Continental Boulevard, and the extension thereof, must remain a private roadway, except as specified in Sections 7.2.3 and 7.2.4 below. The private roadway may be fenced, and/or guarded and/or gated.

7.2.3 If at any time buildings along Continental Boulevard are sold, leased, or used by any third party (i) that is not an affiliate of Raytheon; or (ii) does not use or operate the buildings in furtherance of Raytheon’s business operations, Developer must provide a public access easement to City for this street. For purposes of this section, an affiliate includes a subsidiary or partner of Raytheon.

7.2.4 Notwithstanding Section 7.2.3, Developer may offer Continental Boulevard to City for dedication. The City will accept the dedication of the Continental Boulevard improvements if it is constructed in accordance with City standards. If City accepts Continental Boulevard and its improvements, Developer will not be responsible for maintenance of the public street improvements including, without limitation, sidewalks, signs, roadways, street lights, and lighting fixtures.

7.2.5 Developer agrees to cooperate with City in creating a landscaping and lighting assessment district to cover only the maintenance costs of the landscape and lighting portion of the Continental Boulevard improvements and will not protest the formation of any such district. The costs of the assessment engineer and other direct set-up costs of the assessment district will be included in the assessment costs to be levied against the affected properties.

7.2.6 Developer agrees to a 20-year irrevocable offer of dedication to the City of Parcel 26 of Vesting Map No. 71551. This dedication may be accepted by the City at such time the City permits circulation through the adjacent golf course and that portion of Continental Boulevard connecting Parcel 26 and El Segundo Boulevard is made accessible to the public.

7.3 El Segundo Boulevard Improvements.

7.3.1 Developer must complete the El Segundo Boulevard roadway improvements consistent with the General Plan Major Arterial classification and as shown on Vesting Map No. 71551, based on the following phasing criteria:
7.3.1.1 If either Parcel 15 or 16 of Vesting Map No. 71551 is developed, the required roadway improvements must be completed on the El Segundo Boulevard frontage of both Parcels 15 and 16 before City issues a certificate of occupancy for any new building in that area.

7.3.1.2 If Parcel 14 of Vesting Map No. 71551 is developed, the required roadway improvements must be completed on the El Segundo Boulevard frontage of Parcel 14 before City issues a certificate of occupancy for any new building in that area.

7.3.1.3 If Parcels 1, 2, 3, or 4 of Vesting Map No. 71551 are developed, then the required roadway improvements must be completed on the El Segundo Boulevard frontage for all parcels within the Specific Plan area with El Segundo Boulevard frontage before City issues a certificate of occupancy for any new building in such areas.

7.3.2 Developer is responsible for all construction costs relating to the El Segundo Boulevard roadway improvements, including the cost of roadway construction, retaining walls, pole relocation and Class 1 bicycle path (see Section 7.4), except as specified below.

7.3.2.1 Notwithstanding the above, Developer is not responsible for relocation of any infrastructure that is not directly on the El Segundo Boulevard frontage and located within the Campus. The SCE towers at the corner of El Segundo and Sepulveda Boulevards are specifically excluded from Developer’s responsibility under this Section 7.3.2.

7.3.2.2 Developer is entitled to receive in lieu credit against City’s traffic impact fees for the actual cost of construction of the El Segundo Boulevard improvements. Developer must submit documentation acceptable to City to verify the construction costs. No credit will be given for the value of the land area required for the El Segundo Boulevard widening.

7.3.2.3 Developer’s costs will be offset by any grants provided to City for such improvements by any outside agency. City must use its best efforts to seek any and all available grants.

7.3.3 As an alternative to construction, Developer may pay a portion of the required traffic mitigation fees as a lump sum. This lump sum would cover the costs of El Segundo Boulevard improvements located in the plan area within 275 feet east of the Sepulveda Boulevard intersection. This area includes three (3) utility poles Developer has identified as having significant relocation costs. This lump sum would be required before the first building permit for new development in the Campus is issued. The amount of the lump sum will be based on a revised estimate of the costs associated with improvements within the El Segundo Boulevard right-of-way where Developer would like City to proceed with improvements instead of the Developer.

7.4 El Segundo Boulevard Bicycle Path.

7.4.1 Developer must construct a Class 1 bicycle path on El Segundo Boulevard during the same period in which the El Segundo Boulevard Improvements discussed in Section 7.3 above are installed, subject to the following:
7.4.1.1 For lots with frontage on that portion of El Segundo Boulevard located east of the future extension of Continental Boulevard and west of the future extension of Nash Street, the bicycle path may be located within the required building setback areas as long as a five foot distance is maintained between the bicycle path and any building or structure.

7.4.1.2 In order to facilitate the 4th travel lane under the Green-Line light rail overpass, the El Segundo Boulevard bike path must be routed south of the overpass supports and through the Metro Station area. An easement must be provided over Parcel 14 of Vesting Map No. 71551 to allow this routing. No building setback modifications are required due to such rerouting as long as a five foot distance between the bicycle path and any building is maintained.

7.4.1.3 Developer is not responsible for the cost of relocation any infrastructure that is not directly on the El Segundo Boulevard frontage of the Campus, including without limitation, the SCE tower at the corner of El Segundo and Sepulveda Boulevards.

7.4.2 Developer is entitled to receive in lieu credit against City’s traffic impact fees for the actual cost of construction of the El Segundo Boulevard bicycle path. Developer must submit documentation acceptable to City to verify the construction costs. No credit will be given for the value of the land area under the El Segundo Boulevard bike path.

7.4.3 Developer’s costs will be offset by any grants provided to the City of El Segundo by any outside agency relating to the construction of the bicycle path along El Segundo Boulevard.

7.5 Nash Street Extension Bicycle Lane.

7.5.1 At such time as the Nash Street Extension must be completed pursuant to Section 7.1.2 above, Developer must construct a Class II bicycle lane in each direction of the Nash Street extension.

7.5.2 The Class II bicycle lane will be integrated into the Nash Street roadway.

7.5.3 Construction costs for the bicycle lane are considered to be part of the overall Nash Street roadway extension and are Developer’s responsibility.

7.5.4 The width of the Class II bicycle lanes are included within the overall Right of Way width of the Nash Street Extension. This is illustrated in the Vesting Map No. 71551 exhibit entitled “Typical Section: Secondary Arterial Street.” No additional public right-of-way will be required for the bicycle lane.

7.6 Green Line Station.

7.6.1 Developer must pay $75,000 towards the construction of bicycle parking facilities at or adjacent to the Metro Green Line El Segundo Station. The $75,000 payment must be made before City issues a certificate of occupancy for any building included in Phase II. Developer is entitled to receive in lieu credit against City’s traffic impact fees for this payment.
7.6.2 Developer must allow a pedestrian easement across one or a combination of Parcels 13, 14 and/or 24 of Vesting Map No. 71551 to allow direct pedestrian access to the Green Line station. The walkway must be completed before a certificate of occupancy is issued for any building on Parcel 13 or 14. The walkway must be paved and compliant with ADA requirements with a minimum width of five feet.

7.7 Coral Circle Connection. Developer agrees to provide City with a 20-year irrevocable offer of dedication of Parcels 20 and 22 of Vesting Map No. 71551. This dedication may be accepted by City at such time City enters agreements with adjacent landowners located at 363-365 Coral Circle and 401 Coral Circle to obtain public street access across their property for a roadway to connect Nash Street to Coral Circle. The offer of dedication will allow for fee simple ownership of Parcels 20 and 22 to be transferred to the owners of 363-365 Coral Circle and 401 Coral Circle, and a public street dedication for a portion of the two parcels to the City for a roadway consistent with the “Local Commercial Street” General Plan Circulation Element Street Classification.

7.8 Traffic Fee In Lieu Credits. Except as otherwise specified herein, Developer will be entitled to in lieu credits against the City’s traffic impact fees for all required traffic mitigation measures within the City of El Segundo’s jurisdiction that are constructed or paid by Developer. Developer is not entitled to any in lieu credits for mitigation measures outside of the City’s jurisdiction.

8. Utilities

8.1 City must maintain all City-owned public utilities located in public or private streets within the Campus. Any utilities located on private property must be the responsibility of Developer, or its successor in interest.

8.2 City is contemplating a capacity upgrade in the El Segundo sewer line.

8.2.1 Up to 2,142,457 gross square feet of development, the total amount of new development allowed by the Specific Plan, must be able to access sewer service in the El Segundo Boulevard sewer trunk line after completion of the sewer line upgrade provided that Developer contributes twenty-five percent (25%) up to a maximum amount of $375,000.00 toward completion of the sewer upgrade.

8.2.2 Developer must make its contribution at the time the City awards the sewer improvement project, but no later than December 31, 2018, for Developer to obtain access to the El Segundo Boulevard sewer trunk line.

8.2.3 Upon payment, City must reserve a portion of the available capacity in the existing fifteen inch (15") line up to a net increase of 30,212 gallons per day for Developer and Developer is entitled to connect to the existing line through a temporary sewer connection. Developer is entitled to make a permanent connection to the upgraded line once the sewer capacity upgrade project is completed.

9.1 The Specific Plan provides for 7.54 acres of land to be used for Open Space and Recreational purposes. This land must remain private and only available to Raytheon employees. However, should Developer sell more than twenty percent (20%) of ESSCSP Campus Area (i.e., at least 28.44 acres), to a user other than Raytheon or a Raytheon affiliate, Developer must provide non-Raytheon or Raytheon affiliated employees within the ESSCSP area with permanent access to the 7.54-acre recreational area within the Campus. The access must be formalized through agreements between Raytheon and the purchaser(s) of the property.

9.2 Within 30 days of approval of a land transfer of the recreational/open space area to an alternative parcel and before a building permit may be issued on Parcel 11, the Developer must record a 20-year irrevocable offer of dedication of the 7.54 acre recreational/open space area to the City of El Segundo, in a form approved by the City Attorney, for future potential park purposes if located on any of the lots (Parcels 1, 2, 3, 4, 7, 8, 13 or 14 of Vesting Map No. 71551) and outside the Raytheon security fenced perimeter.


10.1 Six Annual Payments. The Developer must make one annual payment of $500,000 and five subsequent annual payments of $700,000 each to the City. Payments will start on March 31, 2016 and occur annually on March 31st, with the final payment due on March 31, 2021. These payments will be deposited to the City’s General Fund and may be used for any general purpose identified by the City Council in its sole discretion. The total amount of the six payments is $4,000,000.

10.2 Payment in Year 10. If the Nash Street extension, identified in Section 7.1, is not completed within 10 years of the effective date of the City Council Ordinance approving the Specific Plan and related entitlements, then the Developer is required to make a $5,000,000 payment not later than the anniversary date that the Ordinance became effective (e.g., if the Ordinance became effective December 1, 2015, then payment would be due not later than December 2, 2025). This payment will be deposited to the City’s General Fund and may be used for any general purpose identified by the City Council in its sole discretion.

10.3 Building Permit Fee. Before building permits are issued for any new development (not existing at time of project approval) in the project area, the Developer must pay a $0.50 per gross square-foot fee. All revenue from this fee will be deposited to the City’s General Fund and may be used for any general purpose identified by the City Council in its sole discretion.

11. Uniform Codes and Standard Specifications

11.1 Nothing in this Agreement prevents City from applying Uniform Codes to the Project provided that the provisions of any such Uniform Code:
11.1.1 apply to the Project only to the extent that such code is in effect on a City wide basis;

11.1.2 with respect to those portions of any such Uniform Code that have been adopted by City without amendment, be interpreted and applied in a manner consistent with the interpretation and application of such code pursuant to California Law.

11.2 Nothing in this Agreement prevents City from applying to the Project “standard specifications” for public improvements (e.g., streets, storm drainage, parking lot standards, driveway widths) as the same may be adopted or amended from time to time by City, provided that the provisions of any such standards and specifications apply only to the extent they are in effect on a Citywide basis and do not conflict with standards contained in the Specific Plan. As they concern the Project or the Project Site, to the extent any City Law or other City ordinance, regulation, standard, or specification conflicts with the Specific Plan, the Specific Plan controls unless otherwise provided herein.

11.3 State and Federal Law. As provided in Government Code § 65869.5, in the event that state or federal laws or regulations, enacted after the Vesting Date (“Changes in the Law”) prevent or preclude compliance with one or more provisions of this Agreement, such provisions of the Agreement will be, by operation of law, modified or suspended, or performance thereof delayed, as and to the extent necessary to comply with such Changes in the Law. In the event any state or federal resources agency (i.e., California Department of Fish and Game, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, Regional Water Quality Control Board/State Water Resources Control Board), in connection with its final issuance of a permit or certification for all or a portion of the Project, imposes requirements (“Permitting Requirements”) that require modifications to the Project, then the parties will work together in good faith to incorporate such changes into the Project; provided, however, that if Developer appeals or challenges any such Permit Requirements, then the parties may defer such changes until the completion of such appeal or challenge.

12. Demonstration of Good Faith Compliance

12.1 Review of Compliance. In accordance with Government Code § 65865.1, this Section 12 and the Applicable Rules, once each year, on or before each anniversary of the Effective Date (“Periodic Review”), the Director will review the extent of Developer’s good faith substantial compliance with the terms and provisions of this Agreement as well as the performance by the City of its obligations under this Agreement.

12.2 Good Faith Compliance. During each Periodic Review, Developer must demonstrate that, during the preceding twelve (12) month period, that it has been in good faith compliance with this Agreement. For purposes of this Agreement, the phrase “good faith compliance” means that Developer has demonstrated that it acted in a commercially reasonable manner (taking into account the circumstances which then exist) and in good faith in and has substantially complied with Developer’s material obligations under this Agreement.

12.3 City Report - Information to be Provided to Developer. At least fourteen (14) days before the annual anniversary of the Effective Date the City must deliver to Developer a copy of
all staff reports prepared in connection with a Periodic Review, any prior staff reports generated during the review period, written comments from the public and, to the extent practical, all related exhibits concerning such Periodic Review ("City Report").

12.4 **Developer’s Report.** No later than the annual anniversary of the Effective Date, Developer must submit a written status report to the Director addressing the good faith compliance issue and any issues raised by the City Report provided to Developer in accordance with Section 12.3 above.

12.5 **Notice Of Non-Compliance; Cure Rights.** If, after reviewing the Developer’s Report, the Director reasonably concludes on the basis of substantial evidence that as to any parcel or parcels comprising the Campus, Developer has not demonstrated that it is in good faith compliance with this Agreement the Director may issue and deliver to Developer a written Notice of Violation as set forth in Section 14 below.

12.6 **Public Notice of Finding.** Any appeal of the Director’s determination (including any appeal by Developer) must be filed within twenty (20) days following such decision. Filing such an appeal tolls the cure period specified in the Notice of Violation. Notwithstanding Section 17, an appeal regarding the Notice of Violation must be heard directly by the City Council at a duly-noticed public hearing and the City Council must issue a final decision. Not in limitation of the forgoing, Developer retains the right to challenge City’s issuance of any final decision pursuant to Code of Civil Procedure § 1094.5 without complying with the procedures set forth in Section 13.4 below.

12.7 **Failure of Periodic Review.** The City’s failure to review, at least annually, compliance by Developer with the terms and conditions of this Agreement does not constitute nor can it be asserted by any Party as a breach by any other Party of this Agreement. If the City fails to provide the City Report by the Effective Date, Developer will be deemed to be in good faith compliance with this Agreement.

13. **Excusable Delays.** Performance by any Party of its obligations in this Agreement is excused during any period of "Excusable Delay," as defined, provided that the Party claiming the delay gives notice of the delay to the other Party as soon as reasonably possible after the same has been ascertained. For purposes hereof, Excusable Delay means delay that directly affects, and is beyond the reasonable control of, the Party claiming the delay, including without limitation: (a) civil commotion; (b) riot; (c) strike, picketing or other labor dispute; (d) shortage of materials or supplies; (e) damage to work in progress or delays by reason of fire, flood, including flood due to rains, earthquake, windstorm, or other casualty; (f) reasonably unforeseeable delay caused by a reasonably unforeseeable restriction imposed or mandated by a governmental entity other than City; (g) litigation brought by a third party attacking the validity of a Project Approval, a Future Approval or any other action necessary for development of the Campus; (h) delays caused by any default by the other Party; or (i) delays due to the presence or remediation of hazardous materials. The Term of this Agreement, including any extensions, will automatically be extended by any period of Excusable Delay.

14. **Default Provisions.**
14.1 **Default.** Either Party to this Agreement will have breached this Agreement if it materially breaches any of the provisions of this Agreement and the same is not cured within the time set forth in a written notice of violation (the “Notice of Violation”) from the non-breaching Party to the breaching Party, which period of time is not less than ten (10) days following receipt of written notice from the non-breaching Party for monetary defaults, and not less than sixty (60) days following receipt of written notice from the non-breaching Party for non-monetary defaults from the date that the notice is deemed received, provided if the breaching Party cannot reasonably cure a non-monetary default within the time set forth in the notice, then the breaching Party will not be in default if it commences to cure the default within such time limit and diligently effects such cure thereafter. If City determines that a default may have occurred, City may choose to terminate this Agreement in which case it must give written notice to Developer of its intention to terminate and comply with the notice and public hearing requirements of Government Code §§ 65867 and 65868. At the time and place set for the hearing on termination, Developer will be given an opportunity to be heard. If the City Council finds based upon the evidence that Developer is in breach of this Agreement, the City Council may modify or terminate this Agreement; provided, however, if Developer initiates a resolution of dispute in accordance with the provisions of Section 14.4 below within sixty (60) days following the City Council’s determination that Developer is in breach of this Agreement, the City Council’s decision to modify or terminate this Agreement is stayed until the issue has been resolved through informal procedures, mediation, or court proceedings.

14.2 **Content of Notice of Violation.** Every Notice of Violation must state with specificity that it is given pursuant to this Section of the Agreement, the nature of the alleged breach, (including references to the pertinent provisions of this Agreement), the portion of the Campus involved, and the manner in which the breach may be satisfactorily cured. Notice must be given in accordance with Section 23 hereof.

14.3 **Remedies for Breach.** The Parties agree that the remedies for breach of this Agreement are limited to the remedies expressly set forth in this subsection. The remedies for breach of this Agreement by City or Developer are limited to injunctive relief and/or specific performance.

14.4 **Resolution of Disputes.** City and Developer agree to attempt to settle any claim, dispute or controversy arising from this Agreement through consultation and negotiation in good faith and in a spirit of mutual cooperation. If those attempts fail, the dispute may be mediated by a mediator chosen jointly by City and Developer within thirty (30) days after notice by one of the parties demanding non-binding mediation. Neither party may unreasonably withhold consent to the selection of a mediator, and City and Developer will share the cost of the mediation equally. The parties may agree to engage in some other form of non-binding alternate dispute resolution (“ADR”) procedure in lieu of mediation. Any dispute that cannot be resolved between the parties through negotiation or mediation within two months after the date of the initial demand for non-binding mediation may then be submitted to a court of competent jurisdiction in the County of Los Angeles, California.

14.5 **Attorneys Fees and Costs.** Each party to this Agreement agrees to waive any entitlement of attorneys’ fees and costs incurred with respect to any dispute arising from this
Agreement. The parties will each bear their own attorneys' fees and costs in the event of any dispute.

15. **Mortgagee Protection.** This Agreement does not prevent or limit the Developer, in any manner, at Developer's sole discretion, from encumbering the Campus or any portion thereof or any improvements thereon by any mortgage, deed of trust or other security device. City acknowledges that the lender(s) providing such financing ("Mortgagee") may require certain Agreement interpretations and agrees, upon request, from time to time, to meet with Developer and representatives of such lender(s) to provide within a reasonable time period City's response to such requested interpretations. City will not unreasonably withhold its consent to any such requested interpretation, provided that such interpretation is consistent with the intent and purposes of this Agreement. Any Mortgagee of a mortgage or a beneficiary of a deed of trust or any successor or assign thereof, including without limitation the purchaser at a judicial or non-judicial foreclosure sale or a person or entity who obtains title by deed-in-lieu of foreclosure on the Campus must be entitled to the following rights and privileges:

15.1 **Mortgage Not Rendered Invalid.** Neither entering into this Agreement nor a breach of this Agreement will defeat, render invalid, diminish, or impair the priority of the lien of any mortgage or deed of trust on the Campus made in good faith and for value. No Mortgagee has an obligation or duty under this Agreement to perform Developer's obligations, or to guarantee such performance, before taking title to all or a portion of the Campus.

15.2 **Request for Notice to Mortgagee.** The Mortgagee of any mortgage or deed of trust encumbering the Campus, or any part thereof, who has submitted a request in writing to the City in the manner specified herein for giving notices, is entitled to receive a copy of any Notice of Violation delivered to the Developer.

15.3 **Mortgagee's Time to Cure.** City must provide a copy of any Notice of Violation to the Mortgagee within ten (10) days of sending the Notice of Violation to Developer. The Mortgagee has the right, but not the obligation, to cure the default for a period of sixty (60) days after receipt of such Notice of Violation or such longer period of time as may be specified in the Notice. Notwithstanding the foregoing, if such default is a default which can only be remedied by such Mortgagee obtaining possession of a Campus, or any portion thereof, and such Mortgagee seeks to obtain possession, such Mortgagee has until sixty (60) days after the date of obtaining such possession to cure or, if such default cannot reasonably be cured within such period, to commence to cure such default, provided that such default is cured no later than one (1) year after Mortgagee obtains such possession.

15.4 **Cure Rights.** Any Mortgagee who takes title to all of the Campus, or any part thereof, pursuant to foreclosure of the mortgage or deed of trust, or a deed in lieu of foreclosure, will succeed to the rights and obligations of Developer under this Agreement as to the Campus or portion thereof so acquired; provided, however, in no event is such Mortgagee liable for any defaults or monetary obligations of Developer arising before acquisition of title to the Campus by such Mortgagee, except that any such Mortgagee is not entitled to a building permit or occupancy certificate until all delinquent and current fees and other monetary or non-monetary obligations due under this Agreement for the Campus, or portion thereof acquired by such Mortgagee, have been satisfied.
15.5 **Bankruptcy.** If any Mortgagee is prohibited from commencing or prosecuting foreclosure or other appropriate proceedings in the nature of foreclosure by any process or injunction issued by any court or by reason of any action by any court having jurisdiction of any bankruptcy or insolvency proceedings involving Developer, the times specified in Section 14.3 above will be extended for the period of the prohibition, except that any such extension cannot extend the Term of this Agreement.

15.6 **Disaffirmation.** If this Agreement is terminated as to any portion of the Campus by reason of (i) any default or (ii) as a result of a bankruptcy proceeding, this Agreement is disaffirmed by a receiver, liquidator, or trustee for Developer or its property, City, if requested by any Mortgagee, will negotiate in good faith with such Mortgagee for a new development agreement for the Project as to such portion of the Campus with the most senior Mortgagee requesting such new agreement. This Agreement does not require any Mortgagee or the City to enter into a new development agreement pursuant to this Section.

16. **Estopell Certificate.** At any time and from time to time, Developer may deliver written notice to City and City may deliver written notice to Developer requesting that such Party certify in writing that, to the knowledge of the certifying Party: (i) this Agreement is in full force and effect and a binding obligation of the Parties; (ii) this Agreement has not been amended, or if amended, the identity of each amendment; and (iii) the requesting Party is not in breach of this Agreement, or if in breach, a description of each such breach. The Party receiving such a request must execute and return the certificate within thirty (30) days following receipt of the notice. The failure of City to deliver such a written notice within such time constitutes a conclusive presumption against City that, except as may be represented by Developer, this Agreement is in full force and effect without modification, and that there are no uncured defaults in the performance of the Developer. The Director is authorized to execute, on behalf of City, any Estoppel Certificate requested by Developer. City acknowledges that a certificate may be relied upon by successors in interest to Developer who requested the certificate and by holders of record of deeds of trust on the portion of the Campus in which that Developer has a legal interest.

17. **Administration of Agreement.**

17.1 **Appeal of Determinations.** Any decision by City staff concerning the interpretation or administration of this Agreement or development of the Campus in accordance herewith may be appealed by Developer to the Planning Commission, and thereafter, if necessary, to the City Council pursuant to the El Segundo Municipal Code. Developer cannot seek judicial review of any staff decision without first having exhausted its remedies pursuant to this Agreement. Final determinations by the City Council are subject to judicial review subject to the restrictions and limitations of California law.

17.2 **Operating Memoranda.** The provisions of this Agreement require a close degree of cooperation between City and Developer. During the Term of this Agreement, clarifications to this Agreement and the Applicable Rules may be appropriate with respect to the details of performance of City and Developer. If and when, from time to time, during the Term of this Agreement, City and Developer agree that such clarifications are necessary or appropriate, they will effectuate such clarification through a memoranda approved in writing by City and Developer (the "Operating Memoranda"), which, after execution, will be attached hereto and become part of this Agreement.
and the same may be further clarified from time to time as necessary with future written approval by City and Developer. Operating Memoranda are not intended to and do not constitute an amendment to this Agreement but are mere ministerial clarifications, therefore public notices and hearings are not required. The City Attorney is authorized, upon consultation with, and approval of, the Developer, to determine whether a requested clarification may be effectuated pursuant to this Section or whether the requested clarification is of such character to constitute an amendment hereof which requires compliance with the provisions of Section 18 below. The authority to enter into such Operating Memoranda is hereby delegated to the Director, and the Director is hereby authorized to execute any Operating Memoranda hereunder without further City Council action.

17.3 Certificate of Performance. Upon the completion of the Project, or the completion of development of any parcel within the Project, or upon completion of performance of this Agreement or its earlier revocation and termination, City must provide Developer, upon Developer’s request, with a statement (“Certificate of Performance”) evidencing said completion or revocation and the release of Developer from further obligations hereunder, except for any ongoing obligations hereunder. The Certificate of Performance must be signed by the appropriate agents of Developer and City and be recorded in the official records of Los Angeles County, California. Such Certificate of Performance is not a notice of completion as referred to in Civil Code § 3093.

18. Amendment or Termination by Mutual Consent. Except as otherwise set forth herein, this Agreement may only be amended or terminated, in whole or in part, by mutual consent of City and Developer, and upon compliance with the provisions of Government Code §§ 65867 and 65867.5.


19.1 Indemnification. Developer agrees to indemnify and hold the City harmless from and against any claim, action, damages, costs (including, without limitation, attorney’s fees), injuries, or liability, arising from the City’s approval of Project, this Agreement, Developer’s performance of this Agreement, and all procedures with approving this Agreement (collectively, “Discretionary Approvals”), except to the extent such is a result of the City’s sole negligence or intentional misconduct. Should the City be named in any suit, or should any claim be brought against it by suit or otherwise, whether the same be groundless or not, arising out of the Discretionary Approvals, Developer agrees to defend the City (at the City’s request and with counsel satisfactory to the City) and will indemnify the City for any judgment rendered against it or any sums paid out in settlement or otherwise, except to the extent such action is a result of the City’s sole negligence or intentional misconduct. For purposes of this Section “the City” includes the City of El Segundo’s elected officials, appointed officials, officers, and employees.

19.2 Defense of Agreement. If City accepts Developer’s indemnification and defense as provided in Section 19.1 above, City agrees to and must timely take all actions which are necessary or required to uphold the validity and enforceability of this Agreement, the Discretionary Approvals, Project Approvals, Development Standards and the Applicable Rules. This Section 19 will survive the termination of this Agreement.

20.1 Third Party Challenges. In the event of any administrative, legal or equitable action or other proceeding instituted by any person or entity not a party to the Agreement challenging the validity of any provision of this Agreement, challenging any Approval, or challenging the sufficiency of any environmental review of either this Agreement or any Approval under CEQA (each a “Third Party Challenge”), each party must cooperate in the defense of such Third Party Challenge, in accordance with this Section. Developer agrees to pay City's costs of defending a Third Party Challenge, including all court costs and reasonable attorney’s fees expended by City (including the time and cost of the City Attorney) in defense of any Third Party Challenge, as well as the time of City's staff spent in connection with such defense. Developer may select its own legal counsel to represent Developer’s interests in any Third Party Challenge at Developer’s sole cost and expense. City agrees that it will not enter into a settlement agreement to any Third Party Challenge without Developer's written consent. Developer’s obligation to pay City's costs in the defense of a Third Party Challenge does not extend to those costs incurred on appeal unless otherwise authorized by Developer in writing.

20.2 Third Party Challenges Related to the Applicability City Laws. The provisions of this Section will apply only in the event of a legal or equitable action or other proceeding, before a court of competent jurisdiction, instituted by any person or entity not a party to the Agreement challenging the applicability to the Project or Project Site of a conflicting City Law (a “Third Party Enforcement Action”):

20.2.1 In the event of a Third Party Enforcement Action, City must (i) promptly notify Developer of such action or proceeding, and (ii) stipulate to Developer’s intervention as a party to such action or proceeding unless Developer has already been named as a respondent or real party in interest to such action or proceeding. In no event will City take any action that would frustrate, hinder, or otherwise complicate Developer’s efforts to intervene, join or otherwise participate as a party to any Third Party Enforcement Action. As requested by Developer, City must use its best efforts to ensure that Developer is permitted to intervene, join or otherwise participate as a party to any Third Party Enforcement Action. If, for any reason, Developer is not permitted to intervene, join or otherwise participate as a party to any Third Party Enforcement Action, the parties to this Agreement agree to cooperate, to the maximum extent permitted by law, in the defense of such action or proceeding. For purposes of this Section, the required cooperation between the parties includes, without limitation, developing litigation strategies, preparing litigation briefs and other related documents, conferring on all aspects of the litigation, developing settlement strategies, and, to the extent permitted by law, jointly making significant decisions related to the relevant litigation, throughout the course thereof.

20.2.2 City's costs of defending any Third Party Enforcement Action, including all court costs, and reasonable attorney’s fees expended by City (including the time and cost of the City Attorney) in defense of any Third Party Enforcement Action, as well as the time of City's staff spent in connection with such defense (the “Enforcement Action Defense Costs”), will be paid in accordance with this Agreement. Notwithstanding the forgoing, in no event will the Enforcement Action Defense Costs extend to, nor will Developer or the Project be obligated to pay, any costs incurred on appeal unless otherwise authorized by Developer in writing;

20.2.3 City must not enter into a settlement agreement or take any other action to resolve any Third Party Enforcement Action without Developer’s written consent. City cannot,
without Developer’s written consent, take any action that would frustrate, hinder or otherwise prevent Developer’s efforts to settle or otherwise resolve any Third Party Enforcement Action.

20.2.4 Provided that City complies with this Section and provided that Developer is a party to the relevant Third Party Enforcement Action, Developer agrees to be bound by any final judgment (i.e., following all available appeals) arising out of a Third Party Enforcement Action and further agrees that no default under this Agreement will arise if such final judgment requires City to apply to the Project or Project Site a City Law that conflicts with Applicable Rules or this Agreement.

21. **Time of Essence.** Time is of the essence for each provision of this Agreement of which time is an element.

22. **Effective Date.** This Agreement becomes operative on the Effective Date.

23. **Notices.** Any notice that a party is required or may desire to give the other must be in writing and may be sent by: i) personal delivery; or ii) by deposit in the United States mail, postage paid, registered or certified mail, return receipt requested; or iii) by overnight delivery using a nationally recognized overnight courier, providing proof of delivery; or iv) by facsimile or electronic delivery, evidenced by confirmed receipt, addressed as follows (subject to the right of a party to designate a different address for itself by notice similarly given):

If to City:

City of El Segundo  
350 Main Street  
El Segundo, California 90245  
Attention: City Manager  
Phone: 310 524-2301  
Fax: 310 322-7137  
E-Mail: g carc oner@elsegundo.org

With a Copy to:

City of El Segundo  
350 Main Street  
El Segundo, California 90245  
Attention: Director of Planning and Building Safety  
Phone: 310 524-2346  
Fax: 310 322-4167  
E-mail: s lee@elsegundo.org

With a Copy to:

City of El Segundo  
350 Main Street  
El Segundo, California 90245  
Attention: Planning Manager  
Phone: 310 524-2340  
Fax: 310 322-4167  
Email: kchristensen@elsegundo.org
With a Copy to:  
Hensley Law Group  
2600 W. Olive Avenue, Suite 500  
Burbank, California 91505  
Attention: Mark D. Hensley, Esq.  
Phone: 818/333-5120  
Fax: 818/333-5121  
E-Mail: mhensley@hensleylawgroup.com

If to Developer:  
Raytheon Company  
2000 El Segundo Boulevard  
Mail Station S158  
El Segundo, California 90245  
Attention: Director of Facilities and Real Estate  
Phone: 310/647-8880  
Fax: 310/647-9348  
E-Mail: scott_pozza@raytheon.com

With a Copy to:  
Raytheon Company  
2000 El Segundo Boulevard  
Mail Station S175  
El Segundo, California 90245  
Attention: Senior Manager of Real Estate  
Phone: 310/647-2567  
Fax: 310/647-9348  
E-Mail: aadams1@raytheon.com

With a Copy to:  
Raytheon Company  
870 Winter Street  
Waltham, MA 02451  
Attention: Real Estate Department  
Phone: 781/522-3062  
Fax: 781/522-6465  
Email: jerry_a_cellucci@raytheon.com

Any notice given by mail is deemed to have been given as of the date of delivery (whether accepted or refused) established by United States Post Office, return receipt, or the overnight carrier’s proof of delivery, as the case may be. Notices given in any other manner are effective only if and when received by the party to be notified between the hours of 8:00 a.m. and 5:00 p.m., local time of the recipient, of any business day with delivery made after such hours deemed received the following business day. A party’s address may be changed by written notice to the other party effective upon actual receipt of such notice. After a transfer of all or a portion of the Campus pursuant to Sections 3.2 and 3.3, Developer must be copied on all correspondence whether by City or Transferee relating to such transferred property.
24. **Entire Agreement.** This Agreement contains the entire agreement between the Parties regarding the subject matter hereof, and supersedes in its entirety all prior agreements or understandings, oral or written. This Agreement cannot be amended, except as expressly provided herein.

25. **Waiver.** No waiver of any provision of this Agreement constitutes a waiver of any other provision, whether or not similar; nor must any such waiver constitute a continuing or subsequent waiver of the same provision. No waiver is binding, unless it is executed in writing by a duly authorized representative of the Party against whom enforcement of the waiver is sought.

26. **Ambiguities or Uncertainties.** The parties hereto have mutually negotiated the terms and conditions of this Development Agreement and this has resulted in a product of the joint drafting efforts of both parties. Neither party is solely or independently responsible for the preparation or form of this Agreement. Therefore, any ambiguities or uncertainties are not to be construed against or in favor of either party.

27. **Supersession of Subsequent Laws of Judicial Action.** The provisions of this Agreement must, to the extent feasible, be modified or suspended as may be necessary to comply with any new law or decision issued by a court of competent jurisdiction, enacted or made after the effective date which prevents or precludes compliance with one or more provisions of this Agreement. Immediately after enactment of any such new law, or issuance of such decision, the parties must meet and confer in good faith to determine the feasibility of any such modification or suspension based on the effect such modification or suspension would have on the purposes and intent of this Agreement.

28. **Severability.** If any provision of this Agreement is determined by a court of competent jurisdiction to be invalid or unenforceable, the remainder of this Agreement is effective to the extent the remaining provisions are not rendered impractical to perform, taking into consideration the purposes of this Agreement.

29. **Relationship of the Parties.** Each Party acknowledges that, in entering into and performing under this Agreement, it is acting as an independent entity and not as an agent of any other Party in any respect. Nothing contained herein or in any document executed in connection herewith must be construed as creating the relationship of partners, joint ventures or any other association of any kind or nature between City and Developer, jointly or severally.

30. **No Third Party Beneficiaries.** This Agreement is made and entered into for the sole benefit of the Parties and their successors in interest. No other person or party must have any right of action based upon any provision of this Agreement.

31. **Recordation of Agreement and Amendments.** This Agreement and any amendment thereof must be recorded with the County Recorder of the County of Los Angeles by the City Clerk of City.

32. **Cooperation Between City and Developer.** City and Developer will execute and deliver to the other all such other and further instruments and documents as may be reasonably necessary to carry out the purposes of this Agreement. Upon satisfactory performance by Developer, and subject to the continuing cooperation of the Developer, City will commence and in a timely manner
proceed to complete all steps necessary for the implementation of this Agreement and development of the Project or Campus in accordance with the terms of this Agreement.

33. **Rules of Construction.** The captions and headings of the various sections and subsections of this Agreement are for convenience of reference only, and they do not constitute a part of this Agreement for any other purpose or affect interpretation of the Agreement. Should any provision of this Agreement be found to be in conflict with any provision of the Applicable Rules or the Project Approvals or any Future Approvals, the provisions of this Agreement control.

34. **Governing Law and Venue.** This Agreement is made, entered into, and executed in the County of Los Angeles, California, and the laws of the State of California govern its interpretation and enforcement. Any action, suit or proceeding related to, or arising from, this Agreement must be filed in the appropriate court having jurisdiction in the County of Los Angeles.

35. **Counterparts.** This Agreement may be executed in multiple counterparts, each of which must be deemed an original, but all of which constitute one and the same instrument.

36. **Weekend/Holiday Dates.** Whenever any determination is to be made or action to be taken on a date specified in this Agreement, if such date falls upon a Saturday, Sunday or other holiday specified in Government Code § 6700, including the entire day on Good Friday, the date for such determination or action must be extended to the first business day immediately thereafter.

37. **Not a Public Dedication.** Except as otherwise expressly provided herein, nothing herein contained is a gift or dedication of the Campus, or of the Project, or any portion thereof, to the general public, for the general public, or for any public use or purpose whatsoever, it being the intention and understanding of the Parties that this Agreement be strictly limited to and for the purposes herein expressed for the development of the Project as private property. Developer has the right to prevent or prohibit the use of the Campus, or the Project, or any portion thereof, including common areas and buildings and improvements located thereon, by any person for any purpose which is not consistent with the development of the Project. Any portion of the Campus conveyed to the City by the Developer as provided herein can be held and used by the City only for the purposes contemplated herein or otherwise provided in such conveyance, and the City will not take or permit to be taken (if within the power or authority of the City) any action or activity with respect to such portion of the Campus that would deprive the Developer of the material benefits of this Agreement, or would in any manner interfere with the development of the Project as contemplated by this Agreement.

38. **Releases.** City agrees that upon written request of Developer and payment of all fees and performance of the requirements and conditions required by Developer by this Agreement, the City must execute and deliver to Developer appropriate release(s) of further obligations imposed by this Agreement in form and substance acceptable to the Los Angeles County Recorder’s Office or as otherwise may be necessary to effect the release.
39. Consent. Where the consent or approval of City or Developer is required or necessary under this Agreement, the consent or approval will not be unreasonably withheld, delayed or conditioned.

IN WITNESS WHEREOF, Developer and City of El Segundo have executed this Development Agreement on the date first above written.

CITY:

CITY OF EL SEGUNDO, a municipal corporation

By: _______________, Mayor

ATTEST:

__________________________
Tracy Weaver,
City Clerk

APPROVED AS TO FORM:
MARK D. HENSLEY, City Attorney

By: _______________________
   Karl H. Berger, Assistant City Attorney

DEVELOPER:

RAYTHEON COMPANY

By: _______________________
   Its: _______________________

27
EXHIBIT A

CAMPUS DESCRIPTION

THAT PORTION OF SECTION 18, TOWNSHIP 3 SOUTH, RANGE 14 WEST, IN THE RANCHO SAUSAL REDONDO, IN THE CITY OF EL SEGUNDO, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS SHOWN ON THE MAP FILED IN CASE NO. 11629, SUPERIOR COURT OF SAID COUNTY ON JUNE 21, 1890, IN THE OFFICE OF THE COUNTY CLERK OF SAID COUNTY, A COPY OF SAID MAP APPEARING IN THE FILES OF THE COUNTY SURVEYOR OF SAID COUNTY AS CLERK’S FILED MAP NO. 218, BOUNDED AS FOLLOWS:

BOUNDED ON THE NORTH BY THE NORTH LINE OF SAID SECTION 18; BOUNDED ON THE EAST BY THE WESTERLY LINE AND THE NORTHERLY PROLONGATION THEREOF OF TRACT NO. 26556, AS SHOWN ON MAP RECORDED IN BOOK 675 PAGES 93 TO 94 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY; BOUNDED ON THE SOUTHEAST BY THE NORTHWESTERLY LINE OF THE 80 FOOT STRIP OF LAND DESCRIBED IN THE DEED TO PACIFIC ELECTRIC RAILWAY CO., RECORDED MAY 27, 1913 AS INSTRUMENT NO. 210 IN BOOK 5750 PAGE 43 OF DEEDS, RECORDS OF SAID COUNTY AND BOUNDED ON THE SOUTHWEST BY THE NORTHEASTERLY LINE OF THE LAND DESCRIBED AS PARCEL 2 IN THE DEED TO SOUTHERN CALIFORNIA EDISON COMPANY, RECORDED MARCH 6, 1930 AS INSTRUMENT NO. 535 IN BOOK 9840 PAGE 33, OFFICIAL RECORDS OF SAID COUNTY.

EXCEPT THEREFROM, ALL OIL, GAS AND OTHER HYDROCARBONS, GEOTHERMAL RESOURCES AS DEFINED IN SECTION 6903 OF THE CALIFORNIA PUBLIC RESOURCES CODE AND ALL OTHER MINERALS, WHETHER SIMILAR TO THOSE HEREIN SPECIFIED OR NOT, WITHIN OR THAT MAY BE PRODUCED FROM THE PROPERTY BELOW A DEPTH OF FIVE HUNDRED (500) FEET, AS RESERVED BY DEED EXECUTED BY CHEVRON U.S.A. INC., A CORPORATION, RECORDED ON NOVEMBER 28, 1978 AS INSTRUMENT NO. 78-1317577, WHICH ALSO RECITES, “PROVIDED, HOWEVER, THAT ALL RIGHTS AND INTEREST IN THE SURFACE OF THE PROPERTY AND THE LAND MASS OF THE PROPERTY TO A DEPTH OF FIVE HUNDRED (500) FEET ARE HEREBY CONVEYED TO GRANTEE, NO RIGHT OR INTEREST OF ANY KIND THEREIN, EXPRESS OR IMPLIED, BEING EXCEPTED OR RESERVED TO GRANTOR EXCEPT AS HEREINAFTER EXPRESSLY SET FORTH.”

ASSessor’S PARCEL NOs. 4138-014-047 AND 4138-014-013
## EXHIBIT B

EXISTING DEVELOPMENT

<table>
<thead>
<tr>
<th>Building</th>
<th>Use</th>
<th>Net Square Footage</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-1</td>
<td>Office, Lab/R&amp;D, Warehouse</td>
<td>1,055,479</td>
</tr>
<tr>
<td>E-2</td>
<td>Office, Lab/R&amp;D, Warehouse</td>
<td>41,518</td>
</tr>
<tr>
<td>E-3</td>
<td>Office, Lab/R&amp;D, Warehouse</td>
<td>35,137</td>
</tr>
<tr>
<td>E-4</td>
<td>Office, Lab/R&amp;D, Warehouse</td>
<td>642,871</td>
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<tr>
<td>E-5</td>
<td>Office, Lab/R&amp;D, Warehouse</td>
<td>24,865</td>
</tr>
<tr>
<td>E-6</td>
<td>Office</td>
<td>2,261</td>
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<tr>
<td>E-7</td>
<td>Office, Lab/R&amp;D, Warehouse</td>
<td>54,924</td>
</tr>
<tr>
<td>E-20</td>
<td>Storage</td>
<td>7,076</td>
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<tr>
<td>E-21</td>
<td>Office, Warehouse</td>
<td>4,500</td>
</tr>
<tr>
<td>E-23</td>
<td>Restrooms</td>
<td>2,330</td>
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<tr>
<td>E-24</td>
<td>Recreation</td>
<td>1,530</td>
</tr>
<tr>
<td>Rain Shelter</td>
<td>Rain Shelter</td>
<td>2,100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1,874,591</td>
</tr>
</tbody>
</table>
EXHIBIT C

Recording Requested By and
When Recorded Mail To:
Raytheon Company
[address and attention]

ASSIGNMENT AND ASSUMPTION AGREEMENT

This ASSIGNMENT AND ASSUMPTION AGREEMENT ("Agreement") is made and entered into by and between Raytheon Company, ("Assignor"), and _________________________, a ____________________ ("Assignee").

RECITALS

A. The City of El Segundo ("City") and Assignor entered into that certain Development Agreement dated ____________ , 2016 (the "Development Agreement"), with respect to the real property located in the City of El Segundo, State of California more particularly described in Exhibit "A" attached hereto (the "Project Site"), and

B. Assignor has obtained from the City certain development approvals and permits with respect to the development of the Project Site, including without limitation, approval of _________________________ for the Project Site (collectively, the "Project Approvals").

C. Assignor intends to sell, and Assignee intends to purchase that portion, of the Project Site more particularly described in Exhibit "B" attached hereto (the "Transferred Property").

D. In connection with such purchase and sale, Assignor desires to transfer all of the Assignor’s right, title, and interest in and to the Development Agreement and the Project Approvals with respect to the Transferred Property. Assignee desires to accept such assignment from Assignor and assume the obligations of Assignor under the Development Agreement and the Project Approvals with respect to the Transferred Property.

THEREFORE, the parties agree as follows:

1. Assignment. Assignor hereby assigns and transfers to Assignee all of Assignor’s right, title, and interest in and to the Development Agreement and the Project Approvals with respect to the Transferred Property. Assignee hereby accepts such assignment from Assignor.

2. Assumption. Assignee expressly assumes and agrees to keep, perform, and fulfill all the terms, conditions, covenants, and obligations required to be kept, performed, and fulfilled by Assignor under the Development Agreement and the Project Approvals with respect to the Transferred Property, including without limitation those obligations specifically allocated to the Transferred Parcel as set forth on Exhibit "C" attached hereto.
3. **Effective Date.** The execution by City of the attached receipt for this Agreement must be considered as conclusive proof of delivery of this Agreement and of the assignment and assumption contained herein. This Agreement must be effective upon its recordation in the Official Records of Los Angeles County, California, provided that Assignee has closed the purchase and sale transaction and acquired legal title to the Transferred Property.

4. **Remainder of Project.** Any and all rights or obligations pertaining to such portion of the Project Site other than the Transferred Property are expressly excluded from the assignment and assumption provided in Sections 1 and 2 above.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the dates set forth next to their signatures below.

“ASSIGNOR”
RAYTHEON COMPANY

Date: _____________, ___

By: ____________________________

Its: ____________________________

By: ____________________________

Its: ____________________________

“ASSIGNEE”

______________________________,
a __________ __________

Date: _____________, ___

By: ____________________________

Its: ____________________________

C-2
RECEIPT BY CITY

The attached ASSIGNMENT AND ASSUMPTION AGREEMENT is received by the City of El Segundo on this ___ day of ________________, _______.

CITY OF EL SEGUNDO

By: ______________________________________________________
   Director of Planning and Building Safety

STATE OF CALIFORNIA    )
                      ) SS:
COUNTY OF _____________)

   On _________________, 20__, before me, ________________________, a Notary Public, personally appeared ________________________, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

   I certify under penalty of perjury under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature __________________________
   (Seal)

STATE OF CALIFORNIA    )
                      ) SS:
COUNTY OF _____________)

   On _________________, 20__, before me, ________________________, a Notary Public, personally appeared ________________________, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

   I certify under penalty of perjury under the laws of the State of California that the foregoing paragraph is true and correct.
WITNESS my hand and official seal.

Signature ____________________________

(Seal)
### EXHIBIT D

**PROJECT MILESTONES AND THRESHOLDS**

<table>
<thead>
<tr>
<th>Project Item</th>
<th>Threshold or Milestone</th>
<th>Required Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 annual payments. First payment of $500,000 and five subsequent payments of $700,000 each. All payments to the City’s General Fund.</td>
<td>First annual payment is due on March 31, 2016. The final payment is due on March 31, 2021.</td>
<td>Total payment of $4,000,000 over six years payable in six annual payments.</td>
</tr>
<tr>
<td>Payment of $5,000,000 to the City’s General Fund ten years after project approval.</td>
<td>If the Nash Street Roadway Extension is not completed within 10 years of the effective date of the City Council ordinance approving the ESSCSP, then a $4,000,000 payment is due 10 years after project approval.</td>
<td>Total payment of $5,000,000 payable in its entirety 10 years after project approval.</td>
</tr>
<tr>
<td>$0.50 per gross square foot fee for all new development (floor area not existing on the site on the project approval date) is required.</td>
<td>The $0.50 per gross square-foot fee is required before issuance of City building permits for any new floor area on the project site.</td>
<td>Payment of 0.50 per gross square foot fee to the City’s General Fund before issuance of building permits.</td>
</tr>
<tr>
<td>Intersection Improvements-Mitigation Measures TRA-1 through TRA-9</td>
<td>Before Certificate of Occupancy is issued for any building in ESSCP Phase II (buildings in project area adding trips in excess of Phase I Peak Period Trip cap of 225 trips)</td>
<td>Proof of Payment of all applicable fair share mitigation fees must be provided to the Director of Planning and Building Safety and Director of Public Works.</td>
</tr>
<tr>
<td>Nash Street Roadway Extension, including Class II bicycle lane</td>
<td>Before Certificate of Occupancy is issued for any building in ESSCP Phase II (buildings in project area adding trips in excess of Phase I Peak Period Trip cap of 225 trips)</td>
<td>Completion of street and all associated public improvements. Dedication of the Nash Street Improvements to the City.</td>
</tr>
<tr>
<td>Continental Boulevard Extension</td>
<td>Before any building located along Continental Boulevard is sold, leased, or used by any third party not an affiliate of Raytheon.</td>
<td>Developer must provide a dedication or public access easement to City for Continental Boulevard.</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Parcel 26</td>
<td>Within 30 days of the effective date of the City Council ordinance approving the ESSCSP.</td>
<td>20-year irrevocable offer to Dedicate</td>
</tr>
<tr>
<td>Parcels 20 and 22</td>
<td>Within 30 days of the effective date of the City Council ordinance approving the ESSCSP.</td>
<td>20-year irrevocable offer to dedicate</td>
</tr>
<tr>
<td>El Segundo Boulevard Improvements, including Class I bicycle path</td>
<td>Before a certificate of occupancy is issued for any building on Parcel 15 or 16 of Vesting Map No. 71551.</td>
<td>Required roadway improvements must be completed on the El Segundo Boulevard frontage of Parcels 15 and 16</td>
</tr>
<tr>
<td>El Segundo Boulevard Improvements, including Class I bicycle path</td>
<td>Before a certificate of occupancy is issued for any building on Parcel 14 of Vesting Map No. 71551.</td>
<td>Required roadway improvements must be completed on the El Segundo Boulevard frontage of Parcel 14</td>
</tr>
<tr>
<td>El Segundo Boulevard Improvements, including Class I bicycle path</td>
<td>Before a certificate of occupancy is issued for any building on Parcels 1, 2, 3 or 4 of Vesting Map No. 71551.</td>
<td>Required roadway improvements must be completed on the El Segundo Boulevard frontage for all parcels within the Specific Plan area with El Segundo Boulevard frontage.</td>
</tr>
<tr>
<td>Green Line Station Bicycle Parking Facilities contribution</td>
<td>Before Certificate of Occupancy is issued for any building in ESSCP Phase II (buildings in project area adding trips in excess of Phase I Peak Period Trip cap of 89 a.m or 225 pm trips or 3775 daily trips).</td>
<td>Confirmation that the $75,000 contribution has been transferred to either the City or LACMTA.</td>
</tr>
<tr>
<td><strong>Green Line Station Pedestrian Easement</strong></td>
<td><strong>Before Certificate of Occupancy is issued for any building on Parcel 13 or 14 of Vesting Map No. 71551.</strong></td>
<td><strong>Complete construction of a paved walkway at least five feet in width and compliant with ADA requirements.</strong></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>El Segundo Boulevard City sewer trunk line access for new development in the ESSCSP area.</strong></td>
<td><strong>Before December 31, 2018</strong></td>
<td><strong>Contribute 20% of the cost of the El Segundo sewer trunk line up-grade up to a maximum of $375,000.</strong></td>
</tr>
<tr>
<td><strong>Non-Raytheon employee access to 7.54 acre Recreational Area.</strong></td>
<td><strong>If 28.44 acres of the Specific Plan area is sold to user that is not Raytheon or a Raytheon affiliated company.</strong></td>
<td><strong>Access must be provided to the recreational area for all persons employed within the Specific Plan area. Access must be formalized through agreements between Raytheon and owners of land within the Specific Plan area.</strong></td>
</tr>
<tr>
<td><strong>Transfer of 7.54 recreational area to the City for use as a public park.</strong></td>
<td><strong>If the 7.54 acre recreational area is located outside of the Raytheon facility’s secured perimeter (south or east of the Nash Street Extension or west of Continental Boulevard).</strong></td>
<td><strong>Raytheon Company must record a 20 year offer of dedication for future potential park purposes if the recreation area is located on Parcels 1, 2, 3, 4, 7, or 8 of Vesting Map No. 71551.</strong></td>
</tr>
<tr>
<td>Project Item</td>
<td>Credit</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Construction Cost of the Nash Street Extension and Associated Improvements</td>
<td>Traffic Impact Mitigation Fee credit for the actual cost of construction. Appropriate documentation verifying costs must be provided and accepted by the City.</td>
<td></td>
</tr>
<tr>
<td>El Segundo Boulevard Improvements, including Class I bicycle path</td>
<td>Traffic Impact Mitigation Fee credit for the actual cost of construction. Appropriate documentation verifying costs must be provided and accepted by the City.</td>
<td></td>
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<tr>
<td>Intersection Improvements within the City of El Segundo</td>
<td>Traffic Impact Mitigation Fee credit for the required fair share fee paid to the City of El Segundo.</td>
<td></td>
</tr>
<tr>
<td>Environmental Impact Report Mitigation Measures TRA-1 to TRA-5</td>
<td></td>
<td></td>
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<tr>
<td>Bicycle Parking Facilities for the Metro Green Line El Segundo Station</td>
<td>$ 75,000 payment may be credited against Traffic Impact Mitigation Fee.</td>
<td></td>
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<tr>
<td>Section</td>
<td>Title</td>
<td>Page</td>
</tr>
<tr>
<td>---------</td>
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<td>------</td>
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<tr>
<td>8.</td>
<td>Utilities</td>
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<td>9.</td>
<td>Recreational Access</td>
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<td>9.1</td>
<td>Non-Raytheon User Access</td>
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<td>9.2</td>
<td>Irrevocable Offer to Dedicate Land to City</td>
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<tr>
<td>10.</td>
<td>Payments After Approval</td>
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<tr>
<td>10.1</td>
<td>Six Annual Payments</td>
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<td>10.2</td>
<td>Year 10 Payment</td>
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<td>10.3</td>
<td>Building Permit Fee</td>
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<tr>
<td>11.</td>
<td>Uniform Codes and Standard Specification</td>
<td>15</td>
</tr>
<tr>
<td>12.</td>
<td>Demonstration of Good Faith Compliance</td>
<td>16</td>
</tr>
<tr>
<td>12.1</td>
<td>Review of Compliance</td>
<td>16</td>
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<td>12.2</td>
<td>Good Faith Compliance</td>
<td>16</td>
</tr>
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<td>12.3</td>
<td>Information to be Provided to Developer</td>
<td>16</td>
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<td>12.4</td>
<td>Developer's Report</td>
<td>16</td>
</tr>
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<td>12.5</td>
<td>Notice Of Non-Compliance; Cure Rights</td>
<td>17</td>
</tr>
<tr>
<td>12.6</td>
<td>Public Notice of Finding</td>
<td>17</td>
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<td>12.7</td>
<td>Failure of Periodic Review</td>
<td>17</td>
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<tr>
<td>13.</td>
<td>Excusable Delays</td>
<td>17</td>
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<tr>
<td>14.</td>
<td>Default Provisions</td>
<td>17</td>
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<td>14.1</td>
<td>Default</td>
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<td>14.2</td>
<td>Content of Notice of Violation</td>
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<td>14.3</td>
<td>Remedies for Breach</td>
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<td>14.4</td>
<td>Resolution of Disputes</td>
<td>18</td>
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<td>14.5</td>
<td>Attorney Fees and Costs</td>
<td>18</td>
</tr>
<tr>
<td>15.</td>
<td>Mortgagee Protection</td>
<td>19</td>
</tr>
</tbody>
</table>
9.1 The Specific Plan provides for 7.54 acres of land to be used for Open Space and Recreational purposes. This land must remain private and only available to Raytheon employees. However, should Developer sell more than twenty percent (20%) of ESSCSP Campus Area (i.e., at least 28.44 acres), to a user other than Raytheon or a Raytheon affiliate, Developer must provide non-Raytheon or Raytheon affiliated employees within the ESSCSP area with permanent access to the 7.54-acre recreational area within the Campus. The access must be formalized through agreements between Raytheon and the purchaser(s) of the property.

9.2 Within 30 days of approval of a land transfer of the recreational/open space area to an alternative parcel and before a building permit may be issued on Parcel 11, the Developer must record a 20-year irrevocable offer of dedication of a 7.54 acre recreational/open space area to the City of El Segundo, in a form approved by the City Attorney, for future potential park purposes if located on any of the lots (Parcels 1, 2, 3, 4, 7, 8, 13 or 14 of Vesting Map No. 71551) and outside the Raytheon security fenced perimeter.


10.1 Six Annual Payments. The Developer must make one annual payment of $500,000 and five subsequent annual payments of $700,000 each to the City. Payments will start on March 31, 2016 and occur annually on March 31th, with the final payment due on March 31, 2021. These payments will be deposited to the City’s General Fund and may be used for any general purpose identified by the City Council in its sole discretion. The total amount of the six payments is $4,000,000.

10.2 Payment in Year 10. If the Nash Street extension, identified in Section 7.1, is not completed within 10 years of the effective date of the City Council Ordinance approving the Specific Plan and related entitlements, then the Developer is required to make a $5,000,000 payment not later than the anniversary date that the Ordinance became effective (e.g., if the Ordinance became effective December 1, 2015, then payment would be due not later than December 2, 2025). This payment will be deposited to the City’s General Fund and may be used for any general purpose identified by the City Council in its sole discretion.

10.3 Building Permit Fee. Before building permits are issued for any new development (not existing at time of project approval) in the project area, the Developer must pay a $0.50 per gross square-foot fee. All revenue from this fee will be deposited to the City’s General Fund and may be used for any general purpose identified by the City Council in its sole discretion.

11. Uniform Codes and Standard Specifications

11.1 Nothing in this Agreement prevents City from applying Uniform Codes to the Project provided that the provisions of any such Uniform Code:
without Developer's written consent, take any action that would frustrate, hinder or otherwise prevent Developer's efforts to settle or otherwise resolve any Third Party Enforcement Action.

20.2.4 Provided that City complies with this Section and provided that Developer is a party to the relevant Third Party Enforcement Action, Developer agrees to be bound by any final judgment (i.e., following all available appeals) arising out of a Third Party Enforcement Action and further agrees that no default under this Agreement will arise if such final judgment requires City to apply to the Project or Project Site a City Law that conflicts with Applicable Rules or this Agreement.

21. **Time of Essence.** Time is of the essence for each provision of this Agreement of which time is an element.

22. **Effective Date.** This Agreement becomes operative on the Effective Date.

23. **Notices.** Any notice that a party is required or may desire to give the other must be in writing and may be sent by: i) personal delivery; or ii) by deposit in the United States mail, postage paid, registered or certified mail, return receipt requested; or iii) by overnight delivery using a nationally recognized overnight courier, providing proof of delivery; or iv) by facsimile or electronic delivery, evidenced by confirmed receipt, addressed as follows (subject to the right of a party to designate a different address for itself by notice similarly given):

If to City:  
City of El Segundo  
350 Main Street  
El Segundo, California 90245  
Attention: City Manager  
Phone: 310 524-2301  
Fax: 310 322-7137  
E-Mail: gcarpenter@elsegundo.org

With a Copy to:  
City of El Segundo  
350 Main Street  
El Segundo, California 90245  
Attention: Director of Planning and Building Safety  
Phone: 310 524-2346  
Fax: 310 322-4167  
E-mail: slec@elsegundo.org

With a Copy to:  
City of El Segundo  
350 Main Street  
El Segundo, California 90245  
Attention: Planning Manager  
Phone: 310 524-2340  
Fax: 310 322-4167

Deleted: E-mail: keithintress@elsegundo.org
<table>
<thead>
<tr>
<th>Description</th>
<th>Deadline</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Line Station Pedestrian Easement</td>
<td></td>
<td>Complete construction of a paved walkway at least five feet in width and compliant with ADA requirements.</td>
</tr>
<tr>
<td>El Segundo Boulevard City sewer trunk line access for new development in the ESSCSP area.</td>
<td>Before December 31, 2018</td>
<td>Contribute 20% of the cost of the El Segundo sewer trunk line upgrade up to a maximum of $375,000.</td>
</tr>
<tr>
<td>Non-Raytheon employee access to 7.54 acre Recreational Area.</td>
<td></td>
<td>Access must be provided to the recreational area for all persons employed within the Specific Plan area. Access must be formalized through agreements between Raytheon and owners of land within the Specific Plan area.</td>
</tr>
<tr>
<td>Transfer of 7.54 recreational area to the City for use as a public park.</td>
<td></td>
<td>Raytheon Company must record a 20 year offer of dedication for future potential park purposes if the recreation area is located on Parcels 1, 2, 3, 4, 7, 8, 13 or 14 of Vesting Map No. 71551, or other parcels as indicated in the Conditions of Approval.</td>
</tr>
</tbody>
</table>
CITY COUNCIL RESOLUTION NO. 4958  EXHIBIT A

CITY COUNCIL ORDINANCE NO. 1516  EXHIBIT D

CONDITIONS OF APPROVAL

In addition to all applicable provisions of the El Segundo Municipal Code ("ESMC"), the Raytheon Company, agrees to comply with the following provisions as conditions for the City of El Segundo’s approval of Environmental Impact Report for Environmental Assessment No. EA-905, General Plan Amendment and General Plan Map Amendment No. GPA 11-01, Specific Plan No. SP 11-01, Zone Change and Zoning Map Amendment No. ZC 11-01, Zone Text Amendment No. ZTA 11-01, Development Agreement No. DA 11-02, and Subdivision No. SUB 11-02 for Vesting Tentative Map (VTM) No. 71551 ("Project Conditions").

Planning and Building Safety Department

1. Before building permits are issued, the applicant must obtain all the necessary approvals, licenses and permits and pay all the appropriate fees as required by the City.

2. The applicant must comply with all mitigation measures identified in the Final Environmental Impact Report prepared for the Project. A Mitigation Monitoring and Reporting Program (MMRP) was prepared as part of the environmental review for the project and is attached as Exhibit "F" to this Resolution. The mitigation measures of the MMRP are incorporated into these conditions of approval by reference. All mitigation measures and conditions of approval must be listed on the plans submitted for plan check and the plans for which a building permit is issued.

3. Before the City issues building permits located on sites within the ESSCSP, the applicant must submit site specific landscape and irrigation plans to the Planning and Building Safety Department and the Parks and Recreation Department for review and approval to demonstrate compliance with the City’s Water Conservation regulations and Guidelines for Water Conservation in Landscaping (ESMC §§10-2-1, et seq.). The landscaping and irrigation must be completely installed before the City issues a final Certificate of Occupancy.

4. The applicant must build the Nash Street roadway extension and associated public improvements in accordance with Section 7.1 of the Development Agreement. The design and construction of the Nash Street roadway extension is subject to review and approval by
the Director of Public Works and Director of Planning and Building Safety.

5. The applicant must cooperate with the City in creation of a landscaping and lighting assessment district for the Nash Street Extension in accordance with Section 7.1.6 of the Development Agreement.

6. The applicant must build the Continental Boulevard Roadway Extension in accordance with the El Segundo South Campus Specific Plan and Section 7.2 of the Development Agreement.

7. The applicant must cooperate with the City in creation of a landscaping and lighting assessment district for the Continental Boulevard Extension in accordance with Section 7.2.5 of the Development Agreement if a dedication of the Continental Boulevard roadway extension and associated improvements is accepted by the City.

8. The applicant must record a 20-year irrevocable offer of dedication of Parcel 26 of Tentative Vesting Map No. 71551 in accordance with the El Segundo South Campus Specific Plan and Section 7.2.6 of the Development Agreement. Before recordation, the irrevocable offer to dedicate must be reviewed and approved by the Director of Planning and Building Safety, the Director of Public Works and the City Attorney.

9. The applicant must complete the El Segundo Boulevard roadway and associated right-of-way improvements in accordance with Section 7.3 of the Development Agreement. The design and construction of the El Segundo roadway and associated improvements is subject to review and approval by the Director of Public Works and Director of Planning and Building Safety.

10. The applicant must construct a Class I bicycle path on El Segundo Boulevard in accordance with the El Segundo South Campus Specific Plan and Section 7.4 of the Development Agreement.

11. The applicant must construct Class II bicycle lanes in the Nash Street Extension in accordance with the El Segundo South Campus Specific Plan and Section 7.5 of the Development Agreement.

12. The applicant must pay $75,000 towards the construction of bicycle parking facilities at or adjacent to the Metro Green Line El Segundo Station in accordance with Section 7.6.1 of the Development Agreement.
13. The applicant must allow a pedestrian easement across one or a combination of Parcels 13, 14 and/or 24 of Vesting Map No. 71551 to allow direct pedestrian access to the Metro Green Line Light Rail Station in accordance with the El Segundo South Campus Specific Plan and Section 7.6.1 of the Development Agreement. Before recording, the pedestrian easement must be reviewed and approved by the Director of Planning and Building Safety, the Director of Public Works and the City Attorney.

14. The applicant must record a 20-year irrevocable offer of dedication of Parcels 20 and 22 of Vesting Map No. 71551 in accordance with the El Segundo South Campus Specific Plan and Section 7.7 of the Development Agreement. Before recording, the irrevocable offer to dedicate must be reviewed and approved by the Director of Planning and Building Safety, the Director of Public Works and the City Attorney.

15. To obtain access to sewer service in El Segundo Boulevard a 25% payment by the applicant towards the cost of a sewer line capacity upgrade, up to $375,000, in accordance with Section 8.2 of the Development Agreement is required not later than December 31, 2018.

16. If the applicant sells more that 20% of the ESSCSP campus area (28.44 acres) to a user other than Raytheon or a Raytheon affiliate, then all employees within the ESSCSP area must be provided access to the 7.54 acre Open Space and Recreational area in accordance with Section 9 of the Development Agreement.

17. The applicant must record a 20-year irrevocable offer of dedication of the 7.54 acre recreation/open space area to the City of El Segundo, in a form approved by the City Attorney, for future potential park purposes in accordance with the Development Agreement if located on any of the lots (Parcels 1, 2, 3, 4, 7, 8, 13 or 14 of Vesting Map No. 71551) outside the Raytheon security fenced perimeter.

18. The applicant must make one annual $500,000 payment and five subsequent annual $700,000 payments to the City as identified in Section 10 of the Development Agreement. Six annual payments are required starting on March 31, 2016 and ending on March 31, 2021. If the Nash Street roadway extension improvements are not completed within 10 years of the effective date of the City Council ordinance approving this project, an additional $5,000,000 payment to the City is required.
19. A $.50 per square foot fee for all new development on the site is required. All revenue from this fee will be deposited to the City's General Fund.

20. The applicant is required to obtain any necessary approvals from the Los Angeles County Metropolitan Transportation Authority (Metro) for any work that involves encroachment onto Metro easement areas or right-of-ways. These approvals may include, without limitation, pedestrian, bicycle and roadway easements and temporary right-of-entry agreements.

21. The applicant is required to submit building and engineering plans to Metro for any project site located within 100 feet of the Metro station or rail easement. Clearance of these plans from Metro is required before the City can issue a building permit. Metro requires an Engineering Review Fee for evaluation of any impacts based on adjacency and relationship of proposed new structures to the Metro existing structures.

22. The applicant is required to obtain a Metro Special Operation Permit for use of a pile driver or any other equipment in close proximity to a Metro aerial railway support structure at least one week before starting construction.

23. If required by Metro, the applicant must obtain a track allocation permit for any work within ten feet of a Metro aerial railway support structure. Permits allowing for single tracking or a power shutdown must be obtained from Metro at least two weeks before the start of construction.

24. The applicant must allow Metro representatives access to monitor any construction activity to ascertain if construction activity will have any impacts on Metro Right-of-Way.

25. Wayfinding signage to the Metro Green Line Station and other transportation facilities must be provided at appropriate locations within the Specific Plan area. These signs must be consistent with applicable Metro guidelines for wayfinding signage. The Director of Planning and Building Safety and the Director of Public Works must review and approve the location and appearance of wayfinding signs.

26. Before the City issues a certificate of occupancy for any new building within the ESSCSP, the applicant must contact Metro about employer transit pass programs. The applicant must provide
verification of this contact to the Director of Planning and Building Safety.

27. Projects located within the ESSCSP must comply with the City’s Transportation Demand Management (TDM) regulations (ESMC §§15-17-1, et seq.). Evaluation for compliance with the City’s TDM regulations for specific projects will occur as part of the Site Plan Review process identified in ESSCSP § VII.D.

28. The applicant must contact the County Sanitation Districts of Los Angeles County Industrial Waste Section and receive a determination as to the necessity of a permit for industrial waste discharge before City approval of a Site Plan Review for any project within the ESSCSP.

29. A Study Application Package for a second customer dedicated substation must be submitted to Southern California Edison before City approval of a Site Plan Review for any project that would require electrical service from a second substation within the ESSCSP area.

30. The applicant must submit six sets of project plans depicting the El Segundo roadway widening and intersection improvements for Southern California Edison review and approval before City approval of building permits for a building identified as part of Phase II in the EIR.

31. Trash and recycling enclosures must be provided and shown on site plans that are sufficiently large enough to store the necessary bins required for the regular collection of commercial solid waste and recyclable materials. The site plan with the location and dimensions of the trash and recycling enclosure and an elevation view of the enclosure must be provided to the Planning and Building Safety Department for review and approval before the City issues building permits.

32. A qualified cultural resources monitor must be present during earthmoving construction activities. The requirements and procedures set forth in Public Resources Code §§ 5097, et seq., must be implemented if human remains are discovered during site excavation.

33. Ground level mechanical equipment, refuse collectors, storage tanks, generators, and other similar facilities must be screened from view consistent with the development standards and design guidelines contained in the El Segundo South Campus Specific Plan.
34. Exterior lighting must be designed to minimize off-site glare.

35. Buildings must be designed to comply with all ESMC standards for the attenuation of interior noise.

36. At the time of plan check submittal for the first project within the ESSCSP area the applicant must submit funds to cover reasonable first year costs, including City consultant costs, of monitoring all conditions of approval and mitigation measures adopted in the MMRP. Annually thereafter, the applicant is required to replenish funds sufficient to cover the reasonable costs, including City consultants’ costs for each year. The Director of Planning and Building Safety, at the Director’s discretion, may retain a consultant to coordinate and monitor compliance.

37. Before the City issues a grading permit, building permit, or certificate of occupancy, as applicable, the applicant must provide evidence to the Director of Planning and Building Safety that all mitigation measures in the MMRP are or will be implemented.

38. A Landscape Master Plan for the ESSCSP must submitted to the City before it approves the first Site Plan Review within the Specific Plan area. This Landscape Master Plan is subject to review and approval by the Director of Planning and Building Safety.

39. An overall Master Sign Program for the ESSCSP must be submitted to the City before it approves the first Site Plan Review within the Specific Plan area. This Master Sign Program is subject to review and approval by the Director of Planning and Building Safety.

40. A Trip Budget tracking system, based on the criteria contained in Appendix A of the El Segundo South Campus Specific Plan, must be developed and approved by the Director of Planning and Building Safety. An update of the Trip Budget tracking system is required to be submitted with every Site Plan Review and Plan Check for projects located within the ESSCSP area.

41. The Project Trip Ceiling for the project is the maximum number of vehicle trips permitted for the project. The Project Trip Ceiling for new development within the ESSCSP area consists of:

- 3,042 AM Peak Hour Trips (2,634 In and 408 Out)
- 3,120 PM Peak Hour Trips (631 In and 2,489 Out)
- 26,585 Total Daily Trips
42. Before the City issues a building permit for the first building located within any Phase identified in the EIR, a reclaimed water facility plan must be submitted for review and approval by the Director of Planning and Building Safety and the Director of Public Works.

43. The project must meet all design criteria of the Specific Plan to the satisfaction of the Director of Planning and Building Safety.

**Building Division Conditions**

44. Before the City issues building permits, the applicant must submit a geotechnical/soils report, along with an associated grading plan that addresses the current code to the Planning and Building Safety Department for review and approval.

45. Before the City issues grading permits, the applicant must submit a soils report to the Planning and Building Safety Department for review and approval.

46. Before the City issues building permits, plans must show compliance with the version of the California Building Code, as adopted by the ESMC, in effect at the time of building permit application.

47. Before the City issues grading or building permit for any project within the Specific Plan area, the applicant must provide evidence to the reasonable satisfaction of the Director of Planning and Building Safety that all applicable permits from other agencies are obtained including, without limitation, the California Department of Transportation, Regional Water Quality Control Board (Los Angeles Region), South Coast Air Quality Management District, and Los Angeles County Department of Public Works.

**Fire Department Conditions**

48. The project must comply with all applicable requirements in the California Fire Code and the International Fire Code, as adopted by the ESMC, and El Segundo Fire Department regulations, in effect at the time of building permit application.

49. Before the City issues a building permit, the applicant must submit a Fire/Life Safety Plan to the Fire Chief (or designee) identifying fire safety precautions during demolition and construction, emergency site access during construction, permanent fire department access, fire hydrant locations and any existing or proposed fire sprinkler system and fire alarm systems.

51. Private fire main systems for each new building or parcel must be from an independent public water supply. There can be no sharing of private fire main systems between parcels.

52. The applicant must provide an automatic fire sprinkler system throughout each building, installed in accordance with California Fire Code Chapter 9 and the currently adopted edition of NFPA 13, both as adopted by the ESMC.

53. The applicant must provide the following conditions for any fire features as part of this project: A) A barrier must be provided around the fire feature to prevent accidental access into the fire feature; B) The distance between the fire feature and combustible material and furnishing must meet the fire feature's listing and manufacturer's requirements; and C) If the feature's protective barrier exceeds ambient temperatures, all exit paths and occupant seating must be a minimum 36 inches from the fire feature.

54. Each building needs to be identified as a separate street address for emergency response purposes.

55. The project must provide on-site collection and dispersion (infiltration) of non-stormwater discharges from testing and maintenance of water-based fire protection systems (fire sprinklers and private fire main systems) and other non-stormwater discharges.

56. Any diesel-powered generators must be approved by the Fire Department, Environmental Safety Division, and provide for secondary containment, placarding, spill detection and prevention. Underground tanks require additional environmental monitoring requirements.

57. The applicant must provide the Environmental Safety Division of the El Segundo Fire Department an inventory of any and all chemicals used in facilities that exceeds 55 gallons, 500 pounds or 200 cubic feet.
58. The applicant, or designee, must contact Underground Service Alert before digging or excavating.

59. Restaurant and industrial activities must have segregated wastewater systems to ensure pre-treatment devices are adequately protected.

Public Works Department Conditions

60. All onsite utilities including, without limitation, water, electricity, gas, sewer and storm drains, must be installed underground. Contact Southern California Edison for required service and underground requirements.

61. The applicant must secure any required encroachment permits from the Public Works Department before commencing any work in the public right-of-way.

62. The project must comply with the latest National Pollution Discharge Elimination System (NPDES) requirements and provide Best Management Practices (BMPs) for sediment control, construction material control and erosion control.

63. Before the City issues a building permit, the location and sizes of all proposed water meters must be approved by the City’s Water Division.

64. Acceptable water service connection points for future construction in the ESSCSP area is subject to review and approval by the Director of Public Works.

65. The location of existing water service lateral connection points in the ESSCSP area as well as existing and proposed fire hydrant connections area subject to review and approval by the Director of Public Works.

66. City water mains cannot be located on private property. The applicant must provide a main meter in the public right-of-way.

67. Wastewater facilities cannot have structures built over them.

68. Wastewater facilities cannot be designed with curves; they must be straight lines from manhole to manhole. If deviations are needed, they must be made at manholes.
69. A registered civil engineer must provide storm (hydrologic and hydraulic) calculations for appropriate storm drain facilities to control on-site drainage and mitigate off-site impacts, as follows, subject to review and approval from the Public Works Director, or designee:

- The design must follow the criteria contained in the most recent additions of both the Los Angeles County Department of Public Works Hydrology Manual and Standard Urban Storm Water Mitigation Plan. Flows must remain in their historical drainage pattern so as not to impact neighboring properties.

- New development cannot increase the rate of flow (cubic feet per second) or velocity (feet per second) of site run-off water to any off-site drainage areas beyond the measured or calculated pre-project rate and velocity.

70. Construction related parking must be provided on-site.

71. All record drawings (as-built drawings) and supporting documentation must be submitted to the Public Works Department before scheduling the project’s final inspection.

**Police Department Conditions**

72. Before the City issues a building permit within the ESSCSP, the applicant must submit photometric light studies for Police Chief or designee review and approval. A site plan must be provided showing buildings, parking areas, walkways, and the point-by-point photometric calculation of the required light levels.

73. A schematic plan of the security camera systems for new structures must be submitted for Police Chief or designee review and approval before the City issues a building permit, and must be included as a page in the stamped approved set of plans.

74. Lighting devices must be enclosed and protected by weather and vandal resistant covers.

75. The location and design of crosswalks are subject to Police Chief or designee review and approval.

76. The location and design of future bicycle racks and bicycle parking areas are subject to Police Chief or designee review and approval.
77. The Police Chief or designee will review new buildings and tenant improvements within buildings during the plan check process. Interior and exterior improvements are subject to Police Chief or designee review and approval. Items subject to review include, but are not limited to, doors and hardware, roll-up doors, stairwells, exterior mounted ladders and trash dumpsters.

78. Street addressing must be a minimum of 6 inches high and must be visible from the street or driving surface, of contrasting color to the background and illuminated during hours of darkness. Addressing must also be shown on plan elevations.

79. All landscaping must be low profile around perimeter fencing, windows, doors and entryways so as not to limit visibility or provide climbing access. Dense bushes cannot be clumped together in a manner that provides easy concealment.

Construction Conditions

80. Before any construction occurs within the plan area, the perimeter of the development site must be fenced with a minimum 6-foot high fence. The fence must be covered with a material approved by the Planning and Building Safety Director, or designee, to prevent dust from leaving the site.

81. Public sidewalks must remain open at all times.

82. All haul trucks hauling soil, sand, and other loose materials must either be covered or maintain two feet of freeboard.

83. Construction vehicles cannot use any route except the City’s designated Truck Routes.

84. The applicant must develop and implement a construction management plan for any project located within the Specific Plan area. The construction management plan is subject to Director of Planning and Building Safety and Director of Public Work review and approval. The plan must include measures recommended by SCAQMD Rules 402 and 403.

85. During construction and operations, all waste must be disposed in accordance with all applicable laws and regulations. Toxic wastes must be discarded at a licensed, regulated disposal site by a licensed waste hauler.
Impact Fee Conditions

86. Pursuant to ESMC §§ 15-27A-1, et seq., and before building permits are issued, the applicant must pay a one-time fire services mitigation fee in accordance with City Council Resolution No. 4687.

87. Pursuant to ESMC §§ 15-27A-1, et seq., and before building permits are issued, the applicant must pay a one-time police services mitigation fee in accordance with City Council Resolution No. 4687.

88. Pursuant to ESMC §§ 15-27A-1, et seq., and before building permits are issued, the applicant must pay a one-time park services mitigation fee in accordance with City Council Resolution No. 4687.

89. Before building permits are issued, the applicant must pay the required sewer connection fees (as specified in ESMC Title 12-3).

90. Pursuant to ESMC §§ 15-27A-1, et seq., and before the City issues a certificate of occupancy for buildings within the Specific Plan, the applicant must pay a one time traffic mitigation fee in accordance with City Council Resolution No. 4443.

91. Permittee agrees to pay City any development impact fees ("DIFs") that may be applicable to the Project. Permittee takes notice pursuant to Government Code § 66020(d) that City is imposing the DIFs upon the Project in accordance with the Mitigation Fee Act (Government Code § 66000, et seq.). The permittee is informed that it may protest DIFs in accordance with Government Code § 66020.

92. All required fees, adopted by agencies with jurisdiction over intersections and roadways affected by this Project and identified in the MMRP adopted for this project, must be calculated and collected by affected agencies before Certificates of Occupancy are issued for any building identified as part of Phase II in the EIR. Proof of fee payment must be provided to the Director of Planning and Building Safety.

93. Before building permits are issued, the applicant must pay the required School Fees. This condition does not limit the applicant's ability to appeal or protest the payment of these fees to the school districts(s).

Miscellaneous

94. Unless otherwise provided by the Development Agreement, the vesting tentative map will expire pursuant to Government Code § 66452.6 and ESMC § 14-1-12.
The Raytheon Company, agrees to indemnify and hold the City harmless from and against any claim, action, damages, costs (including, without limitation, attorney's fees), injuries, or liability, arising from the City's approval of Environmental Assessment No. EA-905, General Plan Amendment/General Plan Map Amendment No. GPA 11-01, Specific Plan No. SP 11-01, Zone Change and Zoning Map Amendment No. ZC 11-02, Zone Text Amendment No. ZTA 11-01, Development Agreement No. DA 11-02, and Subdivision No. 11-02 (VTM No. 71551). Should the City be named in any suit, or should any claim be brought against it by suit or otherwise, whether the same be groundless or not, arising out of the City approval of Environmental Assessment No. EA-905, General Plan Amendment/General Plan Map Amendment No. GPA 11-01, Specific Plan No. SP 11-01, Zone Change and Zoning Map Amendment No. ZC 11-02, Zone Text Amendment No. ZTA 11-01, Development Agreement No. DA 11-02, and Subdivision No. 11-02 (VTM No. 71551), the Raytheon Company, agrees to defend the City (at the City's request and with counsel satisfactory to the City) and will indemnify the City for any judgment rendered against it or any sums paid out in settlement or otherwise. For purposes of this section “the City” includes the City of El Segundo's elected officials, appointed officials, officers, and employees.

By signing this document, Scott Pozza, on behalf of the Raytheon Company, certifies that they have read, understood, and agree to the Project Conditions listed in this document.

Scott Pozza
Director - Facilities and Real Estate
Space and Airborne Systems
The Raytheon Company, a Delaware Corporation
AGENDA DESCRIPTION:

Consideration and possible action to waive the formal bidding process pursuant to the El Segundo City Code Section 1-7-10 and authorize the Fire Department to piggy-back on a City of Palo Alto Fire Department’s Request for Quotation, RFQ 159018, for the purchase of a replacement Fire Engine manufactured by Pierce Manufacturing Inc. (Fiscal Impact: $668,982.00)

RECOMMENDED COUNCIL ACTION:

1) Pursuant to El Segundo City Code Section 1-7-10, waive the formal bidding process and authorize the Fire Department to piggy-back on a City of Palo Alto Fire Department RFQ 159018, for the purchase of a replacement Fire Engine from Pierce Manufacturing Inc;
2) Alternatively, discuss and take other action related to this item.

ATTACHED SUPPORTING DOCUMENTS:

1) 100% Pre-payment Option from Pierce Manufacturing Inc. (preferred)
2) Full Cost Proposal from Pierce Manufacturing Inc.
3) City of Palo Alto Request for Quotation

FISCAL IMPACT: Included in Adopted Budget

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<th>Amount Budgeted:</th>
<th>$668,982.00</th>
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<td>Account Number(s):</td>
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<td>3346/E33 $488,282</td>
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ORIGINATED BY: Evan Siefke, Fire Captain
REVIEWED BY: Breck Slover, Interim Fire Chief
APPROVED BY: Greg Carpenter, City Manager

BACKGROUND AND DISCUSSION:

The El Segundo Fire Department currently possesses two engines in front line status. The engine proposed to be replaced is nearly 16 years old and has been in large part reliable over the last fifteen plus years, however, in recent months has needed extensive repairs and is showing its age. Traditionally the targeted life expectancy for heavy fire apparatus has been 20 years (15 in frontline status and 5 in second line status). Staff recommends that the oldest front line engine be replaced; which is stationed at Fire Station 1. The proposed replacement of this engine was reviewed and approved as part of the Strategic Planning process for FY15/16. As a result of this discussion the City Council directed staff to move forward with the development of specifications for a new engine. Staff recommends that the City purchase a triple combination pumper from Pierce Manufacturing Inc. Pierce is the leading manufacturer of custom fire apparatus in the nation. The El Segundo Fire Department has purchased Pierce fire apparatus exclusively since 1985. Pierce has been the manufacturer of choice of the Fire Department and
the Equipment Maintenance Division due to the quality of their fire apparatus as well as providing for consistency for vehicle operation, maintenance, and repair. Pierce Manufacturing Inc. offers two (2) payment options to the City which include a 100% pre-payment option or a full payment at time of delivery option. Staff recommends the 100% pre-payment option as it would result in a cost savings of $31,558 from the total purchase price as opposed to lease option. In addition, the City will need to purchase the apparatus prior to the 3% increase that will take effect February 1, 2016. The manufacturer has indicated that construction of the proposed engine will take approximately 10 to 11 months.

To purchase this apparatus in a timely manner, the Fire Department would like to piggy-back off of the City of Palo Alto’s procurement for the same apparatus. In May 2015 the City of Palo Alto went out to bid (RFQ 159018) to procure a new, 1500 Gallon-Per-Minute (GPM) fire pumper with the vendor to handle the DMV registration. In October 2015, Pierce was selected and awarded the contract (PO#4516000260) to custom design and build a fire service apparatus in accordance with the specifications and requirements detailed in the RFQ. The El Segundo Fire Department would like to utilize this contract due to the price reasonableness and compliance with ISO 9001 certified facilities. The City has accumulated the money in equipment replacement in order to allow us to replace Engine 31 (3348). Because of the existing contract between the City of Palo Alto, staff request the City Council consent to the City “piggy-backing” on the existing contract, as allowed by ESMC § 1-7-11.
PREPAYMENT OPTION
(PREFERRED)
El Segundo Fire Department
100% Pre-Payment Option
November 29, 2015

If a 100% pre-payment were made at contract signing, the following discount would be applied to the final invoice:

<table>
<thead>
<tr>
<th>Description</th>
<th>Each</th>
<th>Extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>One (1) Arrow XT Triple Combination Pumper</td>
<td>$640,951.00</td>
<td>$640,951.00</td>
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<tr>
<td>100% Prepayment Discount</td>
<td>$(28,953.00)</td>
<td>$(28,953.00)</td>
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<tr>
<td>Performance Bond</td>
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<tr>
<td>California Tire Fee</td>
<td>$10.50</td>
<td>$10.50</td>
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<tr>
<td>TOTAL PREPAY PURCHASE PRICE</td>
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<tr>
<td>Less 100% pre-payment at Contract Signing</td>
<td>$668,981.17</td>
<td>$668,981.17</td>
</tr>
<tr>
<td>BALANCE DUE AT DELIVERY</td>
<td>$0.00</td>
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</tr>
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</table>

100% PRE-PAYMENT DISCOUNT SHOWN ABOVE IS AVAILABLE IN TWO WAYS:

a) If your department makes a 100% cash pre-payment at contract signing.
b) If your department signs up for a lease-purchase with Oshkosh Capital. This would require no money down and no payments for one (1) year if desired.

* Discount for the 100% pre-payment option includes discounts for the chassis, interest, aerial (if applicable), and flooring charges.

* Any item added after this option is elected will come at additional cost and will be added to the final invoice.
FULL COST INVOICE
November 29, 2015

El Segundo Fire Department
314 Main St.
El Segundo, CA 90245

The undersigned is prepared to manufacture for you, upon an order being placed by you, for final acceptance by Pierce Manufacturing, Inc., at its corporate office in Appleton, Wisconsin, the apparatus and equipment herein named and for the following prices:

<table>
<thead>
<tr>
<th></th>
<th>Each</th>
<th>Extension</th>
</tr>
</thead>
<tbody>
<tr>
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<td><strong>$700,539.94</strong></td>
<td><strong>$700,539.94</strong></td>
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</tbody>
</table>

**PLEASE NOTE THE FOLLOWING ABOUT THIS QUOTATION:**
Payment options are available and are included under separate cover. One of these options may save your department a significant amount of money!

Said apparatus and equipment are to be built and shipped in accordance with the specifications hereto attached, delays due to strikes, war or international conflict, failures to obtain chassis, materials, or other causes beyond our control not preventing, within about **315-345 CALENDAR DAYS** after receipt of this order and the acceptance thereof at our office in Appleton, Wisconsin, and to be delivered to you at **the City of El Segundo.**

The specifications herein contained shall form a part of the final contract and are subject to changes desired by the purchaser, provided such alterations are interlined prior to the acceptance by the company of the order to purchase, and provided such alterations do not materially affect the cost of the construction of the apparatus.

The proposal for fire apparatus conforms with all Federal Department of Transportation (DOT) rules and regulations in effect at the time of bid, and with all National Fire Protection Association (NFPA) guidelines for Automotive Fire Apparatus as published at time of bid, except as modified by customer specifications. Any increased costs incurred by the first party because of future changes in or additions to said DOT or NFPA standards will be passed along to the customer as an addition to the price set forth above. Unless accepted within 30 days from date, the right is reserved to withdraw this proposition.

Respectfully Submitted,

Pierce Manufacturing Inc.

Adrian Beyer
Sales Representative
EL SEGUNDO FIRE SPECIFICATIONS
Proposal for El Segundo
Prepared by South Coast Fire Equipment, Inc
11/29/2015
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Pierce Manufacturing is pleased to submit a proposal to El Segundo Fire Department for a **Pierce® multi purpose response vehicle** per your request for quotation. The following paragraphs will describe in detail the apparatus, construction methods, and equipment proposed. This proposal will indicate size, type, model and make of components parts and equipment, providing proof of compliance with each and every item (except where noted) in the departments advertised specifications.

PIERCE MANUFACTURING was founded in 1913. Since then we have been building bodies with one philosophy, "BUILD THE FINEST". Our skilled craftsmen take pride in their work, which is reflected, in the final product. We have been building fire apparatus since the early "forties" giving Pierce Manufacturing over 60 years of experience in the fire apparatus market. Pierce Manufacturing has built and put into service more than 51,000 apparatus, including more than 27,000 on Pierce custom chassis designed and built specifically for fire and emergency applications. Our Appleton, Wisconsin facility has over 757,000 total square feet of floor space situated on approximately 97 acres of land. Our Bradenton, Florida facility has 300,000 square feet of floor space situated on approximately 38 acres of land.

Our beliefs in high ethical standards are carried through in all of our commitments and to everyone with whom we do business. Honesty, Integrity, Accountability and Citizenship are global tenets by which we all live and work. Consequently, we neither engage in, nor have we ever been convicted of price fixing, bid rigging, or collusion in any domestic or international fire apparatus market.

Pierce has only one brand of fire apparatus "Pierce", ensuring you are receiving top of the line product that meets your specification.

In accordance with the current edition of NFPA 1901 standards, this proposal will specify whether the fire department, manufacturer, or apparatus dealership will provide required loose equipment.

Images and illustrative material in this proposal are as accurate as known at the time of publication, but are subject to change without notice. Images and illustrative material is for reference only, and may include optional equipment and accessories and may not include all standard equipment.

**GENERAL DESIGN AND CONSTRUCTION**
To control quality, ensure compatibility, and provide a single source for service and warranty, the custom cab, chassis, pump module and body will be entirely designed, assembled/welded and painted in Pierce owned manufacturing facilities. This includes, but not limited to the cab weldment, the pumphouse module assembly, the chassis assembly, the body and the electrical system.

**QUALITY AND WORKMANSHIP**
Pierce has set the pace for quality and workmanship in the fire apparatus field. Our tradition of building the highest quality units with craftsmen second to none has been the rule right from the beginning and we demonstrate that ongoing commitment by: Ensuring all steel welding follows American Welding Society D1.1-2004 recommendations for structural steel welding. All aluminum welding follows American Welding society and ANSI D1.2-2003 requirements for structural welding of
aluminum. All sheet metal welding follows American welding Society B2.1-2000 requirements for structural welding of sheet metal. Our flux core arc welding uses alloy rods, type 7000 and is performed to American Welding Society standards A5.20-E70T1. Furthermore, all employees classified as welders are tested and certified to meet the American welding Society codes upon hire and every three (3) years thereafter. Pierce also employs and American Welding Society certified welding inspector in plant during working hours to monitor weld quality.

Pierce Manufacturing operates a Quality Management System under the requirements of ISO 9001. These standards sponsored by the International Organization for Standardization (ISO) specify the quality systems that are established by the manufacturer for design, manufacture, installation and service. A copy of the certificate of compliance is included with this proposal.

In addition to the Quality Management system, we also employ a Quality Achievement Supplier program to insure the vendors and suppliers that we utilize meet the high standards we demand. That is just part of our overall "Quality at the Source" program at Pierce.

To demonstrate the quality of our products and services, a list of at least ten (10) fire departments/municipalities that have purchased vehicles for a second time is provided.

**DELIVERY**
The apparatus will be delivered under its own power to insure proper break-in of all components while the apparatus is still under warranty. A qualified delivery representative shall deliver the apparatus and remain for a sufficient length of time to instruct personnel in proper operation, care and maintenance of the equipment delivered.

**MANUAL AND SERVICE INFORMATION**
At time of delivery, complete operation and maintenance manuals covering the apparatus will be provided. A permanent plate will be mounted in the driver's compartment specifying the quantity and type of fluids required including engine oil, engine coolant, transmission, pump transmission lubrication, pump primer and drive axle.

**SAFETY VIDEO**
At the time of delivery Pierce will also provide one (1) 39-minute, professionally produced apparatus safety video, in DVD format. This video will address key safety considerations for personnel to follow when they are driving, operating, and maintaining the apparatus, including the following: vehicle pre-trip inspection, chassis operation, pump operation, aerial operation, and safety during maintenance.

**PERFORMANCE TESTS**
A road test will be conducted with the apparatus fully loaded and a continuous run of no less than ten (10) miles. During that time the apparatus will show no loss of power nor will it overheat. The transmission drive shaft or shafts and the axles will run quietly and be free of abnormal vibration or noise. The apparatus when fully loaded will not have less than 25 percent nor more than 50 percent on the front axle, and not less than 50 percent nor more than 75 percent on the rear axle. The apparatus will meet NFPA 1901 acceleration and braking requirements.
SERVICE AND WARRANTY SUPPORT
Pierce dealership support will be provided by South Coast Emergency Vehicle Service by operating in conjunction with a Pierce authorized service center. The service center will have factory-trained mechanics on staff versed in Pierce fire apparatus. The service facility will be located within one hundred (100) miles of the fire department.

In addition to the dealership, Pierce has service facilities located in both, Weyauwega, Wisconsin and Bradenton, Florida. Pierce also maintains a dedicated parts facility of over 100,000 square feet in Appleton, Wisconsin. The parts facility stocks in excess of $5,000,000 in parts dedicated to service and replacement parts. The parts facility employs a staff dedicated solely for the distribution and shipment of service and replacement parts.

Service parts for the apparatus being proposed can be found via Pierceparts.com which, is an interactive online tool that delivers information regarding your specific apparatus as well as the opportunity to register for training classes.

As a Pierce customer you have the ability to view the complete bill of materials for your specific apparatus, including assembly drawings, piece part drawings, and beneficial parts notations. You will also have the ability to search the complete Pierce item master through a parts search function which offers all Pierce SKU’s and descriptions offered on all Pierce apparatus. Published component catalogs, which include proprietary systems along with an extensive operators manual library is available for easy reference.

Pierce Manufacturing maintains a dedicated service and warranty staff of over 35 personnel, dedicated to customer support, which also maintains a 24 hour 7 day a week toll free hot line, four (4) on staff EVTs, and offers hands-on repair and maintenance training classes multiple times a year.

COMMERCIAL GENERAL LIABILITY INSURANCE
Certification of insurance coverage will be enclosed.

SINGLE SOURCE MANUFACTURER
Pierce Manufacturing, Inc. provides an integrated approach to the design and manufacture of our products that delivers superior apparatus and a dedicated support team. From our facilities, the chassis, cab weldment, cab, pumphouse (including the sheet metal enclosure, valve controls, piping and operators panel) and body will be entirely designed, tested, and hand assembled to the customer’s exact specifications. The electrical system either hardwired or multiplexed, will be both designed and integrated by Pierce Manufacturing. The warranties relative to these major components (excluding component warranties such as engine, transmission, axles, pump, etc.) will be provided by Pierce as a single source manufacturer. Pierce's single source solution adds value by providing a fully engineered product that offers durability, reliability, maintainability, performance, and a high level of quality.

Your apparatus will be manufactured in Appleton, Wisconsin.
**NFPA 2009 STANDARDS**
This unit will comply with the NFPA standards effective January 1, 2009, except for fire department directed exceptions. These exceptions will be set forth in the Statement of Exceptions.

Certification of slip resistance of all stepping, standing and walking surfaces will be supplied with delivery of the apparatus.

A plate that is highly visible to the driver while seated will be provided. This plate will show the overall height, length, and gross vehicle weight rating.

The manufacturer will have programs in place for training, proficiency testing and performance for any staff involved with certifications.

An official of the company will designate, in writing, who is qualified to witness and certify test results.

**NFPA COMPLIANCE**
Apparatus proposed by the bidder will meet the applicable requirements of the National Fire Protection Association (NFPA) as stated in current edition at time of contract execution. Fire department's specifications that differ from NFPA specifications will be indicated in the proposal as "non-NFPA".

**VEHICLE INSPECTION PROGRAM CERTIFICATION**
To assure the vehicle is built to current NFPA standards, the apparatus, in its entirety, will be third-party, audit-certified through Underwriters Laboratory (UL) that it is built and complies to all applicable standards in the current edition of NFPA 1901. The certification will include: all design, production, operational, and performance testing of not only the apparatus, but those components that are installed on the apparatus.

A placard will be affixed in the driver’s side area stating the third party agency, the date, the standard and the certificate number of the whole vehicle audit.

**PUMP TEST**
Underwriters Laboratory (UL) will test, approved, and certify the pump. The test results and the pump manufacturer’s certification of hydrostatic test; the engine manufacturer’s certified brake horsepower curve; and the pump manufacturer’s record of pump construction details will be forwarded to the Fire Department.

**GENERATOR TEST**
If the unit has a generator, Underwriters Laboratory (UL) will test, approved, and certify the generator. The test results will be provided to the Fire Department at the time of delivery.

**BREATHING AIR TEST**
If the unit has breathing air, Pierce Manufacturing will draw an air sample from the air system and have the sample certified that the air quality meets the requirements of NFPA 1989, *Standard on Breathing Air Quality for Fire and Emergency Services Respiratory Protection.*
BID BOND NOT REQUESTED
A bid bond will not be included. If requested, the following will apply:

All bidders will provide a bid bond as security for the bid in the form of a 5% bid bond to accompany their bid. This bid bond will be issued by a Surety Company who is listed on the U.S. Treasury Departments list of acceptable sureties as published in Department Circular 570. The bid bond will be issued by an authorized representative of the Surety Company and will be accompanied by a certified power of attorney dated on or before the date of bid. The bid bond will include language, which assures that the bidder/principal will give a bond or bonds as may be specified in the bidding or contract documents, with good and sufficient surety for the faithful performance of the contract, including the Basic One (1) Year Limited Warranty, and for the prompt payment of labor and material furnished in the prosecution of the contract.

Notwithstanding any document or assertion to the contrary, any surety bond related to the sale of a vehicle will apply only to the Basic One (1) Year Limited Warranty for such vehicle. Any surety bond related to the sale of a vehicle will not apply to any other warranties that are included within this bid (OEM or otherwise) or to the warranties (if any) of any third party of any part, component, attachment or accessory that is incorporated into or attached to the vehicle. In the event of any contradiction or inconsistency between this provision and any other document or assertion, this provision will prevail.

PERFORMANCE BOND
Notwithstanding any document or assertion to the contrary, any surety bond related to the sale of a vehicle will apply only to the Basic One (1) Year Limited Warranty for such vehicle. Any surety bond related to the sale of a vehicle will not apply to any other warranties that are included within this bid (OEM or otherwise) or to the warranties (if any) of any third party of any part, component, attachment or accessory that is incorporated into or attached to the vehicle. In the event of any contradiction or inconsistency between this provision and any other document or assertion, this provision will prevail.

APPROVAL DRAWING
A drawing of the proposed apparatus will be prepared and provided to the purchaser for approval before construction begins. The Pierce sales representative will also be provided with a copy of the same drawing. The finalized and approved drawing will become part of the contract documents. This drawing will indicate the chassis make and model, location of the lights, siren, horns, compartments, major components, etc.

A "revised" approval drawing of the apparatus will be prepared and submitted by Pierce to the purchaser showing any changes made to the approval drawing.

FINAL DRAWING
There will be a revised drawing of the truck with all the changes made during production provided at pickup.
DRAWING, COMPARTMENT LAYOUT
A basic drawing will be provided for the interior body compartments. This drawing will be provided for graphic representation only and will include such things as shelves, trays, reels, dividers, air control panels, air bottle storage bins, poly boxes & etc.

ELECTRICAL WIRING DIAGRAMS
Three (3) compact discs containing "As-Built" electrical wiring diagrams specifically prepared for the chassis and body will be provided. The diagrams will consist of information pertaining to the 12 VDC systems only. Two (2) CDs will be shipped with the loose equipment with each truck. One (1) CD will be included with the job folder at apparatus builders facility for future reference.

Each CD will include the following capabilities:

- The capability of viewing each separate diagram.
- The capability of zooming in on any section of each separate diagram.
- The capability of printing each separate diagram.
- The capability of printing each zoomed in area of each separate diagram.

Each CD will include the following items:

- Title page, identifying the job number and chassis model.
- Table of contents.
- Truck specific electrical compartment and instrument layouts for the chassis.
- Truck specific electrical compartment layouts for the body.
- Applicable drawings from the appropriate standard wiring diagrams.
- All truck specific wiring diagrams (special drawings).
- Harness drawings for all wiring harnesses used on the chassis.
- Harness drawings for all wiring harnesses used on the body.
- All truck input and output programming sheets (multiplexed trucks only).

There will be no hard copies of these diagrams required for this unit.

ARROW XT CHASSIS
The Pierce Arrow XT™ is the custom chassis developed exclusively for the fire service. The chassis provided will be a new, tilt-type custom fire apparatus. The chassis will be manufactured in the apparatus body builder's facility eliminating any split responsibility. The chassis will be designed and manufactured for heavy duty service, with adequate strength, capacity for the intended load to be sustained, and the type of service required. The chassis will be the manufacturer's heavy duty line tilt cab.

WHEELBASE
The wheelbase of the vehicle will be 177.50.

GVW RATING
The gross vehicle weight rating will be 43,500.
FRAME
The chassis frame will be built with two (2) steel channels bolted to five (5) cross members or more, depending on other options of the apparatus. The side rails will have a 13.38" tall web over the front and mid sections of the chassis, with a continuous smooth taper to 10.75" over the rear axle. Each rail will have a section modulus of 25.992 cubic inches and a resisting bending moment (rbm) of 3,119,040 in-lb over the critical regions of the frame assembly, with a section modulus of 18.96 cubic inches with an rbm of 2,275,200 in-lb over the rear axle. The frame rails will be constructed of 120,000 psi yield strength heat-treated 0.38" thick steel with 3.50" wide flanges.

FRAME REINFORCEMENT
In addition, a mainframe inverted "L" liner will be provided. It will be heat-treated steel measuring 12.00" x 3.00" x 0.25". Each liner will have a section modulus of 7.795 cubic inches, yield strength of 110,000 psi, and rbm of 857,462 in-lb. Total rbm at wheelbase center will be 3,976,502 in-lb.

The frame liner will be mounted inside of the chassis frame rail, beginning at the front edge of the mainframe rail and extending to the rear cab cross member.

FRONT NON DRIVE AXLE
The Oshkosh TAK-4® front axle will be of the independent suspension design with a ground rating of 19,500 lb.

Upper and lower control arms will be used on each side of the axle. Upper control arm castings will be made of 100,000 psi yield strength 8630 steel and the lower control arm casting will be made of 55,000 psi yield ductile iron.

The center cross members and side plates will be constructed out of 80,000 psi yield strength steel.

Each control arm will be mounted to the center section using elastomer bushings. These rubber bushings will rotate on low friction plain bearings and be lubricated for life. Each bushing will also have a flange end to absorb longitudinal impact loads, reducing noise and vibrations.

There will be nine (9) grease fittings supplied, one (1) on each control arm pivot and one (1) on the steering gear extension.

The upper control arm will be shorter than the lower arm so that wheel end geometry provides positive camber when deflected below rated load and negative camber above rated load.

Camber at load will be 0 degrees for optimum tire life.

The ball joint bearing will be of low friction design and be maintenance free.

Toe links that are adjustable for alignment of the wheel to the center of the chassis will be provided.

The wheel ends must have little to no bump steer when the chassis encounters a hole or obstacle.

The steering linkage will provide proper steering angles for the inside and outside wheel, based on the vehicle wheelbase.
The axle will have a third party certified turning angle of 45 degrees. Front discharge, front suction, or aluminum wheels will not infringe on this cramp angle.

**FRONT SUSPENSION**

Front Oshkosh TAK-4™ independent suspension will be provided with a minimum ground rating of 19,500 lb.

The independent suspension system will be designed to provide maximum ride comfort. The design will allow the vehicle to travel at highway speeds over improved road surfaces and at moderate speeds over rough terrain with minimal transfer of road shock and vibration to the vehicle's crew compartment.

Each wheel will have torsion bar type spring. In addition, each front wheel end will also have energy absorbing jounce bumpers to prevent bottoming of the suspension.

The suspension design will be such that there is at least 10.00" of total wheel travel and a minimum of 3.75" before suspension bottoms.

The torsion bar anchor lock system allows for simple lean adjustments, without the use of shims. One can adjust for a lean within 15 minutes per side. Anchor adjustment design is such that it allows for ride height adjustment on each side.

The independent suspension was put through a durability test that simulated 140,000 miles of inner city driving.

**FRONT SHOCK ABSORBERS**

KONI heavy-duty telescoping shock absorbers will be provided on the front suspension.

**FRONT OIL SEALS**

Oil seals with viewing window will be provided on the front axle.

**FRONT TIRES**

Front tires will be Goodyear 425/65R22.50 radials, 20 ply G296 WHA tread, rated for 22,800 lb maximum axle load and 68 mph maximum speed.

The tires will be mounted on Alcoa 22.50" x 12.25" polished aluminum disc type wheels with a ten (10)stud, 11.25" bolt circle.

**REAR AXLE**

The rear axle will be Meritor™, Model RS-24-160, with a capacity of 24,000 lb.

**TOP SPEED OF VEHICLE**

NFPA 1901, 2009 edition requires limits on the top speed of vehicles. NFPA 4.15.2 requires that the maximum top speed of fire apparatus with a GVWR over 26,000 lb will not exceed either 68 mph or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower. NFPA 4.15.3 requires that if the combined water tank and foam agent tank on the fire
apparatus exceed 1250 gallons or the GVWR of the vehicle is over 50,000 lb, the maximum top speed of the apparatus will not exceed either 60 mph or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower. It is the intention of the standard to improve safety by limiting the speed of all apparatus to 68 mph, and tankers or heavy apparatus to 60 mph. By requesting an exception to this requirement, the purchasing authority is consciously choosing to operate their apparatus at speeds above the limits designated as safe speeds by the NFPA Technical Committee on Fire Department Apparatus.

The top speed of the apparatus as manufactured exceeds the NFPA requirements. Per fire department specification of a top speed that exceeds NFPA requirements, the apparatus will be non-compliant to NFPA 1901 standards at time of contract execution.

A rear axle ratio will be furnished to allow the vehicle to reach an approximate top speed of 73 MPH.

**REAR SUSPENSION**
The rear springs will be Standens semi-elliptical, 3.00" x 52.00", 12 leaves main with a ground rating of 27,000 lb. Castings will be used for spring hangers with provisions for lubrication. The grease fittings will be 90 degree type and will be accessible without removing the wheels or cutting any sheet metal. The two (2) top leaves will wrap the forward spring hanger pin and the top leaf will wrap the rear spring hanger pin on both the front and rear suspensions.

Kaiser spring pins will be provided, with double figure-eight grease grooves and a layer of electroless nickel plating, 1.0 mil thick, around the entire pin. The bushing that holds the spring pin in place will also have a grease groove.

**REAR OIL SEALS**
Oil seals will be provided on the rear axle(s).

**REAR TIRES**
Rear tires will be four (4) Goodyear 315/80R22.50 radials with 20 ply G289 WHA tread, rated for 36,360 lb maximum axle load and 68 mph maximum speed.

The tires will be mounted on Accuride® 22.50" x 9.00" polished aluminum disc wheels with a ten (10) stud, 11.25" bolt circle.

**TIRE BALANCE**
All tires will be balanced with Counteract balancing beads. The beads will be inserted into the tire and eliminate the need for wheel weights.

**TIRE PRESSURE MANAGEMENT**
There will be a RealWheels LED AirSecure™ tire alert pressure management system provided, that will monitor each tire's pressure. A sensor will be provided on the valve stem of each tire for a total of six (6) tires.
The sensor will calibrate to the tire pressure when installed on the valve stem for pressures between 10 and 200 psi. The sensor will activate an integral battery operated LED when the pressure of that tire drops 5 to 8 psi.

Removing the cap from the sensor will indicate the functionality of the sensor and battery. If the sensor and battery are in working condition, the LED will immediately start to flash.

**FRONT HUB COVERS**
Stainless steel hub covers will be provided on the front axle. An oil level viewing window will be provided.

**REAR HUB COVERS**
A pair of stainless steel high hat hub covers will be provided on rear axle hubs.

**CHROME LUG NUT COVERS**
Chrome lug nut covers will be supplied on front and rear wheels.

**MUD FLAPS**
Mud flaps with a Pierce logo will be installed behind the front and rear wheels.

**WHEEL CHOCKS**
There will be one (1) pair of folding Zlamatic, Model SAC-44-E, aluminum alloy, Quick-Choc wheel blocks, with easy-grip handle provided.

**WHEEL CHOCK BRACKETS**
There will be one (1) pair of Zico, Model SQCH-44-H, horizontal mounting wheel chock brackets provided for the Zlamatic, Model SAC-44-E, folding wheel chocks. The brackets will be made of aluminum and consist of a quick release spring loaded rod to hold the wheel chocks in place. The brackets will be mounted one (1) forward and one (1) rearward of the left side rear tire.

**ANTI-LOCK BRAKE SYSTEM**
The vehicle will be equipped with a Meritor WABCO 4S4M, anti-lock braking system. The ABS will provide a 4-channel anti-lock braking control on both the front and rear wheels. A digitally controlled system that utilizes microprocessor technology will control the anti-lock braking system. Each wheel will be monitored by the system. When any particular wheel begins to lockup, a signal will be sent to the control unit. This control unit then will reduce the braking of that wheel for a fraction of a second and then reapply the brake. This anti-lock brake system will eliminate the lockup of any wheel thus helping to prevent the apparatus from skidding out of control.

**BRAKES**
The service brake system will be full air type.

The front brakes will be Knorr/Bendix disc type with a 17.00" ventilated rotor for improved stopping distance.

The brake system will be certified, third party inspected, for improved stopping distance.
The rear brakes will be Meritor®, Disc Plus, Model EX225, disc operated with automatic slack adjusters and a 17.00" ventilated rotor for improved stopping distance.

**AIR COMPRESSOR, BRAKE SYSTEM**
The air compressor will be a Bendix®, Model BA-921, with 15.80 cubic feet per minute output at 1,250 rpm.

**BRAKE SYSTEM**
The brake system will include:

- Bendix® dual brake treadle valve with vinyl covered foot surface
- Heated automatic moisture ejector on air dryer
- Total air system capacity of 4,362 cubic inches
- Two (2) air pressure gauges with a red warning light and an audible alarm, that activates when air pressure falls below 60 psi
- Spring set parking brake system
- Parking brake operated by a push-pull style control valve
- A parking "brake on" indicator light on instrument panel
- Park brake relay/inversion and anti-compounding valve, in conjunction with a double check valve system, with an automatic spring brake application at 40 psi
- A pressure protection valve to prevent all air operated accessories from drawing air from the air system when the system pressure drops below 80 psi (550 kPa)

The air tank will be primed and painted to meet a minimum 750 hour salt spray test.

To reduce the effects of corrosion, the air tank will be mounted with stainless steel brackets.

**BRAKE SYSTEM AIR DRYER**
The air dryer will be WABCO System Saver 1200 with spin-on coalescing filter cartridge and 100 watt heater.

**BRAKE LINES**
Color-coded nylon brake lines will be provided. The lines will be wrapped in a heat protective loom in the chassis areas that are subject to excessive heat.

**AIR INLET/OUTLET**
One (1) air inlet/outlet will be installed recessed with the female coupling located in the driver side lower step well of cab. This system will tie into the "wet" tank of the brake system and include a check valve in the inlet line and an 85 psi pressure protection valve in the outlet line. The air outlet will be controlled by a needle valve.

A mating male fitting will be provided with the loose equipment.

The air inlet will allow a shoreline air hose to be connected to the vehicle. This will allow station air to be supplied to the brake system of the vehicle to insure constant air pressure.
AUTOMATIC MOISTURE EJECTOR(S)
Four (4) automatic moisture ejectors will be installed in the brake system.

The moisture ejector(s) will be provided on the below the D3 compartment reservoir(s).

ENGINE
The chassis will be powered by an electronically controlled engine as described below:

<table>
<thead>
<tr>
<th>Make:</th>
<th>Detroit™</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model:</td>
<td>DD13®</td>
</tr>
<tr>
<td>Power:</td>
<td>505 hp at 1625 rpm</td>
</tr>
<tr>
<td>Torque:</td>
<td>1750 lb-ft at 1075 rpm</td>
</tr>
<tr>
<td>Governed Speed:</td>
<td>2200 rpm</td>
</tr>
<tr>
<td>Emissions Certification:</td>
<td>EPA 2016 (GHG17)</td>
</tr>
<tr>
<td>Fuel:</td>
<td>Diesel</td>
</tr>
<tr>
<td>Cylinders:</td>
<td>Six (6)</td>
</tr>
<tr>
<td>Displacement:</td>
<td>781 cubic inches (12.8L)</td>
</tr>
<tr>
<td>Starter:</td>
<td>Delco Remy 39MT™</td>
</tr>
<tr>
<td>Fuel Filters:</td>
<td>Dual cartridge style with check valve, water separator, and water in fuel sensor</td>
</tr>
</tbody>
</table>

The engine will include On-board diagnostics (OBD), which provides self diagnostic and reporting. The system will give the owner or repair technician access to state of health information for various vehicle sub systems. The system will monitor vehicle systems, engine and after treatment. The system will illuminate a malfunction indicator light on the dash console if a problem is detected.

REPTO DRIVE
A rear engine power take off will be provided to drive the water pump. A vibration dampener will be provided between the REPTO and water pump. Transmission PTO's used to drive the water pump will not be allowed due to their lower torque ratings. The rear engine power take off will be the same as used extensively throughout the construction industry. Rear engine PTO's allow for continuous 240 hp and 480 lb-ft torque ratings needed for large pump applications. The rear engine power take off will have the same warranty as the engine provided by the engine manufacturer.

HIGH IDLE
A high idle switch will be provided, inside the cab, on the instrument panel, that will automatically maintain a preset engine rpm. A switch will be installed, at the cab instrument panel, for activation/deactivation.

The high idle will be operational only when the parking brake is on and the truck transmission is in neutral. A green indicator light will be provided, adjacent to the switch. The light will illuminate when the above conditions are met. The light will be labeled "OK to Engage High Idle."
ENGINE BRAKE
A Jacobs® engine brake is to be installed with the controls located on the instrument panel within easy reach of the driver.

The driver will be able to turn the engine brake system on/off and have a high, medium and low setting.

The engine brake will be installed in such a manner that when the engine brake is slowing the vehicle the brake lights are activated.

The ABS system will automatically disengage the auxiliary braking device when required.

CLUTCH FAN
A Horton® fan clutch will be provided. The fan clutch will be automatic when the pump transmission is in "Road" position, and fully engaged in "Pump" position.

ENGINE AIR INTAKE
The air intake with an ember separator will be mounted high on the passenger side of the cab, to the front of the crew cab door. The ember separator is designed to prevent road dirt and recirculating hot air from entering the engine. The ember separator will be easily accessible through a hinged stainless steel grille, with one (1) flush quarter turn latch.

EXHAUST SYSTEM
The exhaust system will include a diesel particulate filter (DPF) and a selective catalytic reduction (SCR) device to meet current EPA standards. The exhaust system will be stainless steel from the turbo to the inlet of the SCR device and will be 5.00" in diameter. An insulation wrap will be provided on all exhaust pipes between the turbo and SCR to minimize the transfer of heat to the cab. The exhaust will terminate horizontally ahead of the passenger side rear wheels. A tailpipe diffuser will be provided to reduce the temperature of the exhaust as it exits. Heat deflector shields will be provided to isolate chassis and body components from the heat of the tailpipe diffuser.

EXHAUST MODIFICATION
The exhaust pipe will be brought out from under the body at a 90 degree angle from the truck. The tail pipe will extend a minimum of 2.00" past the body, adaptable for the MagneGrip system. The diameter of the pipe will be 5.00". There will be a clearance of 4.00" completely around the pipe once past the side of the body. A stop will be provided on the tail pipe that will prevent the nozzle from sliding too far on.

RADIATOR
The radiator and the complete cooling system will meet or exceed NFPA and engine manufacturer cooling system standards.

For maximum cooling performance, the radiator core will be made of copper fins having a serpentine design, soldered to brass tubes. The tubes will be welded to brass headers using the patented Beta-Weld process for increased strength, longer road life and solder-bloom corrosion protection. The
radiator core will have a minimum frontal area of 1,396 square inches. Steel supply and return tanks will be bolted to the core headers and steel side channels to complete the radiator assembly. The radiator will be compatible with commercial antifreeze solutions.

The radiator will be mounted in such a manner as to prevent the development of leaks caused by twisting or straining when the apparatus operates over uneven ground. The radiator assembly will be isolated from the chassis frame rails with rubber isolators.

The radiator will include an integral de-aeration tank, with a remote-mounted overflow tank. For visual coolant level inspection, the radiator will have a built-in sight glass. The radiator will be equipped with a 15 psi pressure relief cap.

A drain port will be located at the lowest point of the cooling system and/or the bottom of the radiator to permit complete flushing of the coolant from the system.

A heavy-duty fan will draw in fresh, cool air through the radiator. Shields or baffles will be provided to prevent recirculation of hot air to the inlet side of the radiator.

**COOLANT LINES**
Gates® silicone hoses will be used for all engine/heater coolant lines installed by the chassis manufacturer.

The chassis manufacturer will also use Gates brand hose on other heater, defroster and auxiliary coolant circuits. There will be some areas in which an appropriate Gates product is not available. In those instances a comparable silicone hose from another manufacturer will be used.

Hose clamps will be stainless steel constant torque type to prevent coolant leakage. They will react to temperature changes in the cooling system and expand or contract accordingly while maintaining a constant clamping pressure on the hose.

**FUEL TANK**
A 65 gallon fuel tank will be provided and mounted at the rear of the chassis. The tank will be constructed of unpainted stainless steel. It will be equipped with swash partitions and a vent. To reduce the effects of corrosion, the fuel tank will be mounted with stainless steel straps.

A .75" drain plug will be located in a low point of the tank for drainage.

A fill inlet will be located on the left hand side of the body and is covered with a hinged, spring loaded, stainless steel door that is marked "Ultra Low Sulfur - Diesel Fuel Only".

A .50" diameter vent will be installed from tank top to just below fuel fill inlet.

The fuel tank will meet all FHWA 393.67 requirements, including a fill capacity of 95 percent of tank volume.

All fuel lines will be provided as recommended by the engine manufacturer.
DIESEL EXHAUST FLUID TANK
A 4.5 gallon diesel exhaust fluid (DEF) tank will be provided and mounted in the driver's side body rearward of the rear axle.

A 0.50" drain plug will be provided in a low point of the tank for drainage.

A fill inlet will be provided and marked "Diesel Exhaust Fluid Only". The fill inlet will be located adjacent to the engine fuel inlet behind a common hinged, spring loaded, painted door on the driver side of the vehicle.

The tank will meet the engine manufacturers requirement for 10 percent expansion space in the event of tank freezing.

The tank will include an integrated heater unit that utilizes engine coolant to thaw the DEF in the event of freezing.

AUXILIARY FUEL PUMP
An auxiliary electric fuel pump will be added to the fuel line for priming the engine. A switch located on the cab instrument panel will be provided to operate the pump.

FUEL COOLER
An air to fuel cooler will be installed in the engine fuel return line.

TRANSMISSION
An Allison 5th generation, Model EVS 4000P, electronic, torque converting, automatic transmission will be provided.

The transmission will be equipped with prognostics to monitor oil life, filter life, and transmission health. A wrench icon on the shift selector’s digital display will indicate when service is due.

Two (2) PTO openings will be located on left side and top of converter housing (positions 8 o'clock and 1 o'clock).

A transmission temperature gauge with red light and buzzer will be installed on the cab instrument panel.

TRANSMISSION SHIFTER
A six (6)-speed push button shift module with the five (5) + one (1) "Mode" button will be mounted to right of driver on console. Shift position indicator will be indirectly lit for after dark operation.

The transmission ratio will be:

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<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>1st</td>
<td>3.51 to 1.00</td>
</tr>
<tr>
<td>2nd</td>
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</tr>
<tr>
<td>3rd</td>
<td>1.43 to 1.00</td>
</tr>
<tr>
<td>4th</td>
<td>1.00 to 1.00</td>
</tr>
<tr>
<td>5th</td>
<td>0.75 to 1.00</td>
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<tr>
<td>-----</td>
<td>-------------</td>
</tr>
<tr>
<td>6th</td>
<td>0.64 to 1.00</td>
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<tr>
<td>R</td>
<td>4.80 to 1.00</td>
</tr>
</tbody>
</table>

TRANSMISSION PROGRAMMING
The transmission will be programmed to automatically shift the transmission to neutral when the parking brake is set to simplify operation and increase operational safety.

TRANSMISSION COOLER
A transmission oil cooler will be provided that is integral to the radiator and located at the bottom of the radiator. The cooler will use engine coolant to control the transmission oil temperature.

TRANSMISSION FLUID
The transmission will be provided with TranSynd, or other Allison approved TES-295 heavy duty synthetic transmission fluid.

DRIVELINE
Drivelines will be a heavy-duty metal tube and be equipped with Spicer® 1810 universal joints.

The shafts will be dynamically balanced before installation.

A splined slip joint will be provided in each driveshaft. The slip joint will be coated with Glidecoat® or equivalent.

STEERING
Dual Sheppard, Model M110, steering gears, with integral heavy-duty power steering, will be provided.
For reduced system temperatures, the power steering will incorporate an air to oil cooler and an Eaton, Model VN20, hydraulic pump with integral pressure and flow control. All power steering lines will have wire braded lines with crimped fittings.

A tilt and telescopic steering column will be provided to improve fit for a broader range of driver configurations.

STEERING WHEEL
The steering wheel will be 18.00" in diameter, have tilting and telescoping capabilities, and a 4-spoke design.

LOGO AND CUSTOMER DESIGNATION ON DASH
The dash panel will have an emblem containing the Pierce logo and customer name. The emblem will have three (3) rows of text for the customer's department name. There will be a maximum of eight (8) characters in the first row, 11 characters in the second row and 11 characters in the third row.

The first row of text will be: City of

The second row of text will be: El Segundo
The third row of text will be: Fire Dept.

**BUMPER**
A one (1) piece, ten (10) gauge, 304-2B type polished stainless steel bumper, minimum of 10.00" high, will be attached to a bolted modular extension frame constructed of 50,000 psi tensile steel "C" channel mounted directly behind it to provide adequate support strength.

The bumper will be extended 16.00" from front face of cab.

Documentation will be provided, upon request, to show that the options selected have been engineered for fit-up and approval for this modular bumper extension. A chart will be provided to indicate the option locations and will include, but not be limited to, the following options: air horns, mechanical sirens, speakers, hose trays (with hose capacities), winches, lights, discharge, and suction connections.

**GRAVEL PAN**
A gravel pan, constructed of bright aluminum treadplate, will be furnished between the bumper and cab face. The gravel pan will be properly supported from the underside to prevent flexing and vibration of the aluminum treadplate.

**HOSE TRAY**
A hose tray, constructed of aluminum, will be placed in the center of the bumper extension.

The tray will have a capacity of 100' of 1.75" double jacket cotton-polyester hose.

Black rubber grating will be provided at the bottom of the tray. Drain holes are also provided.

**CENTER TRAY COVER**
A bright aluminum treadplate cover will be provided over the center tray.

The cover will be attached with a stainless steel hinge.

The drop down bumper will secure the cover in the closed position and a mechanical stay arm on each side will hold the cover in the open position.

**RIGHT SIDE HOSE TRAY**
A hose tray will be placed in the right side of the extended bumper.

The tray will have a capacity of 25' of 4.00" double jacket cotton-polyester hose.

Black rubber grating will be provided at the bottom of the tray. Drain holes will be provided.

**LIFT AND TOW MOUNTS**
Mounted to the frame extension will be lift and tow mounts. The lift and tow mounts will be designed and positioned to adapt to certain tow truck lift systems.

The lift and tow mounts with eyes will be painted the same color as the frame.
**TOW HOOKS**
Two (2) chrome steel tow hooks will be installed under the bumper and attached to the front frame members. The tow hooks will be designed and positioned to allow up to a 6,000 lb straight horizontal pull in line with the centerline of the vehicle. The tow hooks will not be used for lifting of the apparatus.

**TOW EYES**
Two (2) Chicago style tow eyes will be mounted through the top of the bumper extension. The tow eyes will be designed and positioned to allow up to a 6,000 lb straight horizontal pull in line with the centerline of the vehicle. The tow eyes will not be used for lifting of the apparatus.

The inner and outer edges of the tow eyes will have a .25" radius.

The tow eyes will be chrome plated.

**HINGED CENTER SECTION**
The center section of the bumper will be hinged at the bottom. Two (2) pawl latches will hold the section in the closed position.

**DROP DOWN BUMPER SECTION WITH COVER**
A passenger side section of the front bumper will be hinged to drop down, providing access to the hose tray.

A bright aluminum treadplate cover will be provided. The cover will tuck under the top flange of the drop down section of the bumper and will be secured by the drop down section of the bumper.

Two (2) flush lift and turn latches will be provided in the drop down section of the bumper.

**FRONT BUMPER NOTCH**
The front bumper will be notched for recessing of the Q2B siren. The notch will be designed so that the bumper is one (1) continuous piece. The notch will be welded in place for strength with a continuous top and bottom flange. All areas will be polished for appearance. The siren will be located on the driver side of the bumper.

**CAB**
The Arrow XT cab will be designed specifically for the fire service and will be manufactured by the chassis builder.

The cab will be built by the apparatus manufacturer in a facility located on the manufacturer's premises.

For reasons of structural integrity and enhanced occupant protection, the cab will be of heavy duty design, constructed to the following minimal standards.

The cab will have 12 main vertical structural members located in the A-pillar (front cab corner posts), B-pillar (side center posts), C-pillar (rear corner posts) and rear wall areas. The A-pillar will be
constructed of solid A356-T5 aluminum. The B-pillar and C-pillar will be constructed from 0.25" heavy wall extrusions. The rear wall will be constructed of two (2) 4.00" x 2.00" outer aluminum extrusions and two (2) 3.00" x 2.00" inner aluminum extrusions. All main vertical structural members will run from the floor to 6.50" x 4.875" x 0.1875" thick roof extrusions to provide a cage-like structure with the A-pillar and roof extrusions being welded into a 0.36" thick corner casting at each of the front corners of the roof assembly.

The front of the cab will be constructed of a 0.25" thick gusset plate, covered with a 0.090" front skin (for a total thickness of 0.34"), and reinforced with a 95.00" wide x 11.13" deep x 0.50" thick cross-cab support located just below the windshield. The cross-cab support will run the full width of the cab and weld to each A-pillar, the 0.25" thick gusset plate and the front skin.

The cab floors will be constructed of 0.1875" thick aluminum plate and reinforced at the firewall with an additional 0.50" thick cross-floor support providing a total thickness of 0.6875" of structural material at the front floor area. The front floor area will also be supported with one (1) 0.50" plate bolted to one (1) 0.78" plate that also provides the mounting point for the cab lift. This tubing will run from the front of the cab to the 0.187" thick engine tunnel, creating the structure to support the forces created when lifting the cab.

The cab will be 94.75" wide (outside door skin to outside door skin) to maintain maximum maneuverability.

The forward cab section will have an overall height (from the cab roof to the ground) of approximately 103.00". The crew cab section will have a 10.00" raised roof, with an overall cab height of approximately 113.00". The overall height listed will be calculated based on a truck configuration with the lowest suspension weight ratings, the smallest diameter tires for the suspension, no water weight, no loose equipment weight, and no personnel weight. Larger tires, wheels, and suspension will increase the overall height listed.

The floor to ceiling height inside the crew cab will be 62.00" in the center and 69.25" in the outboard positions.

The crew cab floor will measure 40.12" from rear wall to the back side of engine tunnel.

The engine tunnel, at the rearward highest point (knee level), will measure 47.75" to the back wall.

The crew cab will be of the totally enclosed design with access doors constructed in the same manner as the driver and passenger doors.

The cab will be a full tilt cab style.

A 3-point cab mount system with rubber isolators will improve ride quality by isolating chassis vibrations from the cab.
**CAB PUMP ENCLOSURE**
The rear of the cab will be made to house the fire pump below the forward facing crew cab seats. The cab side panels will be notched to accommodate the pump panel.

**INTERIOR CAB INSULATION**
The cab will include 1.50" insulation in the ceiling and side walls, and 2.00" insulation in the rear wall to maximize acoustic absorption and thermal insulation.

**FENDER LINERS**
Full circular inner fender liners in the wheel wells will be provided.

**WINDSHIELD**
A curved safety glass windshield will be provided with over 2,754 square inches of clear viewing area. The cab windshield will have bright trim inserts in the rubber molding holding the glass in place. Economical windshield replacement glass will be readily available from local auto glass suppliers.

All cab glass will be tinted.

**WINDSHIELD WIPERS**
Two (2) electric windshield wipers with washer will be provided that meet FMVSS and SAE requirements.

The washer reservoir will be able to be filled without raising the cab.

**GLOVE BOX**
A glove box with a drop-down door will be installed in the front dash panel in front of the officer's position.

**ENGINE TUNNEL**
Engine hood side walls will be constructed of 0.50" aluminum. The top will be constructed of 0.19" aluminum and will be tapered at the top to allow for more driver and passenger elbow room.

The engine hood will be insulated for protection from heat and sound. The noise insulation keeps the dBA level within the limits stated in the current NFPA 1901 standards.

**CAB REAR WALL EXTERIOR COVERING**
The exterior surface of the rear wall of the cab will be overlaid with bright aluminum treadplate except for areas that are not typically visible when the cab is lowered.

**CAB LIFT**
A hydraulic cab lift system will be provided consisting of an electric powered hydraulic pump, dual lift cylinders, and necessary hoses and valves.

The hydraulic pump will have a manual override for backup in the event of electrical failure.

The cab tilt master switch will be located in the D3 compartment.
In addition to the panel controls, a 15' remote control will be provided for raising and lowering the cab. The remote control will be stored in the cab. The receptacle for the remote control will be located on the passenger side of extended bumper extension.

The engine will be easily accessible and capable of being removed with the cab tilted. The cab will be capable of tilting 45 degrees and 90 degrees with crane assist.

Cab will be locked down by a two (2)-point automatic spring-loaded hook mechanism that actuates after the cab has been lowered.

The hydraulic cylinders will be equipped with a velocity fuse that protects the cab from accidentally descending when the control is located in the tilt position.

For increased safety, a redundant mechanical stay arm will be provided that must be manually put in place on the driver side between the chassis and cab frame when cab is in the raised position. This device will be manually stowed to its original position before the cab can be lowered.

**Cab Lift Interlock**
The cab lift system will be interlocked to the parking brake. The cab tilt mechanism will be active only when the parking brake is set and the ignition switch is in the on position. If the parking brake is released, the cab tilt mechanism will be disabled.

**GRILLE**
a bright finished aluminum mesh grille screen, inserted behind a bright finished grille surround, will be provided on the front center of the cab.

**SIDE OF CAB MOLDING**
Chrome molding will be provided on both sides of cab.

**MIRRORS**
Lang Mekra, 300 series, West Coast style remote control mirrors will be mounted on each of the cab doors. The mirrors will have a bright chrome finish. The mirror reflective surface dimension will be 7.00" wide x 16.00" high. The mirror housing will have a single point mount and will be of an aerodynamic design with outer dimensions of 7.25" wide x 16.25" high.

A 7.00" wide x 7.00" high chrome convex mirror will be mounted below the main mirror.

The controls for the flat mirrors will be within reach of the driver.

**DOORS**
To enhance entry and egress to the cab, the forward cab doors will be a minimum of 37.50" wide x 61.75" high. The crew cab doors will be located on the sides of the cab and will be constructed in the same manner as the forward cab doors. The crew cab doors will measure a minimum of 34.88" wide x 71.75" high.
The forward cab and crew cab doors will be constructed of extruded aluminum with a nominal material thickness of 0.125". The exterior door skins will be constructed from 0.090" aluminum.

A flush mounted, chrome plated paddle type door handle will be provided on the exterior of each cab door. Each door will also be provided with an interior flush paddle handle.

The cab doors will be provided with both interior (rotary knob) and exterior (keyed) locks as required by FMVSS 206. The locks will be capable of activating when the doors are open or closed. The doors will remain locked if locks are activated when the doors are opened, then closed.

A full length, heavy duty, stainless steel, piano-type hinge with a 0.38" pin and 11 gauge leaf will be provided on all cab doors. There will be double automotive-type rubber seals around the perimeter of the door framing and door edges to ensure a weather-tight fit.

A chrome grab handle will be provided on the inside of each cab and crew cab door.

The cab steps at each door location will be located below the cab doors and will be exposed to the exterior of the cab.

**DOOR PANELS**
There will be a full height polished stainless steel door panel installed on the inside of all cab doors. The cab door panels will be removable without disconnecting door and window mechanisms.

**ELECTRIC OPERATED CAB DOOR WINDOWS**
All four (4) cab doors will be equipped with electric operated windows with flush mounted automotive style switches.

The driver’s side lower instrument panel will also have three (3) controls, officer’s door window and both crew cab door windows.

**CAB STEPS**
The forward cab and crew cab access steps will be a full size two (2) step design to provide largest possible stepping surfaces for safe ingress and egress. The bottom steps will be designed with a grip pattern punched into bright aluminum treadplate material to provide support, slip resistance, and drainage. The bottom steps will be a bolt-in design to minimize repair costs should they need to be replaced. The forward cab steps will be a minimum 24.75" wide, and the crew cab steps will be 21.25" wide with an 8.00" minimum depth. The inside cab steps will not exceed 18.00" in height and be limited to two (2) steps. Three (3) step entrance designs will not be acceptable due to safety concerns. A slip-resistant handrail will be provided adjacent to each cab door opening to assist during cab ingress and egress.

**STEP LIGHTS**
For reduced overall maintenance costs compared to incandescent lighting, there will be four (4) white LED step lights provided. The lights will be installed at each cab and crew cab door, one (1) per step. The lights will be located in the driver side front doorstep, driver side crew cab doorstep, passenger side front doorstep and passenger side crew cab doorstep.
In order to ensure exceptional illumination, each light will provide a minimum of 25 foot-candles (fc) covering an entire 15.00" x 15.00" square placed 10.00" below the light and a minimum of 1.5 fc covering an entire 30.00" x 30.00" square at the same 10.00" distance below the light.

The lights will be activated when the adjacent door is opened.

**FENDER CROWNS**
Stainless steel fender crowns will be installed at the cab wheel openings. The fender crowns will have a radius outside corner that will allow the fender crown to extend out further than the standard width crown, thus extending beyond the sidewall of the front tires and allow the crew cab doors to open fully.

**CREW CAB WINDOWS**
One (1) fixed window with tinted glass will be provided on each side of the cab, to the rear of the front cab door. The windows will be sized to enhance light penetration into the cab interior. The windows will measure 17.50" wide x 21.00" high.

The rear wall of the crew cab will have two (2) windows, each being 11.29" wide x 17.95" high.

**WINDOW TINT**
Crew cab windows will be tinted with 44 percent light transmission tint. The following windows are included:

- Crew cab side windows
- Crew cab door, roll-up windows
- Top fixed window in crew cab doors
- Rear opera windows (If applicable)
- All windows in raised roof (If applicable).

**CAB ROOF COVERING**
Horizontal cab roof surfaces will be covered with bright aluminum treadplate. Edges and fastening screws will be properly caulked to prevent water from leaking under aluminum. Front and side warning lights will not be mounted on top of treadplate. The treadplate will extend and terminate next to the warning lights.

**SPECIAL FASTENERS (ENGINE TUNNEL INSULATION)**
The insulation in the cab engine tunnel will be held in place by mechanical fasteners and large washers.

**CUP HOLDER**
There will be four (4) cup holder(s) provided. Each cup holder will have self-adjusting fingers that automatically grip beverage containers of various sizes. A recess in the cup holder will allow it to hold beverage containers with handles.
The cup holder(s) will be located at customer pick-up.

**CAB INTERIOR**
The left and right side dash and center console will be a flat faced design to provide easy maintenance and will be constructed out of painted aluminum.

The engine tunnel will be padded and covered with 46 ounce leather grain vinyl resistant to oil, grease and mildew.

The headliner will be installed in both forward and rear cab sections. Headliner material will be vinyl. A sound barrier will be part of its composition. Material will be installed on aluminum sheet and securely fastened to interior cab ceiling.

Forward portion of cab headliner will provide easy access for servicing electrical wiring or for other maintenance needs without removing the entire unit.

**CAB INTERIOR UPHOLSTERY**
The cab interior upholstery will be dark silver gray.

**CAB INTERIOR PAINT**
A rich looking interior will be provided by painting all the metal surfaces inside the cab gray, vinyl texture paint.

**CAB FLOOR**
The cab and crew cab floor areas will be covered with Polydamp™ acoustical floor mat consisting of a black pyramid rubber facing and closed cell foam decoupler.

The top surface of the material has a series of raised pyramid shapes evenly spaced, which offer a superior grip surface. Additionally, the material has a 0.25" thick closed cell foam, no water absorption, which offers a sound dampening material for reducing sound levels.

**CAB DEFROSTER**
There will be a 41,000 BTU defroster in the cab located under the engine tunnel.

The defroster ventilation will be built into the design of the cab dash instrument panel and will be easily removable for maintenance.

The defroster will have a 3-speed blower and temperature controls accessible to the driver and officer.

The defroster ducts will be designed to provide maximum defrosting capabilities for the front cab windows.

**CAB/CREW CAB HEATER**
Two (2) auxiliary heaters with 32,000 BTU each will be provided in the cab. The heaters will have a 3-speed blower and temperature controls accessible to the driver and officer. There will also be louvers located below the rear facing seat riser and below the driver and officer positions for airflow.
The heaters will be mounted, one (1) within each rear facing seat riser.

**AIR CONDITIONING**

A high-performance, customized air conditioning system will be furnished inside the cab and crew cab. A 19.10 cubic inch compressor will be installed on the engine.

The air conditioning system will be capable of cooling the average cab temperature from 100 degrees Fahrenheit to 72 degrees Fahrenheit at 50 percent relative humidity within 30 minutes. The cooling performance test will be run only after the cab has been heat soaked at 100 degrees Fahrenheit for a minimum of 4 hours.

A roof-mounted condenser that meets and exceeds the performance specification will be installed on the cab roof. Mounting the condenser below the cab or body would reduce the performance of the system and will not be acceptable.

An evaporator unit that meets and exceeds the performance specification will be installed in the cab, located in the center of the cab ceiling over the engine tunnel. The evaporator will include two (2) high performance cores and plenums with multiple outlets, one (1) plenum directed to the front and one (1) plenum directed to the rear of the cab.

The evaporator unit will be provided with adjustable air outlets strategically located to direct air flow to the driver, officer and crew cab area.

All hose used will be class 1 type to reduce moisture ingestion into the air conditioning system.

The air conditioner refrigerant will be R-134A and will be installed by a certified technician.

The air conditioner will be controlled by a single electronic control panel. For ease of operation, the control panel will include variable adjustment for temperature and fan control and be conveniently located on the dash in clear view of the driver. The control panel will include robust knobs for both fan speed and temperature adjustment.

**SUN VISORS**

Two (2) smoked Lexan™ sun visors provided. The sun visors will be located above the windshield with one (1) mounted on each side of the cab.

There will be no retention bracket provided to help secure each sun visor in the stowed position.

**GRAB HANDLE**

A black rubber covered grab handle will be mounted on the upper "A" post of the driver's side cab entrance to assist in entering the cab.

A black rubber covered grab handle will be mounted on the lower portion of the driver's side cab entrance to assist in entering the cab. The grab handle will be securely mounted to the post area between the door and steering wheel column.

A long rubber grab handle will be mounted on the dash board in front of the officer.
ENGINE COMPARTMENT LIGHTS
There will be one (1) Whelen, Model 3SC0CDCR, 12 volt DC, 3.00" white LED light(s) with Whelen, Model 3FLANGEC, chrome flange kit(s) installed under the cab to be used as engine compartment illumination.

These light(s) will be activated automatically when the cab is raised.

ACCESS TO ENGINE DIPSTICKS
For access to the engine oil and transmission fluid dipsticks, there will be a door on the engine tunnel, inside the crew cab. The door will be on the rear wall of the engine tunnel, on the vertical surface.

The engine oil dipstick will allow for checking only. The transmission dipstick will allow for both checking and filling.

The door will have a rubber seal for thermal and acoustic insulation. One (1) flush latch will be provided on the access door.

MAP BOX
There will be one (1) map box(es) with three (3) bins, open from top. The location required will be to be mounted at final. The map box(es) will be divided into three (3) bins, each being 12.50" wide x 3.00" high x 12.00" deep. Each bin will slant 30 degrees from horizontal.

An additional storage area will be located along side the map storage area. This storage area will be 4.00" wide x 6.00" high x 12.00" deep and located on the right side as the map slots face forward.

The map box(es) will be constructed of .125" aluminum and will be painted to match the cab interior.

FRONTAL IMPACT PROTECTION
The cab will be provided with a frontal impact protection system and will include the following:

- A supplemental restraint system (SRS) sensor will be installed on a structural cab member behind the instrument panel. The SRS sensor will perform real time diagnostics of all critical subsystems and will record sensory inputs immediately before and during a frontal impact event.
- A fault-indicating light will be provided on the vehicle's instrument panel allowing the driver to monitor the operational status of the SRS system.
- A driver side front air bag will be mounted in the steering wheel and will be designed to protect the head and upper torso of the occupant, when used in combination with the three (3)-point seat belt.
- A passenger side knee bolster air bag will be mounted in the modesty panel below the dash panel and will be designed to protect the legs of the occupant, when used in combination with the three (3)-point seat belt.
- Driver and front passenger suspension seats will be provided with devices to retract them to the lowest travel position during a frontal impact event.
• Driver and front passenger seat belts will be provided with pre-tensioners to remove slack from the seat belt during frontal impact event.

The SRS system will provide protection during a frontal or oblique impact event. The system will activate when the vehicle decelerates at a predetermined G force known to cause injury to the occupants. The cab and chassis will have been subjected, via third party test facility, to a crash impact during frontal and oblique impact testing. Testing included all major chassis and cab components such as mounting straps for fuel and air tanks, suspension mounts, front suspension components, rear suspensions components, frame rail cross members, engine and transmission and their mounts, pump house and mounts, frame extensions and body mounts. The testing provided configuration specific information used to optimize the timing for firing the safety restraint system. The sensor will activate the pyrotechnic devices when the correct crash algorithm, wave form, is detected.

The SRS system will deploy the following components in the event of a frontal or oblique impact event:

• Driver side front air bag.
• Passenger side knee bolster air bag.
• Driver and front passenger suspension seats will be retracted to the lowest travel position.
• Driver and front passenger seat belts will be pre-tensioned to firmly hold the occupant in place.

**SEATING CAPACITY**
The seating capacity in the cab will be six (6).

**DRIVER SEAT**
A seat will be provided in the cab for the driver. The seat design will be a cam action type, with air suspension. For increased convenience, the seat will include a manual control to adjust the horizontal position (6.00" travel). The manual horizontal control will be a towel-bar style located below the forward part of the seat cushion. To provide flexibility for multiple driver configurations, the seat will have an adjustable reclining back. The seat back will be a high back style with side bolster pads for maximum support. For optimal comfort, the seat will be provided with 17.00" deep foam cushions designed with EVC (elastomeric vibration control).

The seat will include the following features incorporated into the frontal impact protection system:

• A suspension seat safety system will be included. When activated in the event of a frontal impact, this system will pretension the seat belt and retract the seat to its lowest travel position.

The seat will be furnished with a 3-point, shoulder type seat belt. The seat belt tongue will be stored at waist position for quick application by the seat occupant. The seat belt receptacle will be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt will be furnished with dual automatic retractors that will provide ease of operation in the normal seating position.
OFFICER SEAT
A seat will be provided in the cab for the passenger. The seat design will be a cam action type, with air suspension. The seat back will be a high back style with 9 degree fixed recline angle and side bolster pads for maximum support. For optimal comfort, the seat will be provided with 17.00" deep foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seat will be equipped with seat belt sensors in the seat cushion and belt receptacle that will activate an alarm indicating a seat is occupied but not buckled.

The seat will include the following features incorporated into the frontal impact protection system:

- A suspension seat safety system will be included. When activated this system will pretension the seat belt and retract the seat to its lowest travel position.

The seat will be furnished with a 3-point, shoulder type seat belt. The seat belt tongue will be stored at waist position for quick application by the seat occupant. The seat belt receptacle will be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt will be furnished with dual automatic retractors that will provide ease of operation in the normal seating position.

REAR FACING DRIVER SIDE OUTBOARD SEAT
There will be one (1) rear facing seat provided at the driver side outboard position in the crew cab. For optimal comfort, the seat will be provided with 15.00" deep foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seat will be equipped with seat belt sensors in the seat cushion and belt receptacle that will activate an alarm indicating a seat is occupied but not buckled.

The seat back will be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity will be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders. Moving the SCBA cavity will be accomplished by unbolting, relocating, and re-bolting it in the desired location.

The seat will be furnished with a 3-point, shoulder type seat belt. The seat belt tongue will be stored at waist position for quick application by the seat occupant. The seat belt receptacle will be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt will be furnished with dual automatic retractors that will provide ease of operation in the normal seating position.

REAR FACING PASSENGER SIDE OUTBOARD SEAT
There will be one (1) rear facing seat provided at the passenger side outboard position in the crew cab. For optimal comfort, the seat will be provided with 15.00" deep foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seat will be equipped with seat belt sensors in the seat cushion and belt receptacle that will activate an alarm indicating a seat is occupied but not buckled.
The seat back will be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity will be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders. Moving the SCBA cavity will be accomplished by unbolting, relocating, and re-bolting it in the desired location.

The seat will be furnished with a 3-point, shoulder type seat belt. The seat belt tongue will be stored at waist position for quick application by the seat occupant. The seat belt receptacle will be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt will be furnished with dual automatic retractors that will provide ease of operation in the normal seating position.

**FORWARD FACING DRIVER SIDE OUTBOARD SEAT**

There will be one (1) forward facing, foldup seat provided at the driver side outboard position in the crew cab. The seat back will be a high back style with 9 degree fixed recline angle. For optimal comfort, the seat will be a minimum of 15.00" from the front of the cushion to the face of the seat back and designed with EVC (elastomeric vibration control). To ensure safe operation, the seat will be equipped with seat belt sensors in the seat cushion and belt receptacle, that will activate an alarm indicating a seat is occupied but not buckled.

The seat will be furnished with a 3-point, shoulder type seat belt. The seat belt tongue will be stored at waist position for quick application by the seat occupant. The seat belt receptacle will be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt will be furnished with dual automatic retractors that will provide ease of operation in the normal seating position.

**EMS COMPARTMENT**

A forward facing EMS compartment will be provided in the crew cab at the center position.

The compartment will be 38.00" wide x 30.00" high x 22.63" deep with one (1) Gortite roll up door, locking, with anodized finish. The clear door opening of the compartment will be 33.00" wide x 20.00" high.

The compartment will be constructed of smooth aluminum, and painted to match the cab interior.

**COMPARTMENT LIGHT**

There will be two (2) white Amdor, LED strip lights installed, one (1) each side of the compartment opening. The lights will be controlled by an automatic door switch.

**FORWARD FACING PASSENGER SIDE OUTBOARD SEAT**

There will be one (1) forward facing foldup seat provided at the passenger side outboard position in the crew cab. The seat back will be a high back style with 9 degree fixed recline angle. For optimal comfort, the seat will be a minimum of 15.00" from the front of the cushion to the face of the seat back and designed with EVC (elastomeric vibration control). To ensure safe operation, the seat will be equipped with seat belt sensors in the seat cushion and belt receptacle, that will activate an alarm indicating a seat is occupied but not buckled.
The seat will be furnished with a 3-point, shoulder type seat belt. The seat belt tongue will be stored at waist position for quick application by the seat occupant. The seat belt receptacle will be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt will be furnished with dual automatic retractors that will provide ease of operation in the normal seating position.

**REAR FACING OVERHEAD STORAGE COMPARTMENT**
There will be an overhead rear facing storage compartment installed at the raised roof within the crew cab. The compartment will be 74.00" wide x 10.00" high x 14.00" deep at the bottom, tapered at the top.

The compartment will include four (4) lift-up compartment doors. Non-locking latch paddle handle and gas operated stay arms will be provided.. The compartment will be provided with a divider between each door opening. A partition will be provided between each door opening to separate each area into individual storage compartments.

The compartment will be constructed of smooth aluminum and painted to match the cab interior.

**COMPARTMENT LIGHT**
There will be one (1) white LED strip light installed horizontally above each compartment door opening. The lights will be controlled by an automatic door switch.

**SHELVING**
There will be one (1) shelf provided. Each shelf will be constructed of 0.090" aluminum with a 1.25" up-turned lip. Shelving will be infinitely adjustable by means of a threaded tightening sliding in a track.

The location will be one (1) shelf in the center forward facing EMS cabinet.

**SLIDE-OUT FLOOR TRAY**
There shall be one (1) sliding tray(s) provided in the in the ems cabinet in the forward facing center crew area EMS cabinet.

The capacity rating will be 250 pounds minimum in the extended position.

The construction will consist of .188" thick aluminum formed to provide a 1.00" high lip around the perimeter of tray.

Corners will be welded to form a rigid unit.

Slide mechanisms will have ball bearings for ease of operation and years of dependable service.

An automatic lock will be provided for both the in and out tray positions.

The lock trip mechanism will be located at the front of the tray and will be easily operated with a gloved hand.

Tray will be mounted to the floor of the EMS compartment.
SEAT UPHOLSTERY
All seat upholstery will be gray woven with black Imperial 1200 material.

AIR BOTTLE HOLDERS
All SCBA type seats in the cab will have a Ziamatic, Model ULLH, SCBA holder bracket. This bracket will be compliant with the current NFPA 1901 standards and will include a back plate, two (2) seats, a footplate and the Model LLS (Load & Lock) strap to hold the bottle in the bracket. The bracket seats will be a "one size fits all" style seat and will accommodate SCBA cylinders from the high pressure 30-minute to the high pressure 60-minute. Seats will be adjustable up and down by unbolting, relocating, and re-bolting in the desired position.

FOOT REST ANGLE
A knurled handrail type will be provided for the officers position. The handrail will be mounted to the engine housing with a flat stanchion and a "U" shaped bracket. The handrail will extend the width of the officers seat area. The foot rest will be positioned approximately 4.00" from the forward wall.

SEAT BELTS
All seating positions in the cab and crew cab will have red seat belts.

The belts will also include the Ready Reach® D-loop assembly to the shoulder belt system. The Ready Reach feature adds an extender arm to the D-loop location placing the D-loop in a closer, easier to reach location.

SHOULDER HARNESS HEIGHT ADJUSTMENT
All seating positions furnished with 3-point shoulder type seat belts will include a height adjustment. This adjustment will optimize the belts effectiveness and comfort for the seated firefighter.

SEAT BELT MONITORING ON COMMAND ZONE COLOR DISPLAY
A seat belt monitoring screen will be provided on the Command Zone, color display. The system will be capable of monitoring up to ten (10) seating positions in the cab with green and red seating icons illuminated as follows:

- Seat Occupied & Buckled = Green
- Seat Occupied & Unbuckled = Red
- No Occupant & Buckled = Red
- No Occupant & Unbuckled = Not Illuminated

The seat belt monitoring screen will become active on the Command Zone, color display when:

- The park brake is released:
  - and there is any occupant seated but not buckled or any belt buckled without an occupant:
  - and there are no other Do Not Move Truck conditions present. As soon as all Do Not Move Truck conditions are cleared, the seat belt monitoring screen will be deactivated.
The seat belt monitoring screen will be manually selected anytime the Command Zone, color display is powered.

**AUDIBLE ALARM**
The seat belt monitoring screen will be accompanied by an audible alarm that will activate when a red seat icon condition exists and the parking brake is released.

**HELMET STORAGE, PROVIDED BY FIRE DEPARTMENT**
NFPA 1901, 2009 edition, section 14.1.8.4.1 requires a location for helmet storage be provided.

There is no helmet storage on the apparatus as manufactured. The fire department will provide a location for storage of helmets.

**CAB DOME LIGHTS**
There will be four (4) dual LED dome lights with black bezels provided. Two (2) lights will be mounted above the inside shoulder of the driver and officer and two (2) lights will be installed and located, one (1) on each side of the crew cab.

The color of the LED's will be red and white.

The white LED's will be controlled by the door switches and the lens switch.

The color LED's will be controlled by the lens switch.

In order to ensure exceptional illumination, each white LED dome light will provide a minimum of 10.1 foot-candles (fc) covering an entire 20.00" x 20.00" square seating position when mounted 40.00" above the seat.

**OVERHEAD MAP LIGHTS**
There will be two (2) white halogen, round adjustable map lights installed in the cab:

- One (1) overhead in front of the driving position.
- One (1) overhead in front of the passenger's position.

Each light will include a switch on the light housing.

The light switches will be connected directly to the battery switched power.

**CAB SPOTLIGHT**
There will be two (2) Golight® Stryker™, Model 30 **4, chrome LED spotlights located on the cab roof, outside the lightbar. The spotlights will be mounted to the surface of the cab roof.

These lights may be load managed when the parking brake is applied.

**SPOTLIGHT CONTROLLER**
There will be one (1) wired dash mounted remote provided for each spotlight.
SPOTLIGHT CONTROLLER LOCATIONS
The remotes to control the spotlights will be located one (1) within reach of the driver and one (1) within reach of the officer.

HAND HELD LIGHT
There will be four (4) Streamlight LiteBox lights with an orange thermoplastic body provided. The location will be one each side mounted to the floor under the forward facing seats, mounted so the light release is towards the door. The other two will be determined at preconstruction.

CAB INSTRUMENTATION
The cab instrument panel will consist of gauges, an LCD display, telltale indicator lights, alarms, control switches, and a diagnostic panel. The function of instrument panel controls and switches will be identified by a label adjacent to each item. Actuation of the headlight switch will illuminate the labels in low light conditions. Telltale indicator lamps will not be illuminated unless necessary. The cab instruments and controls will be conveniently located within the forward cab section directly forward of the driver. Gauge and switch panels will be designed to be removable for ease of service and low cost of ownership.

CAB INTERIOR
The wrap-around style high impact ABS plastic cab dash fascia will be designed to provide unobstructed visibility to instrumentation. The dash layout will provide the driver with a quick reference to gauges that allows more time to focus on the road.

GAUGES
The gauge panel will include the following ten (10) ivory gauges with chrome bezels to monitor vehicle performance:

- Voltmeter Gauge (Volts):
  - Low volts (11.8 VDC)
    - Amber indicator on gauge assembly with alarm
  - High volts (15 VDC)
    - Amber indicator on gauge assembly with alarm
  - Very low volts (11.3 VDC)
    - Amber indicator on gauge assembly with alarm
  - Very high volts (16 VDC)
    - Amber indicator on gauge assembly with alarm
- Tachometer (RPM)
- Speedometer (Primary (outside) MPH, Secondary (inside) Km/H)
- Fuel Level Gauge (Empty - Full in fractions):
  - Low fuel (1/8 full)
    - Amber indicator on gauge assembly with alarm
  - Very low fuel (1/32) fuel
    - Amber indicator on gauge assembly with alarm
- Engine Oil Pressure Gauge (PSI):
o Low oil pressure to activate engine warning lights and alarms
  ▪ Red indicator on gauge assembly with alarm
• Front Air Pressure Gauge (PSI):
  o Low air pressure to activate warning lights and alarm
  ▪ Red indicator on gauge assembly with alarm
• Rear Air Pressure Gauge (PSI):
  o Low air pressure to activate warning lights and alarm.
  ▪ Red indicator on gauge assembly with alarm
• Transmission Oil Temperature Gauge (Fahrenheit):
• High transmission oil temperature activates warning lights and alarm
  o Amber indicator on gauge assembly with alarm
• Engine Coolant Temperature Gauge (Fahrenheit):
  o High engine temperature activates an engine warning light and alarm
  ▪ Red indicator on gauge assembly with alarm
• Diesel Exhaust Fluid Level Gauge (Empty - Full in fractions):
  o Low fluid (1/8 full)
  ▪ Amber indicator on gauge assembly with alarm

All gauges and gauge indicators will perform prove out at initial power-up to ensure proper performance.

**INDICATOR LAMPS**
To promote safety, the following telltale indicator lamps will be integral to the gauge assembly and are located above and below the center gauges. The indicator lamps will be "dead-front" design that is only visible when active. The colored indicator lights will have descriptive text or symbols.

The following amber telltale lamps will be present:

• Low coolant
• Trac cntl (traction control) (where applicable)
• Check engine
• Check trans (check transmission)
• Aux brake overhear (Auxiliary brake overhear)
• Air rest (air restriction)
• Caution (triangle symbol)
• Water in fuel
• DPF (engine diesel particulate filter regeneration)
• Trailer ABS (where applicable)
• Wait to start (where applicable)
• HET (engine high exhaust temperature) (where applicable)
• ABS (antilock brake system)
• MIL (engine emissions system malfunction indicator lamp) (where applicable)
• SRS (supplemental restraint system) fault (where applicable)
- DEF (low diesel exhaust fluid level)
- The following red telltale lamps will be present:
  - Warning (stop sign symbol)
  - Seat belt
  - Parking brake
  - Stop engine
  - Rack down

The following green telltale lamps will be provided:

- Left turn
- Right turn
- Battery on

The following blue telltale lamp will be provided:

- High beam

**ALARMS**
Audible steady tone warning alarm: A steady audible tone alarm will be provided whenever a warning message is present.

Audible pulsing tone caution alarm: A pulsing audible tone alarm (chime/chirp) will be provided whenever a caution message is present without a warning message being present.

Alarm silence: Any active audible alarm will be able to be silenced by holding the ignition switch at the top position for three (3) to five (5) seconds. For improved safety, silenced audible alarms will intermittently chirp every 30 seconds until the alarm condition no longer exists. The intermittent chirp will act as a reminder to the operator that a caution or warning condition still exists. Any new warning or caution condition will enable the steady or pulsing tones respectively.

**INDICATOR LAMP AND ALARM PROVE-OUT**
Telltale indicators and alarms will perform prove-out at initial power-up to ensure proper performance.

**CONTROL SWITCHES**
For ease of use, the following controls will be provided immediately adjacent to the cab instrument panel within easy reach of the driver:

- Emergency master switch: A molded plastic push button switch with integral indicator lamp will be provided. Pressing the switch will activate emergency response lights and siren control. A green lamp on the switch provides indication that the emergency master mode is active. Pressing the switch again disables the emergency master mode.
- Headlight / Parking light switch: A three (3)-position maintained rocker switch will be provided. The first switch position will deactivate all parking lights and the headlights. The second switch position will activate the parking lights. The third switch position will activate the headlights.
Panel back lighting intensity control switch: A three (3)-position momentary rocker switch will be provided. The first switch position decreases the panel back lighting intensity to a minimum level as the switch is held. The second switch position is the default position that does not affect the back lighting intensity. The third switch position increases the panel back lighting intensity to a maximum level as the switch is held.

The following standard controls will be integral to the gauge assembly and are located below the right hand gauges. All switches have backlit labels for low light applications:

- High idle engagement switch: A two (2)-position momentary rocker switch with integral indicator lamp will be provided. The first switch position is the default switch position. The second switch position will activate and deactivate the high idle function when pressed and released. The "Ok To Engage High Idle" indicator lamp must be active for the high idle function to engage. A green indicator lamp integral to the high idle engagement switch will indicate when the high idle function is engaged.

- "Ok To Engage High Idle" indicator lamp: A green indicator light will be provided next to the high idle activation switch to indicate that the interlocks have been met to allow high idle engagement.

- The following standard controls will be provided adjacent to the cab gauge assembly within easy reach of the driver. All switches will have backlit labels for low light applications.

- Ignition switch: A three (3)-position maintained/momentary rocker switch will be provided. The first switch position will deactivate vehicle ignition. The second switch position will activate vehicle ignition. The third momentary position will disable the Command Zone audible alarm if held for three (3) to five (5) seconds. A green indicator lamp will be activated with vehicle ignition.

- Engine start switch: A two (2)-position momentary rocker switch will be provided. The first switch position is the default switch position. The second switch position will activate the vehicle's engine. The switch actuator is designed to prevent accidental activation.

- 4-way hazard switch: A two (2)-position maintained rocker switch will be provided. The first switch position will deactivate the 4-way hazard switch function. The second switch position will activate the 4-way hazard function. The switch actuator will be red and includes the international 4-way hazard symbol.

- Turn signal arm: A self-canceling turn signal with high beam headlight and windshield wiper/washer controls will be provided. The windshield wiper control will have high, low, and intermittent modes.

- Parking brake control: An air actuated push/pull park brake control valve will be provided.

- Chassis horn control: Activation of the chassis horn control will be provided through the center of the steering wheel.

CUSTOM SWITCH PANELS
The design of cab instrumentation will allow for emergency lighting and other switches to be placed within easy reach of the operator thus improving safety. There will be positions for up to three (3) switch panels in the overhead console on the driver's side, up to four (4) switch panels in the engine
tunnel console facing the driver, up to three (3) switch panels in the overhead console on the officer's side and up to three (3) switch panels in the engine tunnel rear facing console accessible to both driver and officer. All switches will have backlit labels for low light applications.

**DIAGNOSTIC PANEL**
A diagnostic panel will be accessible while standing on the ground and located inside the driver's side door left of the steering column. The diagnostic panel will allow diagnostic tools such as computers to connect to various vehicle systems for improved troubleshooting providing a lower cost of ownership. Diagnostic switches will allow engine and ABS systems to provide blink codes should a problem exist. The diagnostic panel will include the following:

- Engine diagnostic port
- Transmission diagnostic port
- ABS diagnostic port
- SRS diagnostic port (where applicable)
- Command Zone USB diagnostic port
- Engine diagnostic switch (blink codes flashed on check engine telltale indicator)
- ABS diagnostic switch (blink codes flashed on ABS telltale indicator)
- Diesel particulate filter regeneration switch (where applicable)
- Diesel particulate filter regeneration inhibit switch (where applicable)

**CAB LCD DISPLAY**
A digital four (4)-row by 20-character dot matrix display will be integral to the gauge panel. The display will be capable of showing simple graphical images as well as text. The display will be split into three (3) sections. Each section will have a dedicated function. The upper left section will display the outside ambient temperature. The upper right section will display odometer, trip mileage, PTO hours, fuel consumption, engine hours, and other configuration specific information. The bottom section will display INFO, CAUTION, and WARNING messages. Text messages will automatically activate to describe the cause of an audible caution or warning alarm. The LCD will be capable of displaying multiple text messages should more than one caution or warning condition exist.

**AIR RESTRICTION INDICATOR**
A high air restriction warning indicator light LCD message with amber warning indicator and audible alarm will be provided.

"DO NOT MOVE APPARATUS" INDICATOR
There will be a Whelen, Model 5SR00FRR, flashing red LED indicator light located in the driving compartment. The light will be illuminated automatically per the current NFPA requirements and labeled "Do Not Move Apparatus If Light Is On".

The same circuit that activates the Do Not Move Apparatus indicator will activate a pulsing alarm when the parking brake is released.
DO NOT MOVE TRUCK MESSAGES
Messages will be displayed on the Command Zone™, color display located within sight of the driver whenever the Do Not Move Truck light is active. The messages will designate the item or items not in the stowed for vehicle travel position (parking brake disengaged).

The following messages will be displayed (where applicable):

- Do Not Move Truck
- DS Cab Door Open (Driver Side Cab Door Open)
- PS Cab Door Open (Passenger's Side Cab Door Open)
- DS Crew Cab Door Open (Driver Side Crew Cab Door Open)
- PS Crew Cab Door Open (Passenger's Side Crew Cab Door Open)
- DS Body Door Open (Driver Side Body Door Open)
- PS Body Door Open (Passenger's Side Body Door Open)
- Rear Body Door Open
- DS Ladder Rack Down (Driver Side Ladder Rack Down)
- PS Ladder Rack Down (Passenger Side Ladder Rack Down)
- Deck Gun Not Stowed
- Lt Tower Not Stowed (Light Tower Not Stowed)
- Hatch Door Open
- Fold Tank Not Stowed (Fold-A-Tank Not Stowed)
- Aerial Not Stowed (Aerial Device Not Stowed)
- Stabilizer Not Stowed
- Steps Not Stowed
- Handrail Not Stowed

Any other device that is opened, extended, or deployed that creates a hazard or is likely to cause major damage to the apparatus if the apparatus is moved will be displayed as a caution message after the parking brake is disengaged.

SWITCH PANELS
The emergency light switch panel will have a master switch for ease of use plus individual switches for selective control. Each switch panel will contain eight (8) membrane-type switches each rated for one million (1,000,000) cycles. Panels containing less than eight (8) switch assignments will include non-functioning black appliqués. Documentation will be provided by the manufacturer indicating the rated cycle life of the switches. The switch panel(s) will be located in the overhead position above the windshield on the driver side overhead to allow for easy access.

Additional switch panel(s) will be located in the overhead position(s) above the windshield or in designated locations on the lower instrument panel layout.

The switches will be membrane-type and also act as an integral indicator light. For quick, visual indication the entire surface of the switch will be illuminated white whenever back lighting is activated and illuminated green whenever the switch is active. An active illuminated switch will flash when
interlock requirements are not met or device is actively being load managed. For ease of use, a two (2)-ply, scratch resistant laser engraved Gravoply label indicating the use of each switch will be placed in the center of the switch. The label will allow light to pass through the letters for ease of use in low light conditions.

**WIPER CONTROL**
For simple operation and easy reach, the windshield wiper control will be an integral part of the directional light lever located on the steering column. The wiper control will include high and low wiper speed settings, a one (1)-speed intermittent wiper control and windshield washer switch. The control will have a "return to park" provision, which allows the wipers to return to the stored position when the wipers are not in use.

**SPARE CIRCUIT**
There will be four (4) pair of wires, including a positive and a negative, installed on the apparatus.

The above wires will have the following features:

- The positive wire will be connected directly to the battery power.
- The negative wire will be connected to ground.
- Wires will be protected to 10 amps at 12 volts DC.
- Power and ground will terminate one at each forward facing seating position.
- Termination will be a Blue Sea Systems part number 1016 dual USB charger socket.
- Wires will be sized to 125% of the protection.

This circuit(s) may be load managed when the parking brake is applied.

**SPARE CIRCUIT**
There will be four (4) pair of wires, including a positive and a negative, installed on the apparatus.

The above wires will have the following features:

- The positive wire will be connected directly to the battery power
- The negative wire will be connected to ground
- Wires will be protected to 15 amps at 12 volts DC
- Power and ground will terminate on the officer's side of the engine tunnel, on the rear wall of the crew cab, driver's side, on the rear wall of the crew cab, passenger's side and on the driver's side of the engine tunnel
- Termination will be with 15 amp, power point plug with rubber cover
- Wires will be sized to 125 percent of the protection

The circuit(s) may be load managed when the parking brake is set.

**INFORMATION CENTER**
An information center employing a 7.00" diagonal touch screen color LCD display will be encased in an ABS plastic housing.
The information center will have the following specifications:

- Operate in temperatures from -40 to 185 degrees Fahrenheit
- An Optical Gel will be placed between the LCD and protective lens
- Five weather resistant user interface switches
- Grey with black accents
- Sunlight Readable
- Linux operating system
- Minimum of 1000nits rated display
- Display can be changed to an available foreign language
- A LCD display integral to the cab gauge panel will be included as outlined in the cab instrumentation area.
- Programmed to read US Customary

**GENERAL SCREEN DESIGN**
Where possible, background colors will be used to provide "At a Glance" vehicle information. If information provided on a screen is within acceptable limits, a green background will be used.

If a caution or warning situation arises the following will occur:

- An amber background/text color will indicate a caution condition
- A red background/text color will indicate a warning condition
- The information center will utilize an "Alert Center" to display text messages for audible alarm tones. The text messages will be written to identify the item(s) causing the audible alarm to sound. If more than one (1) text message occurs, the messages will cycle every second until the problem(s) have been resolved. The background color for the "Alert Center" will change to indicate the severity of the "warning" message. If a warning and a caution condition occur simultaneously, the red background color will be shown for all alert center messages.
- A label for each button will exist. The label will indicate the function for each active button for each screen. Buttons that are not utilized on specific screens will have a button label with no text or symbol.

**HOME/TRANSIT SCREEN**
This screen will display the following:

- Vehicle Mitigation (if equipped)
- Water Level (if equipped)
- Foam Level (if equipped)
- Seat Belt Monitoring Screen
- Tire Pressure Monitoring (if equipped)
- Digital Speedometer
- Active Alarms
**ON SCENE SCREEN**
This screen will display the following and will be auto activated with pump engaged (if equipped):

- Battery Voltage
- Fuel
- Oil Pressure
- Coolant Temperature
- RPM
- Water Level (if equipped)
- Foam Level (if equipped)
- Foam Concentration (if equipped)
- Water Flow Rate (if equipped)
- Water Used (if equipped)
- Active Alarms

**VIRTUAL BUTTONS**
There will be four (4) virtual switch panel screens that match the overhead and lower lighting and HVAC switch panels.

**PAGE SCREEN**
The page screen will display the following and allow the user to progress into other screens for further functionality:

- Diagnostics
  - Faults
    - Listed by order of occurrence
    - Allows to sort by system
  - Interlock
    - Throttle Interlocks
    - Pump Interlocks (if equipped)
    - Aerial Interlocks (if equipped)
    - PTO Interlocks (if equipped)
  - Load Manager
    - A list of items to be load managed will be provided. The list will provide a description of the load.
    - The lower the priority numbers the earlier the device will be shed should a low voltage condition occur.
    - The screen will indicate if a load has been shed (disabled) or not shed.
    - "At a glance" color features are utilized on this screen.
  - Systems
    - Command Zone
      - Module type and ID number
      - Module Version
• Input or output number
• Circuit number connected to that input or output
• Status of the input or output
• Power and Constant Current module diagnostic information
  ▪ Foam (if equipped)
  ▪ Pressure Controller (if equipped)
  ▪ Generator Frequency (if equipped)
  ○ Live Data
    ▪ General Truck Data
• Maintenance
  ○ Engine oil and filter
  ○ Transmission oil and filter
  ○ Pump oil (if equipped)
  ○ Foam (if equipped)
  ○ Aerial (if equipped)
• Setup
  ○ Clock Setup
  ○ Date & Time
    ▪ 12 or 24 hour format
    ▪ Set time and date
  ○ Backlight
    ▪ Daytime
    ▪ Night time
    ▪ Sensitivity
  ○ Unit Selection
  ○ Home Screen
  ○ Virtual Button Setup
  ○ On Scene Screen Setup
  ○ Configure Video Mode
    ▪ Set Video Contrast
    ▪ Set Video Color
    ▪ Set Video Tint
• Do Not Move
  ○ The screen will indicate the approximate location and type of item that is open or is not stowed for travel. The actual status of the following devices will be indicate
    ▪ Driver Side Cab Door
    ▪ Passenger's Side Cab Door
    ▪ Driver Side Crew Cab Door
    ▪ Passenger's Side Crew Cab Door
    ▪ Driver Side Body Doors
    ▪ Passenger's Side Body Doors
    ▪ Rear Body Door(s)
• Ladder Rack (if applicable)
• Deck Gun (if applicable)
• Light Tower (if applicable)
• Hatch Door (if applicable)
• Stabilizers (if applicable)
• Steps (if applicable)

• Notifications
  o View Active Alarms
    • Shows a list of all active alarms including date and time of the occurrence is shown with each alarm
    • Silence Alarms - All alarms are silenced

• Timer Screen
• HVAC (if equipped)
• Tire Information (if equipped)

Button functions and button labels may change with each screen.

**VEHICLE DATA RECORDER**
A vehicle data recorder (VDR) will be provided. The VDR will be capable of reading and storing vehicle information.

The information stored on the VDR can be downloaded through a USB port mounted in a convenient location determined by cab model. A CD provided with the apparatus will include the programming to download the information from the VDR. A USB cable can be used to connect the VDR to a laptop to retrieve required information.

The vehicle data recorder will be capable of recording the following data via hardwired and/or CAN inputs:

• Vehicle Speed - MPH
• Acceleration - MPH/sec
• Deceleration - MPH/sec
• Engine Speed - RPM
• Engine Throttle Position - % of Full Throttle
• ABS Event - On/Off
• Seat Occupied Status - Yes/No by Position (7-12 Seating Capacity)
• Seat Belt Buckled Status - Yes/No by Position (7-12 Seating Capacity)
• Master Optical Warning Device Switch - On/Off
• Time - 24 Hour Time
• Date - Year/Month/Day
INTERCOM SYSTEM
A seven (7) position Sigtronics, Model US-67S, intercom system with single radio interface capability at the driver, officer, and pump operator locations will be provided. Four (4) crew cab positions, located at two (2) forward facing seats and two (2) rearward facing seats, will have intercom and radio listen capabilities.

System includes:
- One (1) US-67S Intercom system
- Six (6) Interior headset jacks in blue boxes
- One (1) Exterior headset jack in blue box with splash cover (Pump Panel)
- Three (3) Radio Push-to-Transmit buttons in blue boxes (Driver, Officer, and Pump Panel)
- All necessary wiring

RADIO / INTERCOM INTERFACE CABLE
The apparatus manufacturer will supply and install one (1) radio interface cable before delivery of the vehicle.

The radio equipment to be used by the customer will be:
- Motorola High Power, Model number APX-7000.

TWO WAY RADIO SPEAKER INSTALLATION
There will be four (4) customer supplied two way radio speakers sent to the apparatus manufacturers preferred third party installer to be installed to be determined.

Specific shipping requirements will be followed.

PORTABLE RADIO CHARGER INSTALLATION
There will be five (5) customer supplied portable two-way radio chargers(s) sent to the apparatus manufacturers preferred radio installer to be installed to be determined. Specific shipping requirements will be followed.

COMPLETE MDT INSTALLATION
There will be one (1) customer supplied Mobile Data Terminal (MDT), Docking station, Mounting bracket, power supply, antenna, GPS, modem, and all cabling sent to the apparatus manufacturers preferred installer to be installed to be determined. Specific shipping requirements will be followed.

BRACKET ONLY INSTALLATION
There shall be one (1) customer supplied Thermal Imaging camera charging bracket(s) sent to the apparatus manufacturers preferred installer to be installed to be determined.

Specific shipping requirements will be followed.
TWO WAY RADIO INSTALLATION
There will be two (2) customer supplied two way radio(s) sent to the apparatus manufacturers preferred radio installer to be installed to be determined per the shipping document.

No antenna mount or whip will be included in this option.

Specific radio shipping requirements will be followed.

RADIO ANTENNA MOUNT
There will be two (2) standard 1.125", 18 thread antenna-mounting base(s) installed on the right side on the cab roof with high efficiency, low loss, coaxial cable(s) routed to the instrument panel area. A weatherproof cap will be installed on the mount.

VEHICLE VIDEO SYSTEM
A color video system with cameras located on the passenger side of the cab activated with the right turn signal and at the rear of the vehicle, as close to center as possible, activated when the vehicle is put into reverse., and LCD display monitor will be provided.

Images will be displayed in the cab on a 7.00" color LCD flat panel display with swivel mount, and integrated speaker permitting audio from the active camera located in view of the officer on the overhead panel. The displayed image will be duplicated to the drivers mux display.

The following Safety Vision components will be provided:

- One (1) Model SV-LCD70 Display
- One (1) SV-LCD70-CBQ-KIT Control box
- Model 620 rear camera as specified above
- Model 622 side view video camera(s) as specified above
- All cables and adapter to mux display

RECESS, REAR BODY CAMERA
A recessed box will be installed to the bottom of the light stick housing in the rear body to protect the back up camera from damage.

ELECTRICAL POWER CONTROL SYSTEM
The primary power distribution will be located forward of the officer's seating position and be easily accessible while standing on the ground for simplified maintenance and troubleshooting. Additional electrical distribution centers will be provided throughout the vehicle to house the vehicle's electrical power, circuit protection, and control components. The electrical distribution centers will be located strategically throughout the vehicle to minimize wire length. For ease of maintenance, all electrical distribution centers will be easily accessible. All distribution centers containing fuses, circuit breakers and/or relays will be easily accessible.

Distribution centers located throughout the vehicle will contain battery powered studs for supplying customer installed equipment thus providing a lower cost of ownership.
Circuit protection devices, which conform to SAE standards, will be utilized to protect electrical circuits. All circuit protection devices will be rated per NFPA requirements to prevent wire and component damage when subjected to extreme current overload. General protection circuit breakers will be Type-I automatic reset (continuously resetting). When required, automotive type fuses will be utilized to protect electronic equipment. Control relays and solenoid will have a direct current rating of 125 percent of the maximum current for which the circuit is protected per NFPA.

**SOLID-STATE CONTROL SYSTEM**

A solid-state electronics based control system will be utilized to achieve advanced operation and control of the vehicle components. A fully computerized vehicle network will consist of electronic modules located near their point of use to reduce harness lengths and improve reliability. The control system will comply with SAE J1939-11 recommended practices.

The control system will operate as a master-slave system whereas the main control module instructs all other system components. The system will contain patented Mission Critical software that maintains critical vehicle operations in the unlikely event of a main controller error. The system will utilize a Real Time Operating System (RTOS) fully compliant with OSEK/VDX™ specifications providing a lower cost of ownership.

For increased reliability and simplified use the control system modules will include the following attributes:

- Green LED indicator light for module power
- Red LED indicator light for network communication stability status
- Control system self test at activation and continually throughout vehicle operation
- No moving parts due to transistor logic
- Software logic control for NFPA mandated safety interlocks and indicators
- Integrated electrical system load management without additional components
- Integrated electrical load sequencing system without additional components
- Customized control software to the vehicle’s configuration
- Factory and field re programmable to accommodate changes to the vehicle's operating parameters
- Complete operating and troubleshooting manuals
- USB connection to the main control module for advanced troubleshooting

To assure long life and operation in a broad range of environmental conditions, the solid-state control system modules will meet the following specifications:

- Module circuit board will meet SAE J771 specifications
- Operating temperature from -40C to +70C
- Storage temperature from -40C to +70C
- Vibration to 50g

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IP67 rated enclosure (Totally protected against dust and also protected against the effect of temporary immersion between 15 centimeters and one (1) meter)

Operating voltage from eight (8) volts to 16 volts DC

The main controller will activate status indicators and audible alarms designed to provide warning of problems before they become critical.

**CIRCUIT PROTECTION AND CONTROL DIAGRAM**

Copies of all job-specific, computer network input and output (I/O) connections will be provided with each chassis. The sheets will indicate the function of each module connection point, circuit protection information (where applicable), wire numbers, wire colors and load management information.

**ON-BOARD ADVANCED/VISUAL ELECTRICAL SYSTEM DIAGNOSTICS**

The on-board information center will include the following diagnostic information:

- Text description of active warning or caution alarms
- Simplified warning indicators
- Amber caution indication with intermittent alarm
- Red warning indication with steady tone alarm

All control system modules, with the exception of the main control module, will contain on-board visual diagnostic LEDs that assist in troubleshooting. The LEDs will be enclosed within the sealed, transparent module housing near the face of the module. One LED for each input or output will be provided and will illuminate whenever the respective input or output is active. Color-coded labels within the modules will encompass the LEDs for ease of identification. The LED indicator lights will provide point of use information for reduced troubleshooting time without the need for an additional computer.

**TECH MODULE WITH WIFI**

An in cab module will provide Wifi wireless interface and data logging capability. (No Exception) The Wifi interface will comply with IEEE 802.11 b/g/n capabilities while communicating at 2.4 Gigahertz. The module will provide an external antenna connection allowing a line of site communication range of up to 300 feet with a roof mounted antenna.

The module will transmit a password protected web page to a wifi enabled device (i.e. most smart phones, tablets or laptops) allowing two levels of user interaction. The firefighter level will allow vehicle monitoring of the vehicle and firefighting systems on the apparatus. The technician level will allow diagnostic access to inputs and outputs installed on the Command Zone™, control and information system.

The data logging capability will record faults from the engine, transmission, ABS and Command Zone™, control and information systems as they occur. No other data will be recorded at the time the fault occurs. The data logger will provide up to 2 Gigabytes of data storage.
A USB connection will be provided on the Tech Module. It will provide a means to download data logger information and update software in the device.

**PROGNOSTICS**
A software based vehicle tool will be provided to predict remaining life of the vehicles critical fluid and events (no exceptions).

The system will send automatic indications to the Command Zone, color display and/or wireless enabled device to proactively alert of upcoming service intervals.

Prognostics will include:

- Engine oil and filter
- Transmission oil and filter
- Pump oil (if equipped)
- Foam oil (if equipped)
- Aerial oil and filter (if equipped)

**ADVANCED DIAGNOSTICS**
An advanced, Windows-based, diagnostic software program will be provided for this control system. The software will provide troubleshooting tools to service technicians equipped with a Windows-based computer or wireless enabled device.

The service and maintenance software will be easy to understand and use and have the ability to view system input/output (I/O) information.

**INDICATOR LIGHT AND ALARM PROVE-OUT SYSTEM**
A system will be provided which automatically tests basic indicator lights and alarms located on the cab instrument panel.

**VOLTAGE MONITOR SYSTEM**
A voltage monitoring system will be provided to indicate the status of the battery system connected to the vehicle’s electrical load. The system will provide visual and audible warning when the system voltage is below or above optimum levels.

The alarm will activate if the system falls below 11.8 volts DC for more than two (2) minutes.

**DEDICATED RADIO EQUIPMENT CONNECTION POINTS**
There will be three (3) studs provided in the primary power distribution center located in front of the officer for two-way radio equipment.

- The studs will consist of the following:
  - 12-volt 40-amp battery switched power
  - 12-volt 60-amp ignition switched power
  - 12-volt 60-amp direct battery power
There will also be a 12-volt 100-amp ground stud located in or adjacent to the power distribution center.

**ENHANCED SOFTWARE**
The solid-state control system will include the following software enhancements:

All perimeter lights and scene lights (where applicable) will be deactivated when the parking brake is released.

Cab and crew cab dome lights will remain on for ten (10) seconds for improved visibility after the doors close. The dome lights will dim after ten (10) seconds or immediately if the vehicle is put into gear.

Cab and crew cab perimeter lights will remain on for ten (10) seconds for improved visibility after the doors close. The dome lights will dim after ten (10) seconds or immediately if the vehicle is put into gear.

**EMI/RFI PROTECTION**
To prevent erroneous signals from crosstalk contamination and interference, the electrical system will meet, at a minimum, SAE J551/2, thus reducing undesired electromagnetic and radio frequency emissions. An advanced electrical system will be used to ensure radiated and conducted electromagnetic interference (EMI) or radio frequency interference (RFI) emissions are suppressed at their source.

The apparatus will have the ability to operate in the electromagnetic environment typically found in fire ground operations to ensure clean operations. The electrical system will meet, without exceptions, electromagnetic susceptibility conforming to SAE J1113/25 Region 1, Class C EMR for 10KHz-1GHz to 100 Volts/Meter. The vehicle OEM, upon request, will provide EMC testing reports from testing conducted on an entire apparatus and will certify that the vehicle meets SAE J551/2 and SAE J1113/25 Region 1, Class C EMR for 10KHz-1GHz to 100 Volts/Meter requirements. Component and partial (incomplete) vehicle testing is not adequate as overall vehicle design can impact test results and thus is not acceptable by itself.

EMI/RFI susceptibility will be controlled by applying appropriate circuit designs and shielding. The electrical system will be designed for full compatibility with low-level control signals and high-powered two-way radio communication systems. Harness and cable routing will be given careful attention to minimize the potential for conducting and radiated EMI/RFI susceptibility.

**ELECTRICAL**
All 12-volt electrical equipment installed by the apparatus manufacturer will conform to modern automotive practices. All wiring will be high temperature crosslink type. Wiring will be run, in loom or conduit, where exposed and have grommets where wire passes through sheet metal. Automatic reset circuit breakers will be provided which conform to SAE Standards. Wiring will be color, function and number coded. Function and number codes will be continuously imprinted on all wiring harness conductors at 2.00" intervals. Exterior exposed wire connectors will be positive locking, and...
environmentally sealed to withstand elements such as temperature extremes, moisture and automotive fluids.

Electrical wiring and equipment will be installed utilizing the following guidelines:

1. All holes made in the roof will be caulked with silicon, rope caulk is not acceptable. Large fender washers, liberally caulked, will be used when fastening equipment to the underside of the cab roof.
2. Any electrical component that is installed in an exposed area will be mounted in a manner that will not allow moisture to accumulate in it. Exposed area will be defined as any location outside of the cab or body.
3. Electrical components designed to be removed for maintenance will not be fastened with nuts and bolts. Metal screws will be used in mounting these devices. Also a coil of wire will be provided behind the appliance to allow them to be pulled away from mounting area for inspection and service work.
4. Corrosion preventative compound will be applied to all terminal plugs located outside of the cab or body. All non-waterproof connections will require this compound in the plug to prevent corrosion and for easy separation (of the plug).
5. All lights that have their sockets in a weather exposed area will have corrosion preventative compound added to the socket terminal area.
6. All electrical terminals in exposed areas will have silicon (1890) applied completely over the metal portion of the terminal.

All lights and reflectors, required to comply with Federal Motor Vehicle Safety Standard #108, will be furnished. Rear identification lights will be recessed mounted for protection. Lights and wiring mounted in the rear bulkheads will be protected from damage by installing a false bulkhead inside the rear compartments.

An operational test will be conducted to ensure that any equipment that is permanently attached to the electrical system is properly connected and in working order.

The results of the tests will be recorded and provided to the purchaser at time of delivery.

**BATTERY SYSTEM**
There will be six (6) 12 volt DC Odyssey, Model PC 2150 ST-M, 1090 CCA batteries provided.

The SAE studs will be used to connect the batteries to the chassis engine starter.

The threaded studs will be covered.

**BATTERY SYSTEM**
There will be a single starting system with an ignition switch and starter button provided and located on the cab instrument panel.
MASTER BATTERY SWITCH
There will be a master battery switch provided within the cab within easy reach of the driver to activate the battery system.

An indicator light will be provided on the instrument panel to notify the driver of the status of the battery system.

BATTERY COMPARTMENTS
Batteries will be stored in well-ventilated compartments that are located under the cab and bolted directly to the chassis frame. The battery compartments will be constructed of 0.188” steel plate and be designed to accommodate a maximum of three (3) group 31 batteries in each compartment. The battery hold-downs will be of a non-corrosive material. All bolts and nuts will be stainless steel.

The compartments will include formed fit heavy duty roto-molded polyethylene battery trays with drain tubes for the batteries to sit in.

Heavy-duty battery cables will be used to provide maximum power to the electrical system. Cables will be color-coded.

Battery terminal connections will be coated with anti-corrosion compound. Battery solenoid terminal connections will be encapsulated with semi-permanent rubberized compound.

JUMPER STUDS
One (1) set of battery jumper studs with plastic color-coded covers will be installed on the bottom of the driver's side battery box. This will provide for easy jumper cable access.

BATTERY CHARGER
There will be a Newmar, Model EV-40, battery charger with a Newmar, Model 023-5353-1, meter indicating the state of charge.

The vehicle battery output will be capable of supplying up to 40 amps for charging the batteries. The charger will include a 15 amp battery saver connection to charge hand lights, batteries, radios or power a 12 volt compressor.

The battery charger will be wired to the AC shoreline inlet through an AC receptacle adjacent to this battery charger.

The battery charger will be located in the left body compartment mounted on the left wall as high as possible.

The battery charger indicator will be located in the driver's step area.

SHORELINE
There will be one (1) 20 amp 120 volt AC straight blade inlet(s) NEMA 5-20 with gray cover(s) provided to operate the dedicated 120 volt AC circuits on the apparatus.

The shoreline will be connected to the battery charger.
A mating connector body will also be supplied with the loose equipment.

There will be a label installed near the inlet(s) that state the following:

- Line Voltage
- Current Ratting (amps)
- Phase
- Frequency

The shoreline receptacle will be located in the driver side lower step well of cab.

**ALTERNATOR**

A Delco Remy®, Model 55SI, alternator will be provided. It will have a rated output current of 430 amps, as measured by SAE method J56. The alternator will feature an integral regulator and rectifier system that has been tested and qualified to an ambient temperature of 257 degrees Fahrenheit (125 degrees Celsius). The alternator will be connected to the power and ground distribution system with heavy-duty cables sized to carry the full rated alternator output.

**ELECTRONIC LOAD MANAGER**

An electronic load management (ELM) system will be provided that monitors the vehicles 12-volt electrical system, automatically reducing the electrical load in the event of a low voltage condition, and automatically restoring the shed electrical loads when a low voltage condition expires. This ensures the integrity of the electrical system.

For improved reliability and ease of use, the load manager system will be an integral part of the vehicle's solid state control system requiring no additional components to perform load management tasks. Load management systems which require additional components will not be allowed.

The system will include the following features:

- System voltage monitoring.
- A shed load will remain inactive for a minimum of five minutes to prevent the load from cycling on and off.
- Sixteen available electronic load shedding levels.
- Priority levels can be set for individual outputs.
- High Idle to not be controlled by the load manager.
  - If enabled:
    - "Load Man Hi-Idle On" will display on the information center.
    - Hi-Idle will not activate until 30 seconds after engine start up.
- Individual switch "on" indicator to flash when the particular load has been shed.
- The information center indicates system voltage.

The information center, where applicable, includes a "Load Manager" screen indicating the following:

- Load managed items list, with priority levels and item condition.
- Individual load managed item condition:
  - ON = not shed
  - SHED = shed

**SEQUENCER**
A sequencer will be provided that automatically activates and deactivates vehicle loads in a preset sequence thereby protecting the alternator from power surges. This sequencer operation will allow a gradual increase or decrease in alternator output, rather than loading or dumping the entire 12 volt load to prolong the life of the alternator.

For improved reliability and ease of use, the load sequencing system will be an integral part of the vehicle's solid state control system requiring no additional components to perform load sequencing tasks. Load sequencing systems which require additional components will not be allowed.

Emergency light sequencing will operate in conjunction with the emergency master light switch. When the emergency master switch is activated, the emergency lights will be activated one by one at half-second intervals. Sequenced emergency light switch indicators will flash while waiting for activation.

When the emergency master switch is deactivated, the sequencer will deactivate the warning light loads in the reverse order.

Sequencing of the following items will also occur, in conjunction with the ignition switch, at half-second intervals:

- Cab Heater and Air Conditioning
- Crew Cab Heater (if applicable)
- Crew Cab Air Conditioning (if applicable)
- Exhaust Fans (if applicable)
- Third Evaporator (if applicable)

**HEADLIGHTS**
There will be four (4) JW Speaker®, rectangular LED lights mounted in the front quad style, chrome housing on each side of the cab grille:

- The outside light on each side will contain a Model 8800-12V - DOT/ECE LB LED, low beam module.
- The inside light on each side will contain a Model 8800 -12V - DOT/ECE HB LED, high beam module.

**DIRECTIONAL LIGHTS**
There will be two (2) Whelen 600® series, LED combination directional/marker lights provided. The lights will be located on the outside cab corners, next to the headlights.

The color of the lenses will be the same color as the LED's.
INTERMEDIATE LIGHT
There will be two (2) Weldon, Model 9186-8580-29, amber LED turn signal marker lights furnished, one (1) each side, in the rear fender panel. The light will double as a turn signal and marker light.

CAB CLEARANCE/MARKER/ID LIGHTS
There will be five (5) Truck-Lite amber LED lights provided to indicate the presence and overall width of the vehicle in the following locations:

- Three (3) amber LED identification lights will be installed in the center of the cab above the windshield.
- Two (2) Truck-Lite, Model 10006Y kit, amber LED beehive clearance/marker lights will be installed, one (1) on each outboard side of the cab roof, above the windshield.

FRONT CAB SIDE DIRECTIONAL/MARKER LIGHTS
There will be two (2) Truck-Lite®, Model 19035Y, amber LED lights installed to the outside of the chrome wrap around bezel, one (1) on each side of the cab.

The lights will activate as marker lights with the headlight switch and directional lights with the corresponding directional circuit.

REAR CLEARANCE/MARKER/ID LIGHTING
There will be three (3) LED identification lights located at the rear installed per the following:

- As close as practical to the vertical centerline
- Centers spaced not less than 6.00" or more than 12.00" apart
- Red in color
- All at the same height

There will be two (2) LED lights installed at the rear of the apparatus used as clearance lights located at the rear of the apparatus per the following:

- To indicate the overall width of the vehicle
- One (1) each side of the vertical centerline
- As near the top as practical
- Red in color
- To be visible from the rear
- All at the same height

There will be two (2) LED lights installed on the side of the apparatus used as marker lights as close to the rear as practical per the following:

- To indicate the overall length of the vehicle
- One (1) each side of the vertical centerline
- As near the top as practical
- Red in color
- To be visible from the side
- All at the same height

All the rear clearance/marker/ID lighting will be activated when the main battery switch and ignition switch are on.

There will be two (2) red reflectors located on the rear of the truck facing to the rear. One (1) each side, as far to the outside as practical, at a minimum of 15.00", but no more than 60.00", above the ground.

There will be two (2) red reflectors located on the side of the truck facing to the side. One (1) each side, as far to the rear as practical, at a minimum of 15.00", but no more than 60.00", above the ground.

Per FMVSS 108 and CMVSS 108 requirements.

**REAR FMVSS LIGHTING**
The rear stop/tail and directional LED lighting will consist of the following:

- Two (2) Whelen®, Model M6BTT, red LED stop/tail lights
- Two (2) Whelen, Model M6T, amber LED arrow turn lights

The lights shall be provided with color lenses.

Each light will be installed separately at the rear with Whelen, Model M6FC, chrome flanges.

There will be two (2) Whelen Model M6BUW, LED backup lights with chrome trim provided.

**LICENSE PLATE BRACKET**
There will be one (1) license plate bracket mounted on the rear of the body.

A white LED light will illuminate the license plate. A polished stainless steel light shield will be provided over the light that will direct illumination downward, preventing white light to the rear.

**BACK-UP ALARM**
A PRECO, Model 1040, solid-state electronic audible back-up alarm that actuates when the truck is shifted into reverse will be provided. The device will sound at 60 pulses per minute and automatically adjust its volume to maintain a minimum ten (10) dBA above surrounding environmental noise levels.

**WARNING LIGHT FLASH PATTERN**
The flash pattern of all the exterior warning lights will be set to meet the certified California, Title XIII flash pattern by either the light manufacturer's default flash pattern or by a conversion change to the certified flash pattern.

**CAB PERIMETER SCENE LIGHTS**
There will be four (4) Amdor LumaBar H2O, Model AY-9500-020, 20.00" white LED strip lights provided, one (1) for each cab door.
These lights will be activated automatically when the battery switch is on and the exit doors are opened or by the same means as the body perimeter scene lights.

**Pump House Perimeter Lights**

There will be two (2) Amdor LumaBar H2O, Model AY-9500-020, 20.00" LED weatherproof strip lights with brackets provided under the pump panel running boards, one (1) each side.

The lights will be controlled by the same means as the body perimeter lights.

**Body Perimeter Scene Lights**

There will be two (2) Amdor LumaBar H2O™, Model AY-9500-020, 20.00" 12 volt DC LED strip lights provided at the rear step area of the body, one (1) each side shining to the rear.

The perimeter scene lights will be activated when the parking brake is applied.

**Step Lights**

There will be two (2) white LED step lights will be provided at the rear to illuminate the tailboard/step area.

In order to ensure exceptional illumination, each light will provide a minimum of 25 foot-candles (fc) covering an entire 15" x 15" square placed ten (10) inches below the light and a minimum of 1.5 fc covering an entire 30" x 30" square at the same ten (10) inch distance below the light.

These step lights will be actuated with the perimeter scene lights.

All other steps on the apparatus will be illuminated per the current edition of NFPA 1901.

**12 Volt Lighting**

There will be two (2) Whelen Model PFP2, 12 volt LED floodlight(s) installed in semi-recessed housing(s) Model PBA203 located on the passenger side, on either end of the hatch compartment.

The painted parts of this light assembly to be white.

The light(s) selected above will be controlled by the following:

- a switch at the driver's side switch panel
- a switch at the pump operator's panel
- a switch at the passenger's side switch panel
- no additional switch location

These light(s) may be load managed when the parking brake is set

**12 Volt Lighting**

There will be two (2) Whelen®, Model MPR15*, 12 volt DC LED floodlight(s) installed in a chrome bezel angled down 15 degrees, located high on the rear of the body.

The painted parts of this light assembly to be white.
The light(s) selected above will be controlled by the following:

- a switch at the driver's side switch panel
- a switch at the rear of apparatus on the driver's side
- a switch at the passenger's side switch panel
- no additional switch location

These light(s) may be load managed when the parking brake is applied.

**12 VOLT LIGHTING**

There will be two (2) Whelen Model PFP2, 12 volt LED floodlight(s) installed in semi-recessed housing(s) Model PBA203 located on the driver side, on either end of the hatch compartment.

The painted parts of this light assembly to be white.

The light(s) selected above will be controlled by the following:

- a switch at the driver's side switch panel
- a switch at the pump operator's panel
- on the PS switch panel
- no additional switch location

These light(s) may be load managed when the parking brake is set

**12 VOLT LIGHTING**

There will be one (1) Whelen® Pioneer™, Model PCP2*, 12 volt LED combination spot/flood light(s) provided on the front visor, centered.

The painted parts of this light assembly to be white.

The light(s) will be controlled by the following:

- a switch at the driver's side switch panel
- a switch at the passenger's side switch panel
- no additional switch location

These light(s) may be load managed when the parking brake is set.

**HOSE BED LIGHTS**

There will be white 12 volt DC LED light strips with stainless steel protective cover, provided to light the hose bed area.

- One (1) light strip will be installed the entire length of the driver's side of the hose bed.
- One (1) light strip will be installed the entire length of the passenger's side of the hose bed.

The lights will be activated by a cup switch at the rear of the apparatus no more than 62.00" from the ground.
WATER TANK

Booster tank will have a capacity of 500 gallons and be constructed of UV stabilized ultra high impact polypropylene plastic by a manufacturer with a minimum of 20 years experience building tanks, is ISO 9001:2000 certified in all its manufacturing facilities, and has over 50,000 tanks in service.

The booster tank will be a form-fitting design that serves to keep the tank height as low as possible. The tank will be no wider than 39" at the base to allow for greater compartment depth and no wider than 53" at the top.

Tank joints and seams will be nitrogen welded inside and out.

Tank will be baffled in accordance with NFPA Bulletin 1901 requirements.

Baffles will have vent openings at both the top and bottom to permit movement of air and water between compartments.

Longitudinal partitions will be constructed of .38" polypropylene plastic and will extend from the bottom of the tank through the top cover to allow for positive welding.

Transverse partitions will extend from 4.00" off the bottom of the tank to the underside of the top cover.

All partitions will interlock and will be welded to the tank bottom and sides.

Tank top will be constructed of .50" polypropylene. It will be recessed .38" and will be welded to the tank sides and the longitudinal partitions.

Tank top will be sufficiently supported to keep it rigid during fast filling conditions.

Construction will include 2.00" polypropylene dowels spaced no more than 30.00" apart and welded to the transverse partitions. Two (2) of the dowels will be drilled and tapped (.50" diameter, 13.00" deep) to accommodate lifting eyes.

A sump that is 8.00" long x 8.00" wide x 6.00" deep will be provided at the bottom of the water tank.

Sump will include a drain plug and the tank outlet.

Tank will be installed in a fabricated cradle assembly constructed of structural steel.

Sufficient crossmembers will be provided to properly support bottom of tank. Crossmembers will be constructed of steel bar channel or rectangular tubing.

Tank will "float" in cradle to avoid torsional stress caused by chassis frame flexing. Rubber cushions, .50" thick x 3.00" wide, will be placed on all horizontal surfaces that the tank rests on.

Stops or other provision will be provided to prevent an empty tank from bouncing excessively while moving vehicle.
Mounting system to be approved by the tank manufacturer.

Fill tower will be constructed of .50" polypropylene and will be a minimum of 8.00" wide x 14.00" long.

Fill tower will be furnished with a .25" thick polypropylene screen and a hinged cover.

An overflow pipe, constructed of 4.00" schedule 40 polypropylene, will be installed approximately halfway down the fill tower and extend through the water tank and exit to the rear of the rear axle.

One (1) sleeve will be provided in the water tank for a 3.00" pipe to the rear.

**BODY HEIGHT**
The height of the body will be 92.00" from the bottom of the body to the top of the body.

**HOSE BED**
The hose bed will be fabricated of .125"-5052 aluminum with a nominal 38,000 psi tensile strength.

Flooring of the hose bed will be removable aluminum grating with the top surface corrugated to aid in hose aeration. The grating slats will be a minimum of 0.50" x 4.50" with spacing between slats for hose ventilation.

Hose bed will accommodate 1000' of 2.5", 500' of 4", and 150' of 1.75".

**HOSE BED DIVIDER**
Two (2) adjustable hosebed dividers will be furnished for separating hose.

Each divider will be constructed of a .125" brushed aluminum sheet fitted and fastened into a slotted, 1.50" diameter radiused extrusion along the top, bottom, and rear edge.

Divider will be fully adjustable by sliding in tracks, located at the front and rear of the hose bed.

Divider will be held in place by tightening bolts, at each end.

Acorn nuts will be installed on all bolts in the hose bed which have exposed threads.

**SHELF, HINGED IN HOSE BED**
There will be one (1) hinged shelves, constructed of aluminum grating, provided for hose or equipment storage inside the hose bed located on the passenger side, located high enough between the divider and side sheet to allow for a 150' bundle on the lower portion of the shelf on the passenger's side. The shelf will be attached to the hose bed side sheet.

**HOSE BED COVER**
A four (4) section full length hose bed cover, constructed of .125" bright aluminum treadplate will be furnished. The cover will be split into front and rear at the cross divider with each section having a left and right side. Each section will be attached with a full length stainless steel piano hinge. The sides will be slanted down.

The cover will be reinforced so that it can support the weight of a man walking on the cover.
The cover is designed with the left cover opening first.

Chrome grab handles and gas filled cylinders will be provided to assist in opening and closing the cover. A handrail is to be provided at the rear, in the center of the support, to assist in opening the cover.

**HOSEBED END FLAP**
A pair of black vinyl flaps will be installed on the rear, one for each of the aluminum treadplate hose bed covers.

Each vinyl flap will have (2) nylon tie down straps, with seat belt buckles.

**RUNNING BOARDS**
A running board will be provided on each side of the front body to allow access to the backboard/crosslay storage area. The running boards will be designed with a grip pattern punched into .125" bright aluminum treadplate material providing support, slip resistance, and drainage.

**TAILBOARD**
The tailboard will be constructed of .125" bright aluminum treadplate and spaced .50" from the body, as well as supported by a structural steel assembly.

The tailboard area will be 14.00" deep and full width of the body. The outboard sides of the tailboard will be angled at 45 degrees beginning at the point where the body meets the tailboard at the forward outboard edge angling rearward to the rear edge of the tailboard.

The exterior side will be flanged down and in for increased rigidity of tailboard structure.

**REAR WALL, BODY MATERIAL, PUC**
The rear wall will be smooth and the same material as the body.

The rear wall body material will be painted. Unpainted aluminum overlays will be provided to allow for chevron application and to provide continuously smooth rear wall panels.

The outboard edges of the rear wall will be trimmed in polished stainless steel.

**TOW BAR**
A tow bar will be installed under the tailboard at center of truck.

Tow bar will be fabricated of 1.00" CRS bar rolled into a 3.00" radius.

Tow bar assembly will be constructed of .38" structural angle. When force is applied to the bar, it will be transmitted to the frame rail.

Tow bar assembly will be designed and positioned to allow up to a 30-degree upward angled pull of 17,000 lb, or a 20,000 lb straight horizontal pull in line with the centerline of the vehicle.
Tow bar design will have been fully tested and evaluated using strain gauge testing and finite element analysis techniques.

**COMPARTMENTATION**
The apparatus body will be built of aluminum construction using a minimum of .125" thick, 5052-H32 aluminum.

The body panel assembly will be constructed in a fixture and consist of formed sheet metal for the front and rear bulkheads, door frames, floors, ceilings, and back walls. These parts will be welded together to ensure greatest longevity with no visible welds in compartment interior.

Welded construction will consist of 1.00" x .38" engineered plug weld holes that control the size, location, and the amount of weld required. The bodies will be assembled and welded from engineered prints that call out the size, location, and type of weld required.

In structural areas the sheet metal components will have flanges for welding. No butt joints will be allowed. Gussets and support posts will be provided for additional strength where needed.

The fender panel will be an integral part of the complete welded body assembly. All light and compartment holes are pre punched prior to construction to provide accuracy and rounded corners to prevent stress risers in the material.

Circular fender liners will be provided. For prevention of paint chips and ease of suspension maintenance the fender liners will be formed from brush finished 304L stainless steel, be unpainted, and removable for suspension maintenance.

Compartment flooring will be of the sweep out design with the floor minimum of 1.00" higher than the compartment door lip.

Drip protection will be provided above the doors by means of aluminum extrusion, or formed bright aluminum treadplate.

The top of the compartment will be sheet metal and covered with bright aluminum treadplate rolled over the edges on the front, and rear. These covers will have the corners welded.

The aluminum treadplate covers will not make up the ceiling of the compartment.

All screws and bolts, which are not Grade 8, will be stainless steel and where they protrude into a compartment will have acorn nuts on the ends to prevent injury.

**UNDERBODY SUPPORT SYSTEM**
Due to the severe loading requirements of this pumper a method of body and compartment support suitable for the intended load will be provided.

The backbone of the body support system will begin with the chassis frame rails which is the strongest component of the chassis and is designed for sustaining maximum loads. The support system will
include lateral frame rail extensions that are formed from .375" 80k high strength steel and bolted to
the chassis frame rails with .625" diameter Grade 8 bolts.

The vertical and horizontal members of the frame rail extensions are to be reinforced with welded
gussets and extend to the outside edge of the body. The lateral frame extensions will be electro-
coated for superior corrosion resistance.

The floating substructure will be separated from the lateral frame extensions with neoprene elastomer
isolators. These isolators will reduce the natural flex stress of the chassis from being transmitted to
the body, and absorb road shock and vibration.

The isolators will have a broad load range, proven viability in vehicular applications, be of a fail safe
design and allow for all necessary movement in three (3) transitional and rotational modes.

The neoprene isolators will be installed in a modified V three (3)-point mounting pattern to reduce the
natural flex of the chassis being transmitted to the body. Two (2) 3.50" diameter isolators are
provided at the front of the body near the centerline of the vehicle above the chassis frame. A
minimum of eight (8) - 2.55" diameter isolators will be provided, two (2) under each front
compartment and two (2) under each rear side compartment. A minimum of four (4) 3.50" diameter
isolators will be provided under the rear compartment.

A design with body compartments simply hanging/sitting on the chassis in an unsupported (cantilever)
fashion will not be acceptable.

AGGRESSIVE WALKING SURFACE
All exterior surfaces designated as stepping, standing, and walking areas will comply with the required
average slip resistance of the current NFPA standards. Documentation of the material meeting the
standard will be provided at time of delivery.

LOUVERS
All body compartments will have a minimum of one (1) set of automotive style, dust resistant louvers
pressed into a wall. The louvers will incorporate a one (1)-way rubber valve that provides airflow out
of the compartment and prevents water and dirt from gaining access to the compartment.
Compartments over the wheel will not have louvers.

TESTING OF BODY DESIGN
Body structural analysis will be fully tested. Proven engineering and test techniques such as finite
element analysis and strain gauging have been performed with special attention given to fatigue life
and structural integrity of the body and substructure.

The body will be tested while loaded to its greatest in-service weight.

The criteria used during the testing procedure will include:

- Raising opposite corners of the vehicle tires 9.00" to simulate the twisting a truck may experience
  when driving over a curb.
- Making a 90 degree turn, while driving at 20 mph to simulate aggressive driving conditions.

- Driving the vehicle on at 35 mph on a washboard road.

- Driving the vehicle at 55 mph on a smooth road.

- Accelerating the vehicle fully, until reaching the approximate speed of 45 mph on rough pavement.

Evidence of the actual testing techniques will be made available upon request.

FEA will have been performed on all substructure components.

**COMPARTMENTATION, DRIVER'S SIDE**

A full height, roll-up door compartment ahead of the rear wheels will be provided. The pump operator's panel will be located in this compartment. The interior dimensions of this compartment will be 50.00" wide x 53.50" high x 25.88" deep. The area behind the roll up door spool will be notched for exterior storage or larger capacity water tank tee. The depth of the compartment will be calculated with the compartment door closed. The compartment interior will be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment will be 47.00" wide x 53.50" high.

Closing of the door will not require releasing, unlocking, or unlatching any mechanism and will easily be accomplished with one hand.

A roll-up door compartment over the rear wheels will be provided. The interior dimensions of this compartment will be 60.00" wide x 22.75" high x 25.88" deep. The area behind the roll up door spool will be notched for exterior storage or larger capacity water tank tee. The depth of the compartment will be calculated with the compartment door closed. The clear door opening of this compartment will be 57.00" wide x 22.75" high.

Closing of the door will not require releasing, unlocking, or unlatching any mechanism and will easily be accomplished with one hand.

A full height, roll-up door compartment behind the rear wheels will be provided. The interior dimensions of this compartment will be 52.00" wide x 54.50" high x 25.88" deep. The area behind the roll up door spool will be notched for exterior storage or larger capacity water tank tee. The depth of the compartment will be calculated with the compartment door closed. The compartment interior will be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment will be 49.00" wide x 54.50" high.

Closing of the door will not require releasing, unlocking, or unlatching any mechanism and will easily be accomplished with one hand.

All compartments will include a drip pan below the roll of the door.
COMPARTMENTATION, PASSENGER'S SIDE
A full height, jump off compartment with a roll-up door ahead of the rear wheels will be provided, as convenient large storage compartment for often used items for the crew. The interior dimensions of this compartment will be 50.00" wide x 54.50" high x 25.88" deep. The area behind the roll up door spool will be notched for exterior storage or larger capacity water tank tee. The depth of the compartment will be calculated with the compartment door closed. The compartment interior will be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment will be 47.00" wide x 54.50" high.

Closing of the door will not require releasing, unlocking, or unlatching any mechanism and will easily be accomplished with one hand.

A roll-up door compartment over the rear wheels will be provided. The interior dimensions of this compartment will be 60.00" wide x 23.00" high x 25.88" deep. The area behind the roll up door spool will be notched for exterior storage or larger capacity water tank tee. The depth of the compartment will be calculated with the compartment door closed. The clear door opening of this compartment will be 57.00" wide x 23.00" high.

Closing of the door will not require releasing, unlocking, or unlatching any mechanism and will easily be accomplished with one hand.

A full height, roll-up door compartment behind the rear wheels will be provided. The interior dimensions of this compartment will be 52.00" wide x 54.50" high x 25.88" deep. The area behind the roll up door spool will be notched for exterior storage or larger capacity water tank tee. The depth of the compartment will be calculated with the compartment door closed. The compartment interior will be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment will be 49.00" wide x 54.50" high.

Closing of the door will not require releasing, unlocking, or unlatching any mechanism and will easily be accomplished with one hand.

All compartments will include a drip pan below the roll of the door.

ROLLUP DOOR, SIDE COMPARTMENTS
There will be six (6) compartment doors installed on the side compartments. The doors will be double faced aluminum construction, painted one (1) color to match the lower portion of the body and manufactured by A&A Manufacturing (Gortite).

Lath sections will be an interlocking rib design and will be individually replaceable without complete disassembly of door.

Between each slat at the pivoting joint will be a PVC inner seal to prevent metal to metal contact and prevent dirt or moisture from entering the compartments. Seals will allow door to operate in extreme
temperatures ranging from plus 180 to minus 40 degrees Fahrenheit. Side, top and bottom seals will be provided to resist ingress of dirt and weather and be made of Santoprene.

All hinges, barrel clips and end pieces will be nylon 66. All nylon components will withstand temperatures from plus 300 to minus 40 degrees Fahrenheit.

A polished stainless steel lift bar with locking key latches to be provided for each roll-up door. The keys to be Model 751 to match all compartment and cab doors. Lift bar will be located at the bottom of door and have latches on the outer extrusion of the doors frame. A ledge will be supplied over lift bar for additional area to aid in closing the door.

Doors will be constructed from an aluminum box section. The exterior surface of each slat will be flat. The interior surfaces will be concave to provide strength and prevent loose equipment from jamming the door from inside.

To conserve space in the compartments, the spring roller assembly will not exceed 3.00" in diameter.

The header for the rollup door assembly will not exceed 4.00".

A heavy-duty magnetic switch will be used for control of open compartment door warning lights.

COMPARTMENTATION, REAR
A roll-up door compartment above the rear tailboard shall be provided.

Interior dimensions of this compartment shall be approximately 36.75" wide x 42.38" high x 25.88" deep in the lower 33.75" of height and 15.75" deep in the remaining upper portion. Depth of the compartment shall be calculated with the compartment door closed.

A removable access panel shall be furnished on the back wall of the compartment.

Rear compartment shall be open to the rear side compartments. The transverse opening will be a minimum of approximately 22.00" wide x 28.75" high.

Clear door opening of this compartment shall be 33.50" wide x 33.75" high.

Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.

ROLL-UP DOOR, REAR COMPARTMENT
The rear compartment will have a roll-up door. The door will be double faced aluminum construction, an anodized satin finish and manufactured by A&A Manufacturing (Gortite).

Lath sections will be an interlocking rib design and will be individually replaceable without complete disassembly of door.

Between each slat at the pivoting joint will be a PVC inner seal to prevent metal to metal contact and prevent dirt or moisture from entering the compartments. Seals will allow door to operate in extreme
temperatures ranging from plus 180 to minus 40 degrees Fahrenheit. Side, top and bottom seals will be provided to resist ingress of dirt and weather and be made of Santoprene.

All hinges, barrel clips and end pieces will be nylon 66. All nylon components will withstand temperatures from plus 300 to minus 40 degrees Fahrenheit.

A polished stainless steel lift bar with locking key latches to be provided for each roll-up door. The keys to be Model 751 to match all compartment and cab doors. Lift bar will be located at the bottom of door and have latches on the outer extrusion of the doors frame. A ledge will be supplied over lift bar for additional area to aid in closing the door.

Door will be constructed from an aluminum box section. The exterior surface of each slat will be flat. The interior surface will be concave to provide strength and prevent loose equipment from jamming the door from inside.

To conserve space in the compartments, the spring roller assembly will not exceed 3.00" in diameter.

The header for the roll-up door assembly will not exceed 4.00".

A heavy-duty magnetic switch will be used for control of open compartment door warning lights.

**LATCH, D-RING STYLE**
A flush D-Ring style latch will be provided on the hatch compartment door(s).

**COMPARTMENT LIGHTING**
There will be seven (7) compartment(s) with a single Pierce LED compartment light strip. Each light strip will be centered vertically along the door framing. There will be one (1) light per compartment. The single light strip will be in compartment(s): all compartment doors.

Any remaining compartment without a light strip will have a 6.00" diameter Truck-Lite, Model: 79384 light. Each light will have a number 1076 one filament, two wire bulb.

Opening the compartment door will automatically turn the compartment lighting on.

**HATCH COMPARTMENTS**
Hatch compartments with two (2) lift-up, top opening hatch doors will be provided above the driver and passenger side body compartments. Each hatch compartment will extend the full length of the side body compartmentation x 21.00" wide x 22.00" maximum depth. The compartments will extend the full length of the side body compartmentation except for a 20.00" recessed step area at the rear of the compartment on the access ladder side.

Sides of the compartments will be constructed of the same material as the body and painted job color on the outside panels.

Top of the compartments will be constructed of bright aluminum treadplate.
Two (2) lift-up, bright aluminum treadplate doors will be provided on the top of each hatch compartment. Each door will have a lever handle with a slam style latch to hold the doors in the closed position.

These double pan doors will have lipped edges with a rubber seal for weather resistance.

Doors will be hinged on the outboard side and will be held open with pneumatic stay arms.

The compartments will have a 3/4" drain that extends to below the body.

Ribbed rubber matting will be provided on the compartment floor to stop wet equipment from sitting in water pools.

**HATCH COMPARTMENT LIGHTING**
There will be LED strip lights mounted full length on the interior, hinged side of each compartment.

Opening the hatch compartment door will automatically turn the hatch compartment lighting on.

**MOUNTING TRACKS**
There will be recessed tracks installed vertically to support the adjustable shelf(s).

Tracks will not protrude into any compartment in order to provide the greatest compartment space and widest shelves possible.

The tracks will be provided in each compartment except for the one that contains the pump operator's panel.

**ADJUSTABLE SHELVES**
There will be nine (9) shelves, with a capacity of 500 lb provided. The shelf construction will consist of .188" thick aluminum with 2.00" sides. Each shelf will as wide and as deep as the compartment space will allow. Each shelf will be painted spatter gray.

Each shelf will be infinitely adjustable by means of a threaded fastener, which slides in a track.

The shelves will be held in place by .12" thick stamped plated brackets and bolts.

The location will be two in D1, one in R1, three in P3, one in P2, two in P1.

**SLIDE-OUT ADJUSTABLE HEIGHT TRAY**
There will be one (1) slide-out tray provided.

Each tray will have 2.00" high sides and a capacity rating of up to 500 lb in the extended position.

Each tray will be painted to match the compartment interior.

Each tray will be mounted on a pair of side mounted slides. The slide mechanisms will have ball bearings for ease of operation and years of dependable service. The slides will be mounted to shelf tracks to allow the tray to be adjustable up and down within the designated mounting location.
An automatic lock will be provided for both the in and out tray positions. The lock trip mechanism will be located at the front of the tray and will be easily operated with a gloved hand.

The tray(s) will be located in the D3 compartment.

**SLIDE-OUT FLOOR MOUNTED TRAY**

There will be four (4) floor mounted slide-out tray(s) with 2.00” sides provided one in D3, one in D1, one in R1, one in P3. Each tray will be rated for up to 500lb in the extended position. The tray(s) will be constructed of .19” aluminum with non-welded corners. The finish will be painted to match compartment interior.

There will be two undermount-roller bearing type slides rated at 250lb each provided. The pair of slides will have a safety factor rating of 2.

To ensure years of dependable service, the slides will be coated with a finish that is tested to withstand a minimum of 1,000 hours of salt spray per ASTM B117.

To ensure years of easy operation, the slides will require no more than a 50lb force for push-in or pull-out movement when fully loaded after having been subjected to a 40 hour vibration (shaker) test under full load. The vibration drive file will have been generated from accelerometer data collected from a heavy truck chassis driven over rough gravel roads in an unloaded condition. Proof of compliance will be provided upon request.

Automatic locks will be provided for both the "in" and "out" positions. The trip mechanism for the locks will be located at the front of the tray for ease of use with a gloved hand.

**SWING OUT TOOLBOARD**

A swing out aluminum toolboard will be provided.

It will be a minimum of .188” thick with a 1.00” x 1.00” aluminum tube frame welded around the edge.

The board will be mounted on a pivoting device at the front of the compartment on the top and bottom to allow easy movement in and out of the compartment. The maximum tool load will be 400 pounds.

The board will have positive lock in the stowed and extended position.

The board will be mounted on adjustable tracks from front to back within the compartment.

There will be One (1) toolboard(s) provided. The toolboard(s) will be spatter gray painted and installed in the D2 compartment.

**SLIDE-OUT TOOLBOARD**

A slide-out aluminum toolboard will be provided. It will have a painted finish to match the compartment interior.

It will be a minimum of 0.188" thick with 0.203" diameter holes in a pegboard pattern with 1.00" centers between holes.
A 1.00" x 1.00" aluminum tube frame will be welded to the edge of the pegboard.

The board will be mounted on an undermount-roller bearing type slide rated at 250 lb with a factor of safety of 2.

To ensure years of dependable service the slides will be coated with a finish that is tested to withstand a minimum of 1,000 hours of salt spray per ASTM B117.

To ensure years of easy operation, the slides will require no more than a 50 pound force for push-in or pull-out movement when fully loaded after having been subjected to a 40 hour vibration (shaker) test under full load. The vibration drive file will have been generated from accelerometer data collected from a heavy truck chassis driven over rough gravel roads in an unloaded condition. Proof of compliance will be provided upon request.

The board will have positive lock in the stowed and extended position.

The toolboard will be mounted on adjustable tracks side to side within the compartment.

There will be Two (2) provided.

The toolboard(s) will be located one in the D3, one in D1.

**DRAWER ASSEMBLY**

A slideout drawer assembly will be installed in the D3 compartment.

The clear dimensions starting at the top of the cabinet with the first drawer will be 2.25" with a face plate that is 3.00" high x 21.00" deep. The clear dimensions of the second drawer will be 2.75" with a face plate that is 3.00" high x 21.00" deep. The clear dimensions of the third drawer will be 2.75" with a face plate that is 3.00" high x 21.00" deep. The clear dimensions of the fourth drawer will be 2.75" with a face plate that is 3.00" high x 21.00" deep. Each drawer will be the same width and not exceed 24.00".

The drawers will have a capacity of 250 pounds.

The drawers will be mounted in a cabinet housing constructed of light gray powder coated aluminum with anodized aluminum frames. The housing will be 24.00" deep, and completely enclose the drawer.

A full-length aluminum extruded rail will be provided at the top edge of each drawer. This rail will act as the latching mechanism as well as the handle for each drawer.

There will be a total of one (1) provided.

**BACKBOARD STORAGE**

Mounting will provide for one (1) backboard(s) located above the crosslays. The backboard(s) will be enclosed and removable from either side of the truck. The backboard(s) will be to be determined at pre-construction.
PARTITION, TRANSVERSE REAR COMPARTMENT
Two (2) partitions will be bolted in place to separate driver and passenger side rear compartments from the rear tailboard compartment.

Each partition will be permanently sealed with caulk to ensure no water will leak in to the adjoining compartments.

PARTITION, VERTICAL COMPARTMENT
Two (2) partitions shall be bolted in one in D1, one in P1. Each partition shall be the full vertical height of the compartment.

RUB RAIL
Bottom edge of the side compartments will be trimmed with a bright aluminum extruded rub rail.

Trim will be 3.12" high with 1.50" flanges turned outward for rigidity.

The rub rails will not be an integral part of the body construction, which allows replacement in the event of damage.

Rub rails will be attached with bolts and spaced from the body with isolators that will help to absorb any moderate impact without damaging the body.

BODY FENDER CROWNS
Polished stainless steel fender crowns will be provided around the rear wheel openings.

A brushed stainless steel unpainted fender liner will be provided to avoid paint chipping. The liners will be removable to aid in the maintenance of rear suspension components.

A dielectric barrier will be provided between the fender crown fasteners (screws) and the fender sheet metal to prevent corrosion.

The fender crowns will be held in place with stainless steel screws that thread directly into a composite nut and not directly into the parent body sheet metal to eliminate dissimilar metals contact and greatly reduce the chance for corrosion.

HARD SUCTION HOSE
Hard suction hose will not be required.

- Two (2) vertical handrails will be located at the rear, one on each side of the rear compartment.

AIR BOTTLE STORAGE (TRIPLE)
A quantity of three (3) air bottle compartments designed to hold (3) air bottles up to 7.25" in diameter x 26.00" deep will be provided on the driver side forward of the rear wheels, on the passenger side forward of the rear wheels and on the passenger side rearward of the rear wheels. A painted stainless
steel door with a Southco non-locking C2 chrome lever latch will be provided to contain the air bottle. A dielectric barrier will be provided between the door hinge, hinge fasteners and the body sheet metal.

Inside the compartment, black rubber matting will be provided.

**AIR BOTTLE COMPARTMENT STRAP**
A strap will be provided in the air bottle compartment(s) to help contain the air bottles when the vehicle is parked on an incline. The strap will wrap around the neck and attach to the wall of the compartment.

**EXTENSION LADDER**
There will be a 24', two-section, aluminum, Duo-Safety, Series 900-A extension ladder provided.

**ROOF LADDER**
There will be a 14' aluminum, Duo-Safety, Series 775-A roof ladder provided.

**LADDER STORAGE**
The ladders will be stored inside the upper section of the passenger's side compartments. This ladder rack will reduce the depth of the upper section in the side compartments.

A partition will be installed inside the compartment on the side of the rack to allow for equipment storage and to conceal the ladders.

The ladders will be with the feet towards the back of the body, with the base section of the 24' extension ladder towards the passenger side. The 24' ladder will be towards the center of the truck, with the 14' ladder towards the passenger side.

The ladder storage assembly will be fabricated of stainless steel track channels to aid in loading and removal of ladders.

Rear of the ladder storage area will have a vertically hinged smooth aluminum door with a D-handle latch to contain the ladders.

**FOLDING LADDER**
One (1) 10.00' aluminum, Series 585-A, Duo-Safety folding ladder will be installed in a U-shaped trough inside the ladder storage compartment.

**6' PIKE POLE**
One (1) pike pole 6' long RH-6DA Nupla ventilation hook(s) with an aluminum D-grip handle will be provided and located ok to shorten thines but keep points to fit in the long handle tool storage.

**PIKE POLES**
There will be one (1) 8' Nupla pike pole(s), Featherlite provided.

**PIKE POLE, 6'**
One (1) pike pole 6' long with a Nupla Featherlight fiberglass handle will be provided and located in the pike pole compartment.
PIKE POLE/FOLDING LADDER COMPARTMENT
One (1) pike pole compartment will be provided, recessed in the upper, inside part of body compartment on the driver’s side. The compartment will be equipped with two (2) aluminum tubes to hold two (2) pike poles and a stainless steel trough for the folding ladder. The door will be made of smooth aluminum and have a lift and turn latch.

One (1) compartment will be provided, recessed in the upper, inside part of body compartment on the passenger’s side for storage of long handle tools. The door will be made of smooth aluminum and have a lift and turn latch.

TRASH HOOK STORAGE
There will be one (1) stainless steel U-shaped trough(s) provided for storage of D-handle style trash hook(s). The trough(s) will be installed in the long handle tool trough on the driver side.

LADDER, TOP ACCESS
A wide easy climbing access ladder, constructed of aluminum rungs and extruded aluminum rails, will be provided on the right side at the rear of the apparatus. The inside climbing area of the ladder will be 13.75” wide.

The lower section of the ladder will be retractable into the upper section to eliminate interference with the rear FMVSS lights. When lowered the bottom rung will be lower than the body, approximately 16.00” to 20.00” from the ground to allow a lower first step height.

The ladder will be slanted when in use for easy access, and fold against the body for storage to reduce the overall length. Corrosion resistant, stainless steel spring-loaded locks will hold the ladder in place.

One (1) additional folding step 1 pair(s) of steel 1.05 O.D. mounting tubes welded to a steel plate will be bolted to the inside beavertail area. A removable 3/4” steel rod I zone bracket will be pinned into the tubes mounted at the corners of the hosebed.

PUMP
Pump will be a Pierce, low profile, 1500 gpm single stage midship mounted centrifugal type, mounted below the cab. The pump will have a 15 percent reserve capacity to allow for extended time between pump rebuild. To ensure efficient pump/vehicle design the capacity to weight ratio will not be less than 1.5:1.

The pump casing will consist of three (3) discharge outlets, one (1) to each side in line with the impeller and one (1) to the rear. The pump casing will incorporate two (2) water strippers to maintain radial balance.

Pump will be the Class A type.

Pump will be certified to deliver the percentage of rated discharge from draft at pressure indicated below:

- 100 percent of rated capacity at 150 psi net pump pressure
- 70 percent of rated capacity at 200 psi net pump pressure
- 50 percent of rated capacity at 250 psi net pump pressure

The pump will have the capacity to deliver the percentage of rated discharge from a pressurized source as indicated below:

- 135 percent of rated capacity at 100 psi net pump pressure from a 5 psi source

Pump body will be fine-grained gray iron. Pump will incorporate a heater/cooling jacket integral to the pump housing.

The impeller will be high strength vacuum cast bronze alloy accurately machine balanced and splined to a 10 spline stainless steel pump shaft for precision fit, exceptional durability, and efficiency. Double replaceable reverse flow labyrinth type bronze wear ring design will help to minimize end thrust. The impeller will be a twisted vane design to create higher lift.

The pump will include o-ring gaskets throughout the pump.

Deep groove radial type oversize ball bearings will be provided. The bearings will be protected at the openings from road dirt and water with an oil seal and a water slinger.

The pump will have a flat, patterned area on the top of the pump intake wye to allow standing for plumbing maintenance. The main inlet manifold will be 6.00" in diameter and will have a low profile design to facilitate low crosslays and high flows.

For ease of service, the pump housing, intake wye, impeller, mechanical seal, and gear case will be accessible from above the chassis frame by tilting the cab. The intake wyes will be removable without having to remove the main intake casting. Removal of the main inlet wyes will provide access to the impeller, mechanical seal, and wear ring.

The tank to pump line and the primary discharge line will be the only piping required to be removed for overhaul.

For ease of service and overhaul there will be no piping or manifolding located directly over the pump.

**PUMP MOUNTING**
Pump will be mounted to the chassis frame rails directly below the crew cab, to minimize wheelbase and facilitate service, using rubber isolators in a modified V pattern that include two (2) central mounted isolators located between the frame rails, and one (1) on each side outside the frame rails. The mounting will allow chassis frame rails to flex independently without damage to the fire pump. Each isolator will be 2.55" in total outside diameter and will be rated at 490 lb. The pump will be completely accessible by tilting the cab with no piping located directly above the pump.

**MECHANICAL SEALS**
Silicon carbide mechanical seals will be provided. The seals will be spring loaded and self-adjusting. The seals will have a minimum thermal conductivity of 126 W/m*K to run cooler. Seals will have a
minimum hardness of 2800 kg/mm² to be more resistant to wear, and have thermal expansion characteristics of no more than 4.0 X10⁶mm/mm*K to be more resistant to thermal shock.

**PUMP GEARCASE**
Pump gearcase will be a pressure-lubricated gearcase to cool, lubricate, and filter the oil. The gearcase will include an auxiliary PTO opening. The gearcase will be constructed of lightweight aluminum, and impregnated with resin in accordance to MIL Spec MIL-I-17563. A dipstick, accessible by tilting the cab, will be provided for easy fluid level checks. A filter screen will be provided for long life.

The gearcase will consist of two (2) gears to drive the pump impeller and one (1) for the auxiliary PTO.

The auxiliary PTO opening will provide for the addition of PTO driven accessories.

The pump will be driven through the rear engine power take-off and clutch. The rear engine power take-off drive will be live at all times to allow for pump and roll applications. Rear engine power take-off's allow for high horsepower and torque ratings needed for large pump applications, and is a proven drive system throughout the rugged construction industry.

**CLUTCH**
Pierce "Sure Shift Technology" will incorporate a heavy-duty electric clutch mounted directly to the front of the pump to engage and disengage the pump without gear clash. The clutch will be a multiple disc design for maximum torque. The clutch will be fully self-adjusting to provide automatic wear compensation, and consistent torque throughout the life of the clutch. Positive engagement and disengagement will be provided through a high efficient and dependable magnetic system to assure superior performance. The clutch will have a 500 lb-ft rating. Clutch will be of a time-tested design used in critical military applications.

**PUMPING MODE**
Pump will provide for both pump and roll mode and stationary pumping mode.

Stationary pumping mode will be accomplished by stopping the vehicle, setting the parking brake and engaging the water pump switch on the cab switch panel. The transmission will shift to "Neutral" range automatically when the parking brake is set. The "OK to Stationary Pump" indicator will also illuminate when the parking brake is set. If the vehicle is equipped with a foam system or CAFS system, these systems will be engaged from the cab switch panel as well.

Pump and roll mode will be accomplished by the use of the main pump and will not require the use of a secondary pump. Pump and roll mode will use the same operation sequence as stationary pumping mode with a few additional steps. After the vehicle is setup for stationary pumping, the operator will leave the cab and set-up the pump panel to discharge at the desired outlet(s). Upon returning to the cab, the operator will disengage the parking brake. An "OK to Pump & Roll" indicator will illuminate on the cab switch panel. First gear on the transmission gear selector will be selected by the operator for pump and roll operations. The operator as needed will apply the foot throttle. Pump and roll mode will be maintained unless the transmission shifts out of first gear.
Stopping either stationary pumping mode or pump and roll mode will be accomplished by pressing the "Water Pump" switch down to disengage the pump.

**PUMP SHIFT**

Pump will be engaged in not more than two steps, by simply setting the parking brake, which will automatically put the transmission into neutral, and activating a rocker switch in the cab. Switches in the cab will also allow for water, foam, or CAFS if equipped, and activate the appropriate system to preset parameters. The engagement will provide simple two-step operation, enhance reliability, and completely eliminate gear clash. The shift will include the indicator lights as mandated by NFPA. A direct override switch will be located behind a door in the lower pump operator's panel. The switch will automatically disengage when the door is closed.

As the parking brake is applied, the pump panel throttle will be activated and deactivate the chassis foot throttle for stationary operation.

Pump and roll operation will be available by releasing the parking brake with the pump in the pumping mode. Releasing the parking brake will activate the chassis foot throttle, and deactivate the pump panel throttle. To protect from accidental pump overheating, the pump will automatically disengage when the truck transmission shifts into second gear.

**TRANSMISSION LOCK UP**

Transmission lock up is not required as transmission will automatically shift to neutral as soon as the parking brake is set.

**AUXILIARY COOLING SYSTEM**

A supplementary heat exchange cooling system will be provided to allow the use of water from the discharge side of the pump for cooling the engine water. A water-to-coolant heat exchanger will be used.

**INTAKE RELIEF VALVE**

An Akron relief valve will be installed on the suction side of the pump preset at 150 psig.

Relief valve will have a working range of 75 psig to 200 psig.

Outlet will terminate below the frame rails with a 2.50" National Standard hose thread adapter and will have a "do not cap" warning tag.

Control will be located behind an access door at the right (passenger's) side pump panel.

**PRESSURE CONTROLLER**

A Pierce Pressure Governor will be provided. An electric pressure governor will be provided which is capable of automatically maintaining a desired preset discharge pressure in the water pump. When operating in the pressure control mode, the system will automatically maintain the discharge pressure set by the operator (within the discharge capabilities of the pump and water supply) regardless of flow, within the discharge capacities of the water pump and water supply.
A pressure transducer will be installed in the water discharge of the pump. The transducer continuously monitors pump pressure sending a signal to the Electronic Control Module (ECM).

The governor can be used in two (2) modes of operation, RPM mode and pressure modes.

In the RPM mode, the governor can be activated after vehicle parking brake has been set. When in this mode, the governor will maintain the set engine speed, regardless of engine load (within engine operation capabilities).

In the pressure mode, the governor system can only operate after the fire pump has been engaged and the vehicle parking brake has been set. When in the pressure mode, the pressure controller monitors the pump pressure and varies engine speed to maintain a precise pump pressure. The pressure controller will use a quicker reacting J1939 database for engine control.

A preset feature allows a predetermined pressure or rpm to be set.

A pump cavitation protection feature is also provided which will return the engine to idle should the pump cavitate. Cavitation is sensed by the combination of pump pressure below 30 psi and engine speed above 2000 rpm for more than five (5) seconds.

The throttle will be a vernier style control, with a large control knob for use with a gloved hand. A throttle ready light will be provided adjacent to the throttle control. A large 0.75" RPM display will be provided to be visible at a glance.

Check engine, and stop engine indicator lights will be provided for easy viewing.

Large 0.75" push buttons will be provided for menu, mode, preset, and silence selections.

The water tank level indicator will be incorporated in the pressure governor.

A fuel level indicator will be incorporated in the pressure controller.

A pump hour meter will be incorporated in the pressure controller.

The pressure controller will incorporate monitoring for engine temperature, oil pressure, fuel level alarm, and voltage. Pump monitoring will include, pump gearcase temperature, error codes, diagnostic data, pump service reminders, and time stamped data logging, to allow for fast accurate trouble shooting. It will also notify the driver/engineer of any problems with the engine and the apparatus. Complete understandable messages will be provided in a 20-character display, providing for fewer abbreviations in the messages. An automatic dim feature will be included for night operations.

The pressure controller will include a USB port for easy software upgrades, which can be downloaded through a USB memory stick, eliminating the need for a laptop for software installations.

A complete interactive manual will be provided with the pressure controller.
PRIMING PUMP
The priming pump will be a Trident Emergency Products compressed air powered, high efficiency, multistage venturi based AirPrime System, conforming to standards outlined in the current edition of NFPA 1901.

All wetted metallic parts of the priming system are to be of brass and stainless steel construction.

One (1) priming control will open the priming valve and start the pump primer.

PUMP MANUALS
There will be a total of two (2) pump manuals provided by the pump manufacturer and furnished with the apparatus. The manuals will be provided by the pump manufacturer in the form of two (2) CDs. Each manual will cover pump operation, maintenance, and parts.

PLUMBING
All inlet and outlet plumbing, 3.00" and smaller, will be plumbed with either stainless steel pipe or synthetic rubber hose reinforced with high-tensile polyester braid. Small diameter secondary plumbing such as drain lines will be stainless steel, brass or hose.

Where vibration or chassis flexing may damage or loosen piping or where a coupling is required for servicing, the piping will be equipped with victaulic or rubber couplings.

Plumbing manifold bodies will be ductile cast iron or stainless steel.

All lines will drain through a master drain valve or will be equipped with individual drain valves. All individual drain lines for discharges will be extended with a hose to drain below the chassis frame.

All water carrying gauge lines will be of flexible polypropylene tubing.

MAIN PUMP INLETS
A 6.00" pump manifold inlet will be provided on each side of the vehicle. The suction inlets will include removable die cast zinc screens that are designed to provide cathodic protection for the pump, thus reducing corrosion in the pump.

Main pump inlets will not be located on the main operator's panel and will maintain a low connection height by terminating below the top of the chassis frame rail.

MAIN PUMP INLET CAP
The main pump inlets will have National Standard Threads with a long handle chrome cap.

The cap will be the Pierce VLH, which incorporates an exclusive thread design to automatically relieve stored pressure in the line when disconnected.

INLET BALL VALVES
Two (2) butterfly valves Task Force Tips ball intake valve will be installed on the both the driver's side and the passenger's side main pump inlets main pump inlets. The valves will be located outside the pump panel. The intake valve will have a 4.00" FNST connection by 6.00" female NST swivel.
Valves will be manually actuated, with a top handwheel.

**VALVES**
All ball valves will be Akron® Brass. The Akron valves will be the 8000 series heavy-duty style with a stainless steel ball and a simple two-seat design. No lubrication or regular maintenance is required on the valve.

Valves will have a **ten (10) year** warranty.

**LEFT SIDE INLET**
There will be one (1) auxiliary inlet with a 2.50" valve at the left side pump panel, terminating with a 2.50" (F) National Standard hose thread adapter.

The auxiliary inlet will be provided with a strainer, chrome swivel and plug.

**RIGHT SIDE INLET**
There will be one (1) auxiliary inlet with a 2.50" valve at the right side pump panel, terminating with a 2.50" (F) National Standard hose thread adapter.

The auxiliary inlet will be provided with a strainer, chrome swivel and plug.

The location of the valve for the two (2) inlets will be recessed behind the pump panel.

**ANODE, INLET**
A pair of sacrificial zinc anodes will be provided in the water pump inlets to protect the pump from corrosion.

**INLET CONTROL**
The side auxiliary inlet(s) will incorporate a quarter-turn ball valve with the control located at the inlet valve. The valve operating mechanism will indicate the position of the valve.

**FRONT INLET**
A 4.00" inlet front inlet with die cast zinc screens will be provided using 5.00" welded black iron pipe and a 5.00" butterfly valve. Only radiused elbows will be used in the piping, no mitered joints.

Drains will be furnished in all the low points of piping and have .75" valves with swing handle.

The front suction will be located inside a hose tray on the passenger side of the bumper extension.

A bleeder valve will be located at the threaded connection.

**FRONT INLET CONTROL**
The front inlet will be gated with the control located at the pump operator's panel. The valve operating mechanism will indicate the position of the valve or an indicator will be provided to show when the valve is closed.
There will be an electric valve controller provided. The control will be momentary to allow the valve to be gated for ease of operation. Indicator lights will be provided to show if the valve is open or closed.

**INTAKE RELIEF VALVE**
An intake relief valve, preset at 150 psig, will be installed on the inlet side of the valve.

Relief valve will have a working range of 75 psig to 250 psig.

Outlet will terminate below the frame rails.

**FRONT INLET CAP**
The front inlet will have National Standard hose threads with a long handle cap.

The cap will incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).

The cap will be fabricated from brass material.

The piping for the front suction will terminate with a chrome plated National Standard hose thread adapter, within the front hose tray.

**INLET BLEEDER VALVE**
A 0.75" bleeder valve will be provided for each side gated inlet. The valves will be located behind the panel with a swing style handle control extended to the outside of the panel. The handles will be chrome plated and provide a visual indication of valve position. The swing handle will provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage. The water discharged by the bleeders will be routed below the chassis frame rails.

**TANK TO PUMP**
The booster tank will be connected to the intake side of the pump with heavy duty 4.00" piping and a quarter turn 3.00" full flow line valve with the control located at the operator's panel. A rubber coupling will be included in this line to prevent damage from vibration or chassis flexing.

A check valve will be provided in the tank to pump supply line to prevent the possibility of "back filling" the water tank.

**TANK REFILL**
A 1.50" combination tank refill and pump re-circulation line will be provided, using a quarter-turn full flow ball valve controlled from the pump operator's panel.

**LEFT SIDE DISCHARGE OUTLETS**
There will be two (2) discharges with a 2.50" valves on the left side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter. Discharges will be located below the cab, and will be no higher than the top of the chassis frame rail. Discharges will not be located on the pump operator's panel. Lever controls will be provided at the valve.
RIGHT SIDE DISCHARGE OUTLETS
There will be one (1) discharge outlet with a 2.50" valve on the right side of the apparatus, terminating with a male 2.50" National Standard hose thread adapter. The discharge will be located below the crew cab, and will be no higher than the top of the chassis frame rail.

There will be an Akron® 9325 Navigator Pro electric valve controller provided at the pump panel. The controller unit will be of true position feedback design, requiring no clutches in the motor or current limiting. The controller will be completely sealed with two (2) button open and close valve position capability and a full color LCD display with backlight. In addition to valve position, each controller will include a pressure display.

LARGE DIAMETER DISCHARGE OUTLET
There will be a 4.00" discharge outlet with a 4.00" Akron valve body installed on the right side of the apparatus, terminating with a 4.00" (M) National Standard hose thread. The discharge will be located below the crew cab, and will be no higher than the top of the chassis frame rail.

There will be an Akron 9325 Navigator Pro electric valve controller provided at the pump panel. The controller unit will be of true position feedback design, requiring no clutches in the motor or current limiting. The controller will be completely sealed with two (2) button open and close valve position capability and a full color LCD display with backlight. In addition to valve position, each controller will include a pressure display.

FRONT DISCHARGE OUTLET
There will be one (1) 1.50" discharge outlet piped to the front of the apparatus and located in the center bumper tray.

Plumbing will consist of 2.00" piping and flexible hose with a 2.00" ball valve with control at the pump operator's panel. A fabricated weldment made of stainless steel pipe will be used in the plumbing where appropriate. The piping will terminate with a 1.50" NST chrome adapter.

There will be Class 1 automatic drains provided at all low points of the piping.

REAR DISCHARGE OUTLET
There will be one (1) discharge outlet piped to the rear of the hose bed on passenger's side, installed so proper clearance is provided for spanner wrenches or adapters. Plumbing will consist of 2.50" piping along with a 2.50" full flow ball valve with the control from the pump operator's panel. Discharge will terminate with 2.50" NST thread. Discharge piping will be schedule 10 304L welded or formed stainless steel and routed through the water tank.

DISCHARGE CAPS
Chrome plated, rocker lug, caps with chains will be furnished for all side discharge outlets.

The caps will be the Pierce VLH, which incorporates an exclusive thread design to automatically relieve stored pressure in the line when disconnected.
OUTLET BLEEDERS
A 0.75" bleeder valve will be provided for each outlet 1.50" or larger. Automatic drain valves are acceptable with some outlets if deemed appropriate with the application.

The valves will be located behind the panel with a swing style handle control extended to the outside of the side pump panel. The handles will be chrome plated and provide a visual indication of valve position. The swing handle will provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage. Bleeders will be located at the bottom of the pump panel. They will be properly labeled identifying the discharge they are plumbed in to. The water discharged by the bleeders will be routed below the chassis frame rails.

REAR OUTLET ELBOWS
The 2.50" discharge outlets located at the rear of the apparatus will be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 45 degree elbow.

The elbow will be Pierce VLH, which incorporates an exclusive thread design to automatically relieve stored pressure in the line when disconnected.

LARGE DIAMETER OUTLET CAP
The large diameter outlet will have a National Standard hose thread adapter with a 4.00" rocker lug chrome plated cap and chain.

The cap will be the Pierce VLH, which incorporates a patent pending thread design to automatically relieve stored pressure in the line when disconnected.

ADAPTERS
There will be one (1) adapter with 4.00" FNST x 2.50" MNST threads installed on on the PS 4" discharge.

DISCHARGE OUTLET CONTROLS
The discharge outlets will incorporate a quarter-turn ball valve with the control located at the pump operator's panel. The valve operating mechanism will indicate the position of the valve or an indicator will be provided to show when the valve is closed.

The passenger side discharges will be controlled by an Akron 9325 Navigator Pro electric valve controllers with the manual override located on the passenger side pump panel. The controller unit will be of true position feedback design, requiring no clutches in the motor or current limiting. The controller will be completely sealed with two (2) button open and close valve position capability and a full color LCD display with backlight. In addition to valve position, each controller will include a pressure display.

All other outlets will have manual swing handles that operate in a vertical up and down motion. These handles will be able to lock in place to prevent valve creep under pressure.
DELUGE RISER
A 3.00" deluge riser will be installed above the pump in such a manner that a monitor can be mounted and used effectively. Piping will be installed securely so no movement develops when the line is charged. The riser will be gated and controlled at the pump operator's panel. A 2.50" valve will be provided. The deluge riser will allow flow for 1000 GPM.

TELESCOPIC PIPING
The deluge riser piping will include a 18.00" Task Force Model XG18 Extend-A-Gun extension.

This extension will be telescopic to allow the deluge gun to be raised 18.00" increasing the range of operation.

A triangular bracing structure will be installed to support the piping. Aluminum tread plate will be placed on the forward side of the bracing structure.

A position sensor will be provided on the telescopic piping that will activate the "do not move vehicle" light inside the cab when the monitor is in the raised position.

MONITOR
A Task Force Crossfire XFC-52 monitor package will be furnished and properly installed on the deluge riser. The monitor will include a M-R nozzle, 10" stream straightener and quad stacked tips. The portable base unit with folding legs and a safety valve will have (2) 2.50" female NST inlets. The monitor will be painted as provided by monitor manufacturer.

The deluge riser will have male National Pipe Threads for mounting the monitor.

DEADLAY HOSE BEDS
Two (2) deadlays without plumbing, will be provided above the pump compartment capable of carrying 250' of 1.75" hose per tray.

The deadlays will be side by side and mounted low.

Two (2) removable trays will be provided for the deadlay hosebed. The deadlay trays will be constructed of black poly to provide a lightweight sturdy tray. Two (2) hand holes will be in the floor and additional hand holes will be provided in the sides for easy removal and installation from the compartment. The floor of the trays will be perforated to allow for drainage and hose drying. Trays will be held in place by a mechanical spring loaded stainless steel latch that automatically deploys upon loading the tray to hold the trays in place during transit.

Two (2) 2.50" hose outlets will be provided, located below the deadlay hose bed deck one (1) on the passenger's side and one (1) on the driver's side. The outlets will be plumbed with 2.50" i.d. schedule 10 304L welded or formed stainless steel pipe and gated with a 2.50" quarter turn ball valve. Threaded pipe will not be acceptable.

The outlet controls will be at the pump operator's panel.
**DEADLAY HOSE BED**
One (1) deadlay without plumbing, will be provided above the pump compartment capable of carrying 250' of 2.5" hose.

The deadlay will be located directly above the lower 1.5" crosslays.

A removable tray will be provided for the deadlay hosebed. The deadlay tray will be constructed of black poly to provide a lightweight sturdy tray. Two (2) hand holes will be in the floor and additional hand holes will be provided in the sides for easy removal and installation from the compartment. The floor of the trays will be perforated to allow for drainage and hose drying. Tray will be held in place by a mechanical spring loaded stainless steel latch that automatically deploys upon loading the tray to hold the trays in place during transit.

**CROSSLAY/DEADLAY HOSE RESTRAINT**
A black 1.00" nylon webbing design with 2.00" box pattern will be provided across each end of two (2) crosslay/deadlay(s) to secure the hose during travel. The webbing will be permanently attached at the front of the crosslay/deadlay bed. Two (2) vertical metal bars the height of the crosslay/deadlay bed will hook onto footman loops at the top of the bed and 1.00" web straps will loop through footman loops located at the bottom of the crosslay/deadlay bed. The straps will attach to the bottom of the bar with a 1.00" cam buckle fastener.

**BOOSTER HOSE REEL**
A Hannay electric rewind booster hose reel will be installed over the pump in a recessed open compartment on the right side of the apparatus. The reel will be fabricated of aluminum and highly polished end discs.

A polished stainless steel roller and guide assembly will be mounted on the reel side of the apparatus.

Discharge control will be provided at the pump operator’s panel. Plumbing to the reel will consist of 1.50" Aeroquip hose and a 1.50" valve.

Reel motor will be protected from overload with a 50 amp automatic reset circuit breaker.

One (1) foot actuated, stirrup type, electric rewind control (switch) will be installed below the running board.

Booster hose, 1.00" diameter and 150 feet, with chrome plated Barway, or equal couplings will be provided.

Working pressure of the booster hose will be a minimum of 800 psi.

Capacity of the hose reel will be 200 feet of 1.00" booster hose.
HOSEREEL ACCESS
A quantity of one (1) cutout(s) will be provided in the in the side sheet of the pumphouse module for the hose reel(s). These cutout(s) will allow access to the hose and provide a window to view the reel. Stainless steel rollers with nylon bushings will be mounted horizontally and vertically around the cutout.

HUSKY 3 FOAM PROPORTIONER
A Pierce Husky® 3 foam proportioning system will be provided. The Husky 3 is an on demand, automatic proportioning, single point, direct injection system suitable for all types of Class A and B foam concentrates, including the high viscosity (6000 cps), alcohol resistant Class B foams. Operation will be based on direct measurement of water flow, and remain consistent within the specified flows and pressures. The system will automatically proportion foam solution at rates from .1 percent to 3.0 percent regardless of variations in water pressure and flow, up to the maximum rated capacity of the foam concentrate pump.

The design of the system will allow operation from draft, hydrant, or relay operation.

SYSTEM CAPACITY
The system will have the ability to deliver the following minimum foam solution flow rates at accuracies that meet or exceed NFPA requirements at a pump rating of 150 psi.

100 gpm @ 3 percent
300 gpm @ 1 percent
600 gpm @ 0.5 percent

Class A foam setting in .1 percent increments from .1 percent to 1 percent. Typical settings of 1 percent, .5 percent and .3 percent (maximum capacity shall be limited to the plumbing and water pump capacity).

CONTROL SYSTEM
The system will be equipped with a digital electronic control display located on the pump operators panel. Push button controls will be integrated into the panel to turn the system on/off, control the foam percentage, and to set the operation modes.

The percent of injection will have a preset. This preset can be changed at the fire department as desired. The percent of injection will be able to be easily changed at the scene to adjust to changing demands.

Three (3) .50 tall LEDs will display the foam percentage in numeric characters. Three (3) indicator LEDs will also be included: one (1) green, one (1) red, and one (1) yellow. The LEDs will indicate various system operation or error states.

The indications will be:
Solid Green - System On
Solid Red - Valve Position Error

Solid Yellow - Priming System

Flashing Green - Injecting Foam

Flashing Red - Low Tank Level

Flashing Yellow - Refilling Tank

The control display will house a microprocessor, which receives input from the systems water flow meter while also monitoring the position of the foam concentrate pump. The microprocessor will compare the values of the water flow versus the position/rate of the foam pump, to ensure the proportion rate is accurate. One (1) check valve will be installed in the plumbing to prevent foam from contaminating the water pump.

**HYDRAULIC DRIVE SYSTEM**

The foam concentrate pump will be powered by an electric over hydraulic drive system. The hydraulic system and motor will be integrated into one unit.

**FOAM CONCENTRATE PUMP**

The foam concentrate pump will be of positive displacement, self-priming; linear actuated design, driven by the hydraulic system. The pump will be constructed of brass body; chrome plated stainless steel shaft, with a stainless steel piston. In order to increase longevity of the pump, no aluminum will be present in its construction.

A relief system will be provided which is designed to protect the drive system components and prevent over pressuring the foam concentrate pump.

The foam concentrate pump will have minimum capacity for 3 gpm with all types of foam concentrates with a viscosity at or below 6000 cps including protein, fluoroprotein, AFFF, FFP, or AR-AFFF. The system will deliver only the amount of foam concentrate flow required, without recirculating foam back to the storage tank. Recirculating foam concentrate back to the storage tank can cause agitation and premature foaming of the concentrate, which can result in system failure. The foam concentrate pump will be self-priming and have the ability to draw foam concentrate from external supplies such as drums or pails.

**EXTERNAL FOAM CONCENTRATE CONNECTION**

An external foam pick-up will be provided to enable use of a foam agent that is not stored on the vehicle. The external foam pick-up will be designed to allow continued operation after the on-board foam tank is empty, or the use of foam different than the foam in the foam tank.

**PANEL MOUNTED EXTERNAL PICK-UP CONNECTION / VALVE**

A bronze three (3)-way valve will be provided. The unit will be mounted to the pump panel. The valve unit will function as the foam system tank to pump valve and external suction valve. The external foam pick-up will be one (1) .75" male connection GHT (garden hose thread) with a cap.
**PICK-UP HOSE**
A .75" flexible hose with an end for insertion into foam containers will be provided. The hose will be supplied with a .75" female swivel GHT (garden hose thread) swivel connector. The hose will be shipped loose.

**DISCHARGES**
The foam system will be plumbed to the lower front crosslay, center of front bumper, lower center crosslay and right rear outlet.

**SYSTEM ELECTRICAL LOAD**
The maximum current draw of the electric motor and system will be no more than 55 amperes at 12 VDC.

**SINGLE FOAM TANK REFILL**
The foam system's proportioning pump will be used to fill the foam tank. This will allow use of the auxiliary foam pick-up to pump the foam from pails or a drum on the ground into the foam tank. A foam shut-off switch will be installed in the fill dome of the tank to shut the system down when the tank is full. The fill operation will be controlled by a mode in the foam system controller. While the proportioner pump is filling the tank, the controller will display a flashing yellow LED to indicate that the tank is filling. When the tank is full, as determined by the float switch in the tank dome, the pump will stop and the controller will shut the yellow LED off. If it attempted to use tank fill and the refill valve and suction valve are in the wrong position(s), then a red LED will illuminate to indicate the improper valve position(s). When the valves are positioned properly, then filling will commence.

**FOAM CELL**
The foam cell will be an integral portion of the polypropylene water tank. The cell will have a capacity of 30 gallons of foam with the intended use of Class A foam. The brand of foam stored in this tank will be to be determined. The foam cell will not reduce the capacity of the water tank. The foam cell will have a screen in the fill dome and a breather in the lid.

**FOAM TANK DRAIN**
A system of 1.00" foam tank drains will be provided, integrated into the foam systems strainer and tank to foam pump valve management system. The tank to pump hoses running from the tank(s) to the panel mounted strainer will 1.00" diameter. The foam system controller will have a mode that allows for a given foam valve to be opened at will. Flow of foam from the tank valve to the strainer will be usable as a tank drain mode.

An adaptor will be supplied, that allows the 1.00" foam intake screen to assembly to be used as a drain outlet. The standard supplied 1.00" foam pick up hose will be attached to the screen assembly by way of the adapter. The drain mode will allow the operator to open and close the tank valve as required from the control head, to drain foam and re-fill foam containers through the connected hose, without foam spillage beneath the vehicle.
**PUMP CONTROL PANELS (LEFT SIDE CONTROL)**

Pump controls and gauges will be located midship at the left (driver's) side of the apparatus and properly identified.

The main pump operator's control panel will be completely enclosed and located in the forward section of the body compartment, to protect against road debris and weather elements. The pump operator's panels will be no more than 31.00" wide, and made in four (4) sections with the center section easily removable with simple hand tools. For the safety of the pump operator, there will be no discharge outlets or pump inlets located on the main pump operators panel.

Layout of the pump control panel will be ergonomically efficient and systematically organized. The upper section will contain the master gauges. This section will be angled down for easy visibility. The center section will contain the pump controls aligned in two horizontal rows. The pressure control device, engine monitoring gauges, electrical switches, and foam controls (if applicable) will be located on or adjacent to the center panel, on the side walls for easy operation and visibility. The lower section will contain the outlet drains.

Manual controls will be easy moving 8" long lever style controls that operate in a vertical, up and down swing motion. These handles will have a 2.25" diameter knob and be able to lock in place to prevent valve creep under any pressure. Bright finish bezels will encompass the opening, be securely mounted to the pump operator's panel, and will incorporate the discharge gauge bezel. Bezels will be bolted to the panel for easy removal and gauge service. The driver's side discharges will be controlled directly at the valve. There will be no push-pull style control handles.

Identification tags for the discharge controls will be recessed within the same bezel. The discharge identification tags will be color coded, with each discharge having its own unique color.

All remaining identification tags will be mounted on the pump panel in chrome-plated bezels.

All discharge outlets will be color coded and labeled to correspond with the discharge identification tag.

The pump panels for the midship discharge and intake ports will be located ahead of the body compartments with no side discharge or intake higher than the frame rail. The pump panels will be easily removable with simple hand tools.

A recessed cargo area will be provided at the front of the body, ahead of the water tank above the plumbing.

**PUMP PANEL CONFIGURATION**

The pump panel configuration will be arranged and installed in an organized manner that will provide user-friendly operation.

**PUMP AND GAUGE PANEL**

The pump operator's panel and gauge panels will be constructed of stainless steel with a brushed finish.
The side control panels will be constructed of stainless steel with a brushed finish for durability and ease of maintenance.

**PUMP AND PLUMBING ACCESS**
Simple access to the plumbing will be provided through the front of the body area by raising the cab for complete plumbing service and valve maintenance. Access to valves will not require removal of operator panels or pump panels. Access for rebuilding of the pump will not require removal of more than the tank to pump line and a single discharge line. This access will allow for fast, easy valve or pump rebuilding, making for reduced out of service times. Steps will be provided for access to the top of the pump.

Access to the pump will be provided by raising the cab. The pump will be positioned such that all maintenance and overhaul work can be performed above the frame and under the tilted cab. The service and overhaul work on the pump will not require the removal of operator panels or pump panels. Complete pump casing and gear case removal will require no more than removal of the intake and discharge manifolds, driveline, coolers and a single discharge line. The pump case and gear case will be able to be removed by lifting upward without interference from piping and be removable in less than 3 hours.

**PUMP COMPARTMENT LIGHT**
There will be one (1) Whelen®, Model 3SC0CDEC, 3.00" white 12 volt DC LED light(s) with Whelen, Model 3FLANGEC, flange(s) installed in the plumbing area.

The light(s) will be activated by a toggle switch located in the pump compartment area.

Engine monitoring graduated LED indicators will be incorporated with the pressure controller.

**VACUUM AND PRESSURE GAUGES**
The pump vacuum and pressure gauges will be liquid filled and manufactured by Class 1 Incorporated ©.

The gauges will be a minimum of 4.00" in diameter and will have white faces with black lettering, with a pressure range of 30.00"-0-600#.

Gauge construction will include a Zytel nylon case with adhesive mounting gasket and threaded retaining nut.

The pump pressure and vacuum gauges will be installed adjacent to each other at the pump operator's control panel.

Test port connections will be provided at the pump operator's panel. One will be connected to the intake side of the pump, and the other to the discharge manifold of the pump. They will have 0.25 in. standard pipe thread connections and non-corrosive polished stainless steel or brass plugs. They will be marked with a label.

This gauge will include a 10 year warranty against leakage, pointer defect, and defective bourdon tube.
PRESSURE GAUGES
The individual "line" pressure gauges for the discharges will be Class 1© interlube filled.

They will be a minimum of 2.00" in diameter and have white faces with black lettering.

Gauge construction will include a Zytel nylon case with adhesive mounting gasket and threaded retaining nut.

Gauges will have a pressure range of 30"-0-400#.

The individual pressure gauge will be installed as close to the outlet control as practical.

This gauge will include a 10 year warranty against leakage, pointer defect, and defective bourdon tube.

WATER LEVEL GAUGE
An electric water level gauge will be incorporated in the pressure controller that registers water level by means of nine (9) LEDs. They will be at 1/8 level increments with a tank empty LED. The LEDs will be a bright type that is readable in sunlight, and have a full 180-degree of clear viewing.

To further alert the pump operator, the gauge will have a warning flash when the tank volume is less than 25 percent, and will have down chasing LEDs when the tank is almost empty.

The level measurement will be ascertained by sensing the head pressure of the fluid in the tank or cell.

MINI SLAVE UNIT
An electric water level gauge will be provided in the cab that registers water level by means of five (5) LEDs. They will be at 1/4 level increments with a tank empty LED. The LEDs will be a bright type that is readable in sunlight, and have a full 180-degree of clear viewing.

The water level gauge in the cab will be activated when the pump is in gear.

WATER LEVEL GAUGE, ADDITIONAL
An additional water level gauge will be provided. An Ernst sight tube water level indicator with a floating red ball will be mounted on the gauge panel with an unrestricted view for the operator.

FOAM LEVEL GAUGE
A Pierce electric foam level gauge will be provided on the operator's panel, that registers foam level by means of nine (9) LEDs. There will also be a mini foam level gauge with five (5) LEDs in the cab. They will be at 1/8 level increments with a tank empty LED. The LEDs will be a bright type that is readable in sunlight, and have a full 180 degree of clear viewing. The gauge will match the water level gauge in the pressure controller.

To further alert the pump operator, will have a warning flash when the tank volume is less than 25 percent, and will have Down Chasing LEDs when the tank is almost empty.

The level measurement will be ascertained by sensing the head pressure of the fluid in the tank or cell. This method provides accuracy with an array of multi-viscosity foams.
The foam level gauge in the cab will be activated by pump is in gear.

**SIDE CONTROL PUMP OPERATOR’S/PUMP PANEL LIGHTING**
Illumination will be provided for controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus and the equipment provided on it. External illumination will be a minimum of five (5) foot-candles on the face of the device. Internal illumination will be a minimum of four (4) footlamberts.

The pump panels will be illuminated by a light on each side of the back of the cab.

The pump operator's panel will utilize strip lighting at the forward doorframe and an overhead light.

**AIR HORN SYSTEM**
Two (2) Grover, Stutter Tone, air horns will be recessed in the front bumper. The horn system will be piped to the air brake system wet tank utilizing 0.38" tubing. A pressure protection valve will be installed in-line to prevent loss of air in the air brake system.

**Air Horn Location**
The air horns will be located on each side of the bumper, towards the outside.

**AIR HORN CONTROL**
The air horns will be actuated by a chrome push button located on the officer's side of the engine tunnel and by the horn button in the steering wheel. The driver will have the option to control the air horns or the chassis horns from the horn button by means of a selector switch located on the instrument panel.

**ELECTRONIC SIREN**
A Whelen®, Model 295SLSA1, electronic siren with noise canceling microphone will be provided.

This siren to be active when the battery switch is on and that emergency master switch is on.

Electronic siren head will be recessed in the driver side inside switch panel.

The electronic siren will be controlled on the siren head only. No horn button or foot switches will be provided.

**SPEAKER**
There will be one (1) speaker provided. Each speaker will be a Whelen®, Model SA315P, black nylon composite, 100-watt, with through bumper mounting brackets and polished stainless steel grille. Each speaker will be connected to the siren amplifier.

The speaker(s) will be recessed in the center of the front bumper.

**AUXILIARY MECHANICAL SIREN**
A Federal Q2B® siren will be furnished. A siren brake button will be installed on the switch panel.

The control solenoid will be powered up after the emergency master switch is activated.
The mechanical siren will be recessed in the front bumper on the left side. The siren will be properly supported using the bumper framework.

**MECHANICAL SIREN CONTROL**
The mechanical siren will be actuated by a push button located on the officer's side instrument panel and by a foot switch on the driver's side.

A second siren brake switch will be installed on the officer side engine tunnel area. The switch will be a chrome push button style.

**FRONT ZONE UPPER WARNING LIGHTS**
There will be one (1) 72.00" Whelen Freedom IV LED lightbar mounted on the cab roof.

The lightbar will include the following:

- One (1) red flashing LED module in the driver's side end position.
- One (1) red flashing LED module in the driver's side front corner position.
- One (1) red flashing LED module in the driver's side first front position.
- One (1) red flashing LED module in the driver's side second front position.
- One (1) white flashing LED module in the driver's side third front position.
- One (1) red flashing LED module in the driver's side fourth front position.
- One (1) red flashing LED module in the driver's side fifth front position.
- One (1) 795 LED traffic light controller sent to national standard high priority in the center positions.
- One (1) red flashing LED module in the passenger's side fifth front position.
- One (1) red flashing LED module in the passenger's side fourth front position.
- One (1) white flashing LED module in the passenger's side third front position.
- One (1) red flashing LED module in the passenger's side second front position.
- One (1) red flashing LED module in the passenger's side first front position.
- One (1) red flashing LED module in the passenger's side front corner position.
- One (1) red flashing LED module in the passenger's side end position.

There will be clear lenses.

The following switches may be installed in the cab on the switch panel to control the lightbar:

- a switch to control the flashing LED modules.
- the traffic light controller with the roof light switch without emergency master control.
- [Momentary Opticom Activation].

The two (2) white flashing LED modules and the traffic light controller will be disabled when the parking brake is applied.

The eight (8) red flashing LED modules in the front positions may be load managed when the parking brake is applied.
CAB FACE WARNING LIGHTS
There will be four (4) Whelen®, Model M6*C, LED flashing warning lights installed on the cab face, above the headlights, mounted in a common bezel.

- The driver's side front outside warning light to be red
- The driver's side front inside warning light to be red
- The passenger's side front inside warning light to be red
- The passenger's side front outside warning light to be red

All four (4) lights will include a clear lens.

There will be a switch located in the cab, on the switch panel, to control the four (4) lights.

The inside lights may be load managed if colored or disabled if white, when the parking brake is set.

HEADLIGHT FLASHER
The high beam headlights will flash alternately between the left and right side.

There will be a switch installed in the cab on the switch panel to control the high beam flash. This switch will be live when the battery switch and the emergency master switches are on.

The flashing will automatically cancel when the hi-beam headlight switch is activated or when the parking brake is set.

SIDE ZONE LOWER LIGHTING
There will be six (6) Whelen®, Model M6*C, LED flashing warning lights with Model 6EFLANGE, chrome flanges located in the following positions:

- Two (2) lights, one (1) each side on the bumper extension
  - The side front lights to be red
- Two (2) lights, one (1) each side of cab rearward of crew cab doors
  - The side middle lights to be red
- Two (2) lights, one (1) each side above rear wheels
  - The side rear lights to be red

All six (6) lights will include a clear lens.

There will be a switch located in the cab on the switch panel to control the lights.

SIDE WARNING LIGHTS
There will be two (2) Whelen, Model M9* LED flashing warning light(s) with bezel(s) provided on the upper forward portion of the hatch compartments, on both sides of the body.

The color of the lights will be red.

All of these lights will include a lens color that is the same as the LED's.
These lights will be activated with the rear upper warning switch.

**WARNING LIGHTS (SIDE)**
There will be three (3) Whelen LIN3 Super LED lights, Model RS*02ZCR, provided and located in the body rub rails located under the P1, D1, P3 and D3 compartments.

The color of each light will be red LED with clear lens.

Each light will be provided with a chrome plated ABS flange.

The light(s) will be activated with the side warning switch.

**REAR ZONE LOWER LIGHTING**
There shall be two (2) Whelen®, Model M6*C, LED flashing warning lights located at the rear of the apparatus.

- The driver's side rear light to be red
- The passenger's side rear light to be red

Both lights will include a lens that is clear.

There will be a switch located in the cab on the switch panel to control the lights.

**WARNING LIGHTS (REAR AND SIDE UPPER ZONES)**
Four (4) Whelen, model M9* LED flashing warning lights will be provided at the rear of the apparatus.

The side rear upper light(s) on the driver's side to be red.

The rear upper light(s) on the driver's side to be red.

The rear upper light(s) on the passenger's side to be red.

The side rear upper light(s) on the passenger's side to be red.

These lights will include a lens that is the same color as the LED's.

There will be a switch located in the cab on the switch panel to control the lights.

The rear warning lights will be mounted on stainless steel brackets with all wiring totally enclosed. These brackets will also support the clearance/marker lights.

**TRAFFIC DIRECTING LIGHT**
There will be one (1) Whelen®, Model TAL65, 36.01" long x 2.84" high x 2.24" deep, amber LED traffic directing light installed at the rear of the apparatus.

The Whelen, Model TACTLD1, control head will be included with this installation.

The auxiliary warning mode will be activated with the control head only.
This traffic directing light will be recessed with a treadplate trim plate at the rear of the apparatus as high as practical.

The traffic directing light control head will be located in the driver side overhead switch panel in the right panel position.

**INVERTER**
There will be a Xantrex Model 806-1802, inverter/charger furnished and properly wired into the chassis battery system.

This inverter has been rated at 1350 watts to meet the NFPA testing requirements.

The inverter will provide 120 volts AC power when the shoreline inlet is not connected and the chassis engine is running.

It will be mounted above the ems cabinet to match Job#26890 and have adequate ventilation. The master switch will be located in the cab.

**120 VOLT RECEPTACLE**
There will be one (1), 20 amp 120 volt AC three (3) wire straight blade duplex receptacle(s) with interior plate(s) installed near the captain's area in the cab. The NEMA configuration for the receptacles will be 5-20R.

The receptacle(s) will be powered from the inverter.

There will be a label installed near the receptacle(s) that state the following:

- Line Voltage
- Current Rating (amps)
- Phase
- Frequency
- Power Source

**LOOSE EQUIPMENT**
The following equipment will be furnished with the completed unit:

- One (1) bag of chrome, stainless steel, or cadmium plated screws, nuts, bolts and washers, as used in the construction of the unit.

**NFPA REQUIRED LOOSE EQUIPMENT PROVIDED BY FIRE DEPARTMENT**
The following loose equipment as outlined in NFPA 1901, 2009 edition, section 5.8.2 and 5.8.3 will be provided by the fire department. All loose equipment will be installed on the apparatus before placed in emergency service, unless the fire department waives NFPA section 4.21.

- 800 ft (60 m) of 2.50" (65 mm) or larger fire hose.
- 400 ft (120 m) of 1.50" (38 mm), 1.75" (45 mm), or 2.00" (52 mm) fire hose.
- One (1) handline nozzle, 200 gpm (750 L/min) minimum.
• Two (2) handline nozzles, 95 gpm (360 L/min) minimum.
• One (1) playpipe with shutoff and 1.00" (25 mm), 1.125" (29 mm), and 1.25" (32 mm) tips.
• One (1) SCBA complying with NFPA 1981, *Standard on Open-Circuit Self-Contained Breathing Apparatus for Fire and Emergency Services*, for each assigned seating position, but not fewer than four (4), mounted in brackets fastened to the apparatus or stored in containers supplied by the SCBA manufacturer.
• One (1) spare SCBA cylinder for each SCBA carried, each mounted in a bracket fastened to the apparatus or stored in a specially designed storage space(s).
• One (1) first aid kit.
• Four (4) combination spanner wrenches mounted in bracket(s) fastened to the apparatus.
• Two (2) hydrant wrenches mounted in brackets fastened to the apparatus.
• Four (4) ladder belts meeting the requirements of NFPA 1983, *Standard on Fire Service Life Safety Rope and System Components* (if equipped with an aerial device).
• One (1) double female 2.50" (65 mm) adapter with National Hose threads, mounted in a bracket fastened to the apparatus.
• One (1) double male 2.50' (65 mm) adapter with National Hose threads, mounted in a bracket fastened to the apparatus.
• One (1) rubber mallet, for use on suction hose connections, mounted in a bracket fastened to the apparatus.
• Two (2) salvage covers each a minimum size of 12 ft x 14 ft (3.7 m x 4.3 m).
• One (1) traffic vest for each seating position, each vest to comply with ANSI/ISEA 207, *Standard for High Visibility Public Safety Vests*, and have a five-point breakaway feature that includes two (2) at the shoulders, two (2) at the sides, and one (1) at the front.
• Five (5) fluorescent orange traffic cones not less than 28.00" (711 mm) in height, each equipped with a 6.00" (152 mm) retro-reflective white band no more than 4.00" (152 mm) from the top of the cone, and an additional 4.00" (102 mm) retro-reflective white band 2.00" (51 mm) below the 6.00" (152 mm) band.
• Five (5) illuminated warning devices such as highway flares, unless the five (5) fluorescent orange traffic cones have illuminating capabilities.
• One (1) automatic external defibrillator (AED).
• If the supply hose carried does not use sexless couplings, an additional double female adapter and double male adapter, sized to fit the supply hose carried, will be carried mounted in brackets fastened to the apparatus.
• If none of the pump intakes are valved, a hose appliance that is equipped with one or more gated intakes with female swivel connection(s) compatible with the supply hose used on one side and a swivel connection with pump intake threads on the other side will be carried. Any intake connection larger than 3.00" (75 mm) will include a pressure relief device that meets the requirements of 16.6.6.
• If the apparatus does not have a 2.50" National Hose (NH) intake, an adapter from 2.50" NH female to a pump intake will be carried, mounted in a bracket fastened to the apparatus if not already mounted directly to the intake.
• If the supply hose carried has other than 2.50" National Hose (NH) threads, adapters will be carried to allow feeding the supply hose from a 2.50" NH thread male discharge and to allow the hose to connect to a 2.50" NH female intake, mounted in brackets fastened to the apparatus if not already mounted directly to the discharge or intake.

**SOFT SUCTION HOSE PROVIDED BY FIRE DEPARTMENT**

NFPA 1901, 2009 edition, section 5.7.2 requires a minimum of 20 ft of suction hose or 15 ft of supply hose.

Hose is not on the apparatus as manufactured. The fire department will provide suction or supply hose.

**DRY CHEMICAL extinguisher PROVIDED BY FIRE DEPARTMENT**

NFPA 1901, 2009 edition, section 5.8.3 requires one (1) approved dry chemical portable fire extinguisher with a minimum 80-B:C rating mounted in a bracket fastened to the apparatus.

The extinguisher is not on the apparatus as manufactured. The fire department will provide and mount the extinguisher.

**WATER EXTINGUISHER PROVIDED BY FIRE DEPARTMENT**

NFPA 1901, 2009 edition, section 5.8.3 requires one (1) 2.5 gallon or larger water extinguisher mounted in a bracket fastened to the apparatus.

The extinguisher is not on the apparatus as manufactured. The fire department will provide and mount the extinguisher.

**FLATHEAD AXE PROVIDED BY FIRE DEPARTMENT**

NFPA 1901, 2009 edition, Section 5.8.3 requires one (1) flathead axe mounted in a bracket fastened to the apparatus.

The axe is not on the apparatus as manufactured. The fire department will provide and mount the axe.

**PICKHEAD AXE PROVIDED BY FIRE DEPARTMENT**

NFPA 1901, 2009 edition, Section 5.8.3 requires one (1) pickhead axe mounted in a bracket fastened to the apparatus.

The axe is not on the apparatus as manufactured. The fire department will provide and mount the axe.

**PAINT - BODY PAINTED TO MATCH CAB**

The exterior custom cab and body painting procedure will consist of a seven (7) step finishing process as follows:

1. **Manual Surface Preparation** - All exposed metal surfaces on the custom cab and body will be thoroughly cleaned and prepared for painting. Imperfections on the exterior surfaces will be
removed and sanded to a smooth finish. Exterior seams will be sealed before painting. Exterior surfaces that will not be painted include; chrome plating, polished stainless steel, anodized aluminum and bright aluminum treadplate.

2. **Chemical Cleaning and Pretreatment** - All surfaces will be chemically cleaned to remove dirt, oil, grease, and metal oxides to ensure the subsequent coatings bond well. The aluminum surfaces will be properly cleaned and treated using a high pressure, high temperature 4 step Acid Etch process. The steel and stainless surfaces will be properly cleaned and treated using a high temperature 3 step process specifically designed for steel or stainless. The chemical treatment converts the metal surface to a passive condition to help prevent corrosion. A final pure water rinse will be applied to all metal surfaces.

3. **Surfacer Primer** - The Surfacer Primer will be applied to a chemically treated metal surface to provide a strong corrosion protective basecoat. A minimum thickness of 2 mils of Surfacer Primer is applied to surfaces that require a Critical aesthetic finish. The Surfacer Primer is a two-component high solids urethane that has excellent sanding properties and an extra smooth finish when sanded.

4. **Finish Sanding** - The Surfacer Primer will be sanded with a fine grit abrasive to achieve an ultra-smooth finish. This sanding process is critical to produce the smooth mirror like finish in the topcoat.

5. **Sealer Primer** - The Sealer Primer is applied prior to the Basecoat in all areas that have not been previously primed with the Surfacer Primer. The Sealer Primer is a two-component high solids urethane that goes on smooth and provides excellent gloss hold out when topcoated.

6. **Basecoat Paint** - Two coats of a high performance, two component high solids polyurethane basecoat will be applied. The Basecoat will be applied to a thickness that will achieve the proper color match. The Basecoat will be used in conjunction with a urethane clear coat to provide protection from the environment.

7. **Clear Coat** - Two (2) coats of Clear Coat will be applied over the Basecoat color. The Clear Coat is a two-component high solids urethane that provides superior gloss and durability to the exterior surfaces. Lap style and roll-up doors will be Clear Coated to match the body. Paint warranty for the roll-up doors will be provided by the roll-up door manufacture.

Specifications are written to define cyclic corrosion testing, physical strengths, durability and minimum appearance requirements must be met in order for an exterior paint finish to be considered acceptable as a Pierce quality finish.

Each batch of basecoat color is checked for a proper match before painting of the cab and the body. After the cab and body are painted, the color is verified again to make sure that it matches the color standard. Electronic color measuring equipment is used to compare the color sample to the color standard entered into the computer. Color specifications are used to determine the color match. A Delta E reading is used to determine a good color match within each family color.

All removable items such as brackets, compartment doors, door hinges, and trim will be removed and separately if required, to ensure paint behind all mounted items. Body assemblies that cannot be finish painted after assembly will be finish painted before assembly.
The cab and the body will be painted #90 red.

**PAINT - ENVIRONMENTAL IMPACT**
Contractor will meet or exceed all current State regulations concerning paint operations. Pollution control will include measures to protect the atmosphere, water and soil. Controls will include the following conditions:

- Topcoats and primers will be chrome and lead free.
- Metal treatment chemicals will be chrome free. The wastewater generated in the metal treatment process will be treated on-site to remove any other heavy metals.
- Particulate emission collection from sanding operations will have a 99.99% efficiency factor.
- Particulate emissions from painting operations will be collected by a dry filter or water wash process. If the dry filter is used, it will have an efficiency rating of 98.00%. Water wash systems will be 99.97% efficient.
- Water from water wash booths will be reused. Solids will be removed on a continual basis to keep the water clean.
- Paint wastes are disposed of in an environmentally safe manner.
- Empty metal paint containers will be to recover the metal.
- Solvents used in clean-up operations will be recycled on-site or sent off-site for distillation and returned for reuse.

Additionally, the finished apparatus will not be manufactured with or contain products that have ozone depleting substances. Contractor will, upon demand, present evidence that the manufacturing facility meets the above conditions and that it is in compliance with his State EPA rules and regulations.

**PAINT CHASSIS FRAME ASSEMBLY**
The chassis frame assembly will be painted to match the lower job color before the installation of the cab and body, and before installation of the engine and transmission assembly, air brake lines, electrical wire harnesses, etc.

Components that are included with the chassis frame assembly that will be painted are:

- Frame rails
- Frame liners
- Cross members
- Axles
- Suspensions
- Steering gear
- Battery boxes
- Bumper extension weldment
- Frame extensions
- Body mounting angles
- Rear Body support substructure (front and rear)
- Pump house substructure
• Air tanks
• Fuel tank
• Castings
  • Individual piece parts used in chassis and body assembly

Components treated with epoxy E-coat protection prior to paint:
  • Two (2) C-channel frame rails
  • Two (2) frame liners

The E-coat process will meet the technical properties shown.

COMPARTMENT INTERIOR PAINT
The compartment interior will be painted with a gray spatter finish for ease of cleaning and to make it easier to touch up scratches and nicks.

REFLECTIVE BAND
A 10.00" white reflective band will be provided across the front of the vehicle and along the sides of the body.

The reflective band provided on the cab face will be at the headlight level.

CHEVRON STRIPING, REAR
There will be alternating chevron striping located on the rear-facing vertical surface of the apparatus. The rear surface, excluding the rear roll up door, will be covered.

The colors will be red and fluorescent yellow green diamond grade.

Each stripe will be 6.00" in width.

This will meet the requirements of NFPA 1901, 2009 edition, which states that 50% of the rear surface will be covered with chevron striping.

JOG(S) IN REFLECTIVE BAND
The reflective band located on each side of the apparatus body will contain one (1) jog(s) and will be angled at approximately a 45 degrees when installed.

REFLECTIVE STRIPE OUTLINE
A black vinyl outline will be provided for each chevron stripe at the rear of the truck.

PIN STRIPE, DOUBLE TAPE
A double pin stripe will be applied on the reflective band. The pin stripe will consist of a Gold Metallic .125" stripe followed by a .125" void and then a .062" wide stripe. This pin stripe will be located on the top and bottom portion of the reflective band.
CAB DOOR REFLECTIVE STRIPE
A 6.00" x 16.00" black reflective stripe will be provided across the interior of each cab door. The stripe will be located approximately 1.00" up from the bottom, on the door panel.

This stripe will meet the NFPA 1901 requirement.

LETTERING
The lettering will be totally encapsulated between two (2) layers of clear vinyl.

LETTERING
Sixty-one (61) to eighty (80) genuine gold leaf lettering, 3.00" high, with highlight and shade will be provided.

LETTERING
There will be reflective lettering, 3.00" high, with no outline or shade provided. There will be 17 letters provided.

LETTERING
Twenty-one (21) to forty (40) reflective lettering, 6.00" high, with no outline or shade will be provided.

LETTERING
Twenty-one (21) to forty (40) genuine gold leaf lettering, 8.00" high, with highlight and double shade will be provided.

LETTERING
Twenty-one (21) to forty (40) genuine gold leaf lettering, 4.00" high, with highlight and shade will be provided.

LETTERING
There will be reflective lettering, 18.00" high, with no outline or shade provided. There will be three (3) letters provided.

DECAL INSTALLATION
There will be one (1) pair of decals furnished by the fire department and applied by the apparatus manufacturer.

CAB GRILLE DESIGN
An American flag design will be painted on the cab grille.

EMBLEM
There will be one (1) pair of emblems with the words "HONORING AMERICA'S BRAVEST 9-11-01" and a firefighter's helmet will be mounted on the fixed crew cab window. On the fixed crew cab window, the emblems will be color imaged.
MALTESE CROSS INSTALLATION
There will be one (1) pair of maltese crosses, comprised of genuine gold leaf material, provided and installed on the driver and passenger door.

FIRE APPARATUS PARTS CD MANUAL
There will be two (2) custom parts manuals for the complete fire apparatus provided in CD format with the completed unit.

The manuals will contain the following:

- Job number
- Part numbers with full descriptions
- Table of contents
- Parts section sorted in functional groups reflecting a major system, component, or assembly
- Parts section sorted in alphabetical order
- Instructions on how to locate parts

The manuals will be specifically written for the chassis and body model being purchased. It will not be a generic manual for a multitude of different chassis and bodies.

SERVICE PARTS INTERNET SITE
The service parts information included in these manuals are also available on the factory website. The website offers additional functions and features not contained in this manual, such as digital photographs and line drawings of select items. The website also features electronic search tools to assist in locating parts quickly.

CHASSIS SERVICE CD MANUALS
There will be two (2) CD format chassis service manuals containing parts and service information on major components provided with the completed unit.

The manual will contain the following sections:

- Job number
- Table of contents
- Troubleshooting
- Front Axle/Suspension
- Brakes
- Engine/Tires
- Wheels
- Cab
- Electrical, DC
- Air Systems
- Plumbing
- Appendix
The manual will be specifically written for the chassis model being purchased. It will not be a generic manual for a multitude of different chassis and bodies.

**CHASSIS OPERATION CD MANUALS**
There will be two (2) CD format chassis operation manuals provided.

**ONE (1) YEAR MATERIAL AND WORKMANSHIP**
A Pierce basic apparatus limited warranty certificate, WA0008, is included with this proposal.

**ENGINE WARRANTY**
A Detroit Diesel five (5) year limited engine warranty will be provided. A limited warranty certificate, WA0180, is included with this proposal.

**STEERING GEAR WARRANTY**
A Sheppard three (3) year limited steering gear warranty shall be provided. A copy of the warranty certificate shall be submitted with the bid package.

**FIFTY (50) YEAR STRUCTURAL INTEGRITY**
The Pierce custom chassis frame limited warranty certificate, WA0013, is included with this proposal.

**FRONT AXLE THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY**
The Pierce TAK-4 suspension limited warranty certificate, WA0050, is included with this proposal.

**REAR AXLE TWO (2) YEAR MATERIAL AND WORKMANSHIP WARRANTY**
A Meritor axle limited warranty certificate, WA0046, is included with this proposal.

**ABS BRAKE SYSTEM THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY**
A Meritor Wabco™ABS brake system limited warranty certificate, WA0232, is included with this proposal.

**TEN (10) YEAR STRUCTURAL INTEGRITY**
The Pierce custom cab limited warranty certificate, WA0012, is included with this proposal.

**TEN (10) YEAR PRO-RATED PAINT AND CORROSION**
A Pierce cab limited pro-rated paint warranty certificate, WA0055, is included with this proposal.

**FIVE (5) YEAR MATERIAL AND WORKMANSHIP**
The Pierce Command Zone electronics limited warranty certificate, WA0014, is included with this proposal.

**COMPARTMENT LIGHT WARRANTY**
The Pierce 12 volt DC LED strip lights limited warranty certificate, WA0203, is included with this proposal.

**TRANSMISSION WARRANTY**
The transmission will have a five (5) year/unlimited mileage warranty covering 100 percent parts and labor. The warranty will be provided by Allison Transmission.
Note: The transmission cooler is not covered under any extended warranty you may be getting on your Allison Transmission. Please review your Allison Transmission warranty for coverage limitations.

**TRANSMISSION COOLER WARRANTY**
The transmission cooler will carry a five (5) year parts and labor warranty (exclusive to the transmission cooler). In addition, a collateral damage warranty will also be in effect for the first three (3) years of the warranty coverage and will not exceed $10,000 per occurrence. A copy of the warranty certificate will be submitted with the bid package.

**WATER TANK WARRANTY**
A UPF poly water tank limited warranty certificate, WA0195, is included with this proposal.

**TEN (10) YEAR STRUCTURAL INTEGRITY**
The Pierce apparatus body limited warranty certificate, WA0009, is included with this proposal.

**ROLL UP DOOR MATERIAL AND WORKMANSHIP WARRANTY**
A Gorrite roll-up door limited warranty will be provided. The mechanical components of the roll-up door will be warranted against defects in material and workmanship for the lifetime of the vehicle. A six (6) year limited warranty will be provided on painted and satin roll up doors.

The limited warranty certificate, WA0190, is included with this proposal.

**SIX (6) YEAR MATERIAL AND WORKMANSHIP**
A Pierce PUC pump limited warranty certificate, WA0039, is included with this proposal.

**TEN (10) YEAR PUMP PLUMBING WARRANTY**
The Pierce apparatus plumbing limited warranty certificate, WA0035, is included with this proposal.

**FOAM SYSTEM WARRANTY**
The Husky 3 foam system limited warranty certificate, WA0231, is included with this proposal.

**TEN (10) YEAR PRO-RATED PAINT AND CORROSION**
A Pierce body limited pro-rated paint warranty certificate, WA0057, is included with this proposal.

**THREE (3) YEAR MATERIAL AND WORKMANSHIP**
The Pierce Goldstar gold leaf lamination limited warranty limited warranty certificate, WA0018, is included with this proposal.

**VEHICLE STABILITY CERTIFICATION**
The fire apparatus manufacturer will provide a certification stating the apparatus complies with NFPA 1901, current edition, section 4.13, Vehicle Stability. The certification will be provided at the time of bid.
ENGINE INSTALLATION CERTIFICATION
The fire apparatus manufacturer will provide a certification, along with a letter from the engine manufacturer stating they approve of the engine installation in the bidder's chassis. The certification will be provided at the time of bid.

POWER STEERING CERTIFICATION
The fire apparatus manufacturer will provide a certification stating the power steering system as installed meets the requirements of the component supplier. The certification will be provided at the time of bid.

CAB INTEGRITY CERTIFICATION
Pierce manufacturing will provide a cab crash test certification with this proposal. The certification states that the cab must meet or exceed the requirements below:

- European Occupant Protection Standard ECE Regulation No.29
- SAE J2422 Cab Roof Strength Evaluation - Quasi-Static Loading Heavy Trucks
- SAE J2420 COE Frontal Strength Evaluation - Dynamic Loading Heavy Trucks
- Roof Crush

The cab will be subjected to a roof crush force of 100,000 lb. This value will be 450 percent of the ECE 29 criteria, which must be equivalent to the front axle rating up to a maximum of ten (10) metric tons.

- Side Impact
The cab will be subjected to dynamic preload with a 13,275-lb moving barrier is slammed into the side of the cab at 5.50 mph, striking with an impact of 13,000 ft-lb of energy. This test will closely represent the forces a cab will see in a rollover incident.

- Frontal Impact
The cab will withstand a frontal force produced from 65,200 ft-lb of energy using a swing-bob type platen.

The same cab will withstand all tests without any measurable intrusion into the survival space of the occupant area.

CAB DOOR DURABILITY CERTIFICATION
Robust cab doors help protect occupants. Cab doors will survive a 200,000 cycle door slam test where the slamming force exceeds 20 G's of deceleration. The bidder will certify that the sample doors similar to those provided on the apparatus have been tested and have met these criteria without structural damage, latch malfunction, or significant component wear.
WINDSHIELD WIPER DURABILITY CERTIFICATION
Visibility during inclement weather is essential to safe apparatus performance. Windshield wipers will survive a 3 million cycle durability test in accordance with section 6.2 of SAE J198 Windshield Wiper Systems - Trucks, Buses and Multipurpose Vehicles. The bidder will certify that the wiper system design has been tested and that the wiper system has met these criteria.

ELECTRIC WINDOW DURABILITY CERTIFICATION
Cab window roll-up systems can cause maintenance problems if not designed for long service life. The window regulator design will complete 30,000 complete up-down cycles and still function normally when finished. The bidder will certify that sample doors and windows similar to those provided on the apparatus have been tested and have met these criteria without malfunction or significant component wear.

SEAT BELT ANCHOR STRENGTH
Seat belt attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat belt anchor design will withstand 3000 lb of pull on both the lap and shoulder belt in accordance with FMVSS 571.210 Seat Belt Assembly Anchorages. The bidder will certify that each anchor design was pull tested to the required force and met the appropriate criteria.

SEAT MOUNTING STRENGTH
Seat attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat mounting design will be tested to withstand 20 G's of force in accordance with FMVSS 571.207 Seating Systems. The bidder will certify that each seat mount and cab structure design was pull tested to the required force and met the appropriate criteria.

CAB DEFROSTER CERTIFICATION
Visibility during inclement weather is essential to safe apparatus performance. The defroster system will clear the required windshield zones in accordance with SAE J381 Windshield Defrosting Systems Test Procedure And Performance Requirements - Trucks, Buses, And Multipurpose Vehicles. The bidder will certify that the defrost system design has been tested in a cold chamber and passes the SAE J381 criteria.

CAB HEATER CERTIFICATION
Good cab heat performance and regulation provides a more effective working environment for personnel, whether in-transit, or at a scene. The cab heaters will warm the cab 77 degrees Fahrenheit from a cold-soak, within 30 minutes when tested using the coolant supply methods found in SAE J381. The bidder will certify that a substantially similar cab has been tested and has met these criteria.

AMP DRAW REPORT
The bidder will provide, at the time of bid and delivery, an itemized print out of the expected amp draw of the entire vehicle's electrical system.

The manufacturer of the apparatus will provide the following:

- Documentation of the electrical system performance tests.
• A written load analysis, which will include the following:
  o The nameplate rating of the alternator.
  o The alternator rating under the conditions specified per:
    ▪ Applicable NFPA 1901 or 1906 (Current Edition).
  o The minimum continuous load of each component that is specified per:
    ▪ Applicable NFPA 1901 or 1906 (Current Edition).
  o Additional loads that, when added to the minimum continuous load, determine the total connected load.
  o Each individual intermittent load.

All of the above listed items will be provided by the bidder per the applicable NFPA 1901 or 1906 (Current Edition).
Palo Alto RFQ/PO
City of Palo Alto  
Purchasing and Contract Administration  
P.O.Box 10250  
Palo Alto CA 94303  
Tel:(650)329-2271 Fax:(650)329-2468

**Vendor Address**  
PIERCE MANUFACTURING, INC.  
C/O GOLDEN STATE FIRE APPARATUS INC  
7400 RESSEY ROAD  
SACRAMENTO CA 95828  
Tel: 916-330-1638 Fax: 916-330-1649

**Purchase Order**

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ORDER: 1500 gallon-per-minute (GPM) fire pumper. Model CSU Fire Pumper with C20 Series pump transmission; custom designed and built for fire service in accordance with the specifications and requirements detailed in the Request for Quotation (RFQ) 159018 and per proposal.

Delivery: 315 days maximum upon receipt of Purchase Order and $250 per calendar day penalty of late delivery.

City Vehicle Number 6150 (Replaces 6116)

**Vendor to handle DMV registration for new Fire Pumper**

PROJECT MANAGER: Raul Juarez 650-496-6945
SEND INVOICE TO: EQUIPMENT MANAGEMENT 650-496-6922

*** ORDERING VIA EMAIL ***

*** PRICE HAS BEEN QUOTED ***

Sub-Total: 604,500.00
Sales Tax: 52,893.75

Total: 657,393.75

Interim Manager, Purchasing/Contract Administration

THIS P.O. IS SUBJECT TO THE TERMS AND CONDITIONS STATED BELOW AND ON THE LAST PAGE.
SPECIFICATIONS - Any specification and/or drawings referred to and/or attached hereto are expressly made a part of this Purchase Order.
DELIVERY - Please notify the City promptly if delivery cannot be made or before the date specified. If partial shipment is authorized, so indicate on all documents. Complete packing lists must accompany each shipment.
INVOICE - A separate invoice is required for each order. Send to address indicated above.
TERMS AND CONDITIONS OF PURCHASE

ACCEPTANCE/AGREEMENT: City of Palo Alto (City) reserves the right to reject any and all quotations, to waive any informalities, and, unless otherwise specified by Seller, to accept any item in a quotation. By accepting or filing this Purchase Order (P.O.), Seller agrees to the terms and conditions herein which shall prevail over any inconsistent provision in any form or other paper submitted by Seller. All shipments or services performed shall be deemed to have been made pursuant hereto. No other terms are acceptable. This P.O., including all specifications and drawings, shall constitute the entire agreement between the parties unless modified in writing by City.

CITY’S PROPERTY: Seller agrees that the information, tools, jigs, dies, or materials, and drawings, patterns, and specification supplied or paid for by City shall be and remain City property and shall be held by Seller for City until directed otherwise. Seller shall account for such items and keep them protected, insured, and in good working conditions without expense to City.

DELIVERY: The terms of delivery are as stated on the reverse side hereof. The obligation of Seller to meet the delivery dates, specifications, and quantities set forth herein is of the essence of this P.O. No boxing, packing, or carriage charge will be allowed unless authorized by this P.O. Deliveries are to be made both in quantities and at times specified herein or, if not, such quantities and times are specified pursuant to City’s written instruction. Items not delivered may be canceled without penalty to City. Shipments in greater or lesser quantity that occurred may be returned at Seller’s expense unless written authorization is issued by City.

PRICES: The price which Seller charges in filling this P.O. shall not be higher than Seller’s most recent quote or charge to City for such materials, supplies, services and/or installations unless City expressly agrees otherwise in writing. Notwithstanding the prices set forth the P.O., City shall receive the benefit of any general reduction in the price of any item(s) listed herein which may be made by Seller at any time prior to the last delivery of goods or services covered by this P.O.

TERMINATION: City shall have the right to terminate this P.O. or any part thereof upon (10) days notice in writing to Seller.

(1) Without Cause. City may terminate all or any part of this P.O. without cause. Any claim by Seller for damages due to termination without cause must be submitted to City within thirty (30) days after effective date of termination.

(2) For Cause. If Seller fails to make any delivery in accordance with the agreed delivery dates, delivery schedule, or otherwise fails to observe or comply with any of the other instructions, terms, conditions or warranties applicable to this P.O., City may, in addition to any other right or remedy provided by this P.O. or by law, terminate all or any part of this P.O. in writing without any liability of City with respect to Seller at any time during the term of this P.O. In the event of termination for cause, City may purchase supplies or services elsewhere on such terms or in such manner as City may deem appropriate and Seller shall be liable to City for any cost and other expenses incurred by City, which is charged to City.

CHANGES: City shall have the right at any time by written notice via P.O. Change Order to Seller to make changes in the specifications, the quantity of items called for, delivery schedules, and requirements covering testing, packaging, or destination. Any claim by Seller for adjustment under this clause shall be deemed waived unless made in writing within (10) days after receipt by Seller of notice of such change. Price increases or extensions of time for delivery shall not be binding on City unless evidenced by a P.O. Change Order issued by City’s Purchasing Manager.

INSPECTION: City shall have the right to inspect and approve or reject any materials, supplies, services and/or installations upon arrival of notice of completion prior to payment without regard to the manner of shipment, completion, or any shipping or price terms contained in this P.O. All materials, supplies, services and/or installations must be furnished as specified.

(1) Defective, damaged, and nonconforming materials and/or supplies may be returned for credit or refund, at Seller’s expense. City may charge Seller for all expenses of unpacking, examining, repacking and rehousing of such materials and/or supplies.

(2) Defective, Incorrect and nonconforming services and/or installations may be returned for credit or refund, at Seller’s expense. All of the above nonconforming prior payment by City.

WARRANTY: Seller expressly warrants that all materials, supplies, services and/or installations covered by this P.O. shall:

(1) conform to the specifications, drawings, samples, or other descriptions specified by City or if none are so specified, to Seller’s standard specification or the standards of the ASTM or ANSI or other national standard organizations;

(2) be new and unlies specified to the contrary on the face hereof, will be free from defects in material and workmanship and will be free of all liens and encumbrances and will conform to any affirmation of facts made on the container or label;

(3) be adequately contained, packaged, marked, labeled and/or provided in compliance with all applicable federal and state laws and regulations (including materials deemed hazardous);

(4) be performed within the rules and regulations of the Occupational Safety and Health Act of 1970 (as amended);

(5) be produced or transferred or disposed of as required by federal and state laws and regulation under the conditions of the Toxic Substances Control Act; the Hazardous Materials Control and Hazardous Waste Regulations; and other toxic laws and programs. Seller further expressly agrees to protect, indemnify, and hold harmless City, its employees and agents for any loss, damage, fine, liability, fee (including reasonable charges and fees) or expense arising in connection with or resulting from Seller’s failure to furnish materials or supplies or perform services that conform with any warranty contained herein.

(6) have good marketable title.

GOVERNING LAW: This P.O. shall be governed by the laws of the State of California.

INDEPENDENT CONTRACTOR, INSURANCE: Seller certifies, by acceptance, that he/she is an independent contractor. Seller shall protect, defend, and indemnify and hold City harmless against all damages, liability, claims, losses and expenses (including attorney’s fees) arising out of, or resulting in any way from Seller’s negligence in providing the goods or services purchased hereunder or from any act or omission of Seller’s agents, employees, or subcontractors. Seller shall maintain such public liability insurance, including contractual liability, automobile and general public liability, including non-owned automobile liability. Worker’s Compensation, and employer’s liability insurance as well adequately protect City against such damage, liabilities, claims, losses, and expenses (including attorney’s fees). Seller agrees to submit certificates of insurance, evidencing its insurance coverage when requested by City.

EQUAL OPPORTUNITY CLAUSE: By acceptance of this P.O., Seller certifies it is in compliance with the Equal Opportunity Clause required by Executive Order 11246, as amended, and the Palo Alto Municipal Code, as amended, including Affirmative Action Compliance Programs for Veterans; Handicapped; and Minority Business, and other equal opportunity programs.

FORCE MAJEURE: City may delay delivery or acceptance occasioned by cause beyond its control. Seller shall hold such materials, supplies, services and/or installations at the direction of City and shall deliver them when the cause affecting the delay has been removed. City shall be responsible only for Seller’s direct additional costs in holding the goods or delaying performance of this P.O. and City’s request. Seller shall also be excused if delivery is delayed by unforeseen events beyond its reasonable control, provided Seller notifies City as soon as they occur. City may cancel this P.O. if such delay exceeds thirty (30) days from the original delivery date. Seller shall use its best efforts to grant preference to this P.O. over those of other customers, which were placed after this P.O.

AUTHORITY OF AGENT OR FACTOR: Seller represents that, whenever it executes this P.O. on behalf of a third party as an agent or factor, it shall disclose the existence of the agency or factor relationship to City. Seller shall be deemed to have the legal authority to enter into this P.O. with City on behalf of the third party.

INTERPRETATION OF CONTRACT DOCUMENTS: In the event of a conflict between the terms of this P.O. and the attached specification with respect to any obligation of Seller, the provision which imposes the greater obligations upon Seller shall prevail.
TERMS AND CONDITIONS OF PURCHASE

ENVIRONMENTALLY PREFERRED PURCHASING REQUIREMENTS: Seller agrees to comply with the City’s Environmentally Preferred Purchasing Requirements.

(1) Hazardous Waste:
Seller shall take-back all spent or otherwise discarded hazardous products sold to the City by the Seller if the spent or discarded products are classified as hazardous or universal wastes by State or Federal regulations. Seller shall provide convenient collection and recycling services (or disposal services if recycling technology is unavailable) for all universal wastes, which originate from the Vendor. Hazardous waste manifests or bills of lading must be provided to City staff upon request. Recycling and reuse of hazardous wastes must occur within the United States. Universal waste lists and information are available www.dtsc.ca.gov/HazardousWaste/UniversalWaste/. A hazardous waste list is available at http://www.calrecycle.ca.gov/LEA/Training/selectclassyep.htm. Additional information can be obtained by contacting the City of Palo Alto Hazardous Waste Department at (650) 496-6980.

(2) Zero Waste:
Seller shall comply with the waste reduction, reuse and recycling requirements of the City’s Zero Waste Program. Seller acknowledges and agrees that if Seller fails to fully and satisfactorily comply with these requirements, the City will suffer, as a result of Seller’s failure, substantial damages which are both extremely difficult and impracticable to ascertain. Therefore, the Seller agrees that in addition to all other damages to which the City may be entitled, in the event Seller fails to comply with the below requirements Seller shall pay City as liquidated damages the amounts specified below. The liquidated damage amount is not a penalty but considered to be a reasonable estimate of the amount of damages City will suffer as a result of such non-compliance.

- Seller shall adhere to the standard that all printed materials provided to the City that are generated from a personal computer and printer including, proposals, quotes, invoices, reports, and public education materials shall be double-sided, printed on a minimum of 30% post-consumer content paper or greater unless otherwise approved by the City’s Environmental Services Division (650) 329-2117. Materials printed by a professional printing company shall be a minimum of 30% post-consumer materials or greater and printed with vegetable based inks. Liquidated damages of $30 per document will be assessed by City for failure to adhere to this requirement.

- All secondary and shipping (tertiary) packaging generated shall first be minimized/reduced to the maximum extent feasible while protecting the product shipped.

- All paper packaging must be Forest Stewardship Council (FSC) Certified.

- Expanded plastics (e.g., foam or cushion blocks, trays, pecking ‘peanuts’), such as but not limited to polystyrene (aka styrofoam®), polypropylene, or polyurethane shall be not used as secondary or tertiary/shipping packaging. Liquidated damages of $235 or a minimum of $50 if the combined product and shipping cost is $235 or less will be assessed by City for failure to adhere to this requirement.

- All secondary and shipping packaging shall be recyclable in the City’s recycling program. A complete list of items accepted for recycling are found at www.zerowaste Palo Alto.org or by calling (650) 496-5910. If any portion is received that does not meet this requirement, liquidated damages of $235 or a minimum of $50 if the combined product and shipping cost is $235 or less will be assessed by City for failure to adhere to this requirement.

- Reusable/recoverable pallets shall be used and taken back by the Seller, at no additional cost to the City. Seller shall provide documentation upon request ensuring reuse of pallets and/or recycling of broken pallets. Liquidated damages of $285 or a minimum of $50 if the combined product and shipping cost is $285 or less will be assessed by City for failure to adhere to this requirement.

(3) Energy and Water Efficiency:
Seller shall provide products with an ENERGY STAR, Water Sense or State of California standard rating, whichever is more efficient, when ratings exist for those products. A life cycle cost analysis shall be provided to the City upon request and shall at minimum include: first cost, operating costs, maintenance costs, and disposal costs.

Contacts for additional information about City of Palo Alto Hazardous Waste, Zero Waste and Utilities programs:

- Hazardous Waste Program (Public Works) (650) 496-6980
- Zero Waste Program (Public Works) (650) 496-5910
- Watershed Protection (650) 329-2117
- Energy Efficiency (650) 496-2244

(4) Liquidated Damages:
Seller agrees that failure to comply with the City’s Environmentally Preferred Purchasing Requirements will result in Liquidated Damages, according to the table marked Liquidated Damages on page 3 of this P.O.
## TERMS AND CONDITIONS OF PURCHASE

---

### NONCOMPLIANCE WITH ENVIRONMENTALLY PREFERRED PURCHASING REQUIREMENTS, LIQUIDATED DAMAGES:

The following table lists the events that constitute breaches of the Agreement's standard of performance warranting the imposition of liquidated damages; the acceptable performance level, and the amount of liquidated damages for failure to meet the contractually required standards of performance.

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REQUEST FOR QUOTATION

CITY OF
PALO
ALTO

April 20, 2015

The City of Palo Alto, Purchasing and Contract Administration, on behalf of Public Works Department, Equipment Management Division requests a quotation for:

PROJECT TITLE:

1500 GPM FIRE PUMPER

REQUEST FOR QUOTATION (RFQ) NUMBER 159018

RFQ DUE DATE: TUESDAY, MAY 19, 2015, 3:00 PM

Documents will not be accepted after 3:00 PM, Tuesday, May 19, 2015

Table of Contents:

SECTION I  Cover Page
Request for Quotation and Bidder Required Information (including submittal instructions)*

SECTION II  Purchase Order Terms and Conditions

SECTION III  Specifications and Bidder’s Bid Pages*
Scope of Work*

*Complete, sign and submit forms as instructed in the RFQ. Failure to complete and/or submit these forms may cause rejection of your Bid.

FOR BID DOCUMENTS: CONTACT PURCHASING AND CONTRACT ADMINISTRATION
(650) 329-2271
April 20, 2015

In response to this Request for Quotation (RFQ), the undersigned, as Bidder, declares that the only persons or parties interested in this Bid as principals are those named herein; that this Bid is made without collusion with any other person, firm or corporation; that the Bidder has carefully examined the specifications herein referred to; and the Bidder proposes and agrees, if this Bid is accepted, that the Bidder will contract with the City of Palo Alto (City), to provide all necessary materials, and furnish the specified requirements in this RFQ, in the manner herein prescribed and at the prices stated in the Bid.

**Project Title**
1500 GPM FIRE PUMPER

**City of Palo Alto Request for Quotation (RFQ) number:**
159018

**Quotation Due Date**
Quotation acceptance period closes (your quotation must be received by purchasing and contract Administration not later than) 3:00 p.m., Tuesday, May 19, 2015.

**Buyer/Contract Manager**
Saira Cardoza
Telephone Number: (650) 329-2327
Saira.cardoza@cityofpaloalto.org

**Project Manager**
Raul Juarez
Telephone Number: (650) 496-6945

**QUESTIONS:** All questions must be emailed to the Buyer by Wednesday, May 6, 2015

**Contract Award**
The contract, if awarded, shall be awarded to the lowest responsive and responsible bidder. The lowest bid shall be the lowest total of the bid prices quoted on the Bid Schedule. This total is being used for the purpose of determining the lowest bid.

Pursuant to Palo Alto Municipal Code Section 2.30.440, a responsible bidder is a bidder determined by the awarding authority:

1. To have the ability, capacity, experience and skill to perform the work, or provide the goods and/or services in accordance with the bid specifications;
2. To have the ability to perform the contract within the time specified;
3. To have the equipment, facilities and resources of such capacity and location and location to enable the bidder to perform the contract;
4. To have the ability to provide, as required, future maintenance, repair, parts and service for the use of goods purchased;
5. To have a record of satisfactory or better performance under prior contracts with the city or others; and
6. To have complied with applicable laws, regulations, policies (including city council policies), guidelines and orders governing prior or existing contracts performed by the bidder.

**Specifications**
The specifications or scope of work included have been prepared to describe the standard of quality, performance, and other characteristics needed to meet city requirements. The city will accept alternate proposals of a designated material, product, thing, service, “or equal”, and will determine if such alternate proposals are satisfactory in meeting a mandatory requirement or specification and if the proposed alternate meets the intent of the original mandatory requirement. The City reserves the right to conduct site visits for inspection of products being offered to determine if they meet the requirements as specified.

**Inspection**
See Part II, Technical Requirements 10.11 Inspection of the Specifications for addition information.

**Delivery Requirements**
When delivery time is requested in the quote or bid documents, time shall be of the essence; therefore, the quote or bid shall include the delivery date. In some instances, the City may specify only a maximum number of days for delivery and will use this delivery date as part the criteria to determine the award. The purchase order to be awarded is for a specific quantity purchased at one time.
Liquidated Damages
See Part 1, Introduction 6.0 Delivery of the Specifications for additional information.

Bid Security Requirement
Bidders shall submit a Bid security in the amount of not less than Ten percent (10%) of the aggregate amount of the Bid. Bid security shall be submitted with the bid and shall be in the form of a live certified check, cashier's check or surety bond, referencing to this bid number.

Surety Bond is given as security to assure the undersigned will enter into the contract for performance of the work as is specified herein, if awarded.

Note: The Bid Surety Bonds of Bidders who do not qualify as the Lowest Responsible Bidder shall be returned to such bidders upon the execution of the contract by City and the successful Bidder.

Decision to Reject
The City reserves the right to reject any or all quotations, to waive any informalities contained therein, and to select quotations on an item-by-item basis. No quotation may be withdrawn for a period of days (60 days) following the date of bid opening. The terms and conditions (the provisions) that shall govern any resulting agreement between City and the Lowest Responsible Bidder are contained in this RFQ. No charges of any kind will be allowed unless specifically made part of your quotation and are specified in your response.

Exceptions
To the specifications or requirements issued must be itemized and justified in writing and included with proposals or quotations submitted.

Documentation
Manuals, when applicable, shall be furnished by the Vendor with the shipment or under separate cover.

Taxes
Quotations shall include all applicable federal, state and local taxes, import duties, commissions or other charges.

F.O.B. Point
Prices shall be F.O.B. Destination, Freight Prepaid. Price shall include all applicable transportation and delivery charges.

Submission of Documents
A. In order to submit bids to the City of Palo Alto you must comply with the following:

Proposers shall email one (1) "Adobe PDF" type file of its proposal to the email address noted below. Bids may not be delivered by facsimile transmission. In the event bidder’s file is too large to email (rejected) bidder may submit a hard copy:

City of Palo Alto
Purchasing and Contract Administration
250 Hamilton Avenue
Palo Alto, CA 94301

B. Your PDF file proposal shall conform to the naming convention as follows:

"RFQ number_Your company name"
Example: "RFQ123456_Good Guy Consulting"

• Once your email is received by the City you will receive back an email acknowledgement notification confirming receipt of your email. Please do not copy any other email addresses for your bid submittal.

• All proposals shall be submitted to: bids@cityofpaloalto.org

Proposals must be received no later than 3:00 p.m. on Tuesday, May 19, 2015. All proposals received after that time will be returned to the Proposer deemed as disqualified.
SECTION I – REQUEST FOR QUOTATION (RFQ) AND BIDDER REQUIRED INFORMATION

Complete, sign and submit the RFQ/Bidder Information and Bidder Bid Pages with your quotation. Failure to complete and/or submit these forms may cause rejection of your quotation. All quotations must be submitted on these forms.

Bidder Information
Provide the information requested below or indicate "not applicable", if appropriate:

A. Name and Address of Bidder (Company) – also provide “Remit To” address if different:

____________________________________________________________________________________________________

____________________________________________________________________________________________________

Telephone Number: __________________________ Facsimile number: __________________________

E-Mail: __________________________ Website: __________________________

B. Bidder is a:

☐ California Corporation

☐ Corporation organized under the laws of the State of __________________________,

with head offices located at __________________________,

and offices in California at __________________________,

☐ Limited Liability Company

List name of managing member(s):

______________________________________________________________

☐ Sole Proprietorship ___________________________________ proprietor.

☐ Partnership

☐ Limited Liability Partnership

List names of general partners; state which partner or partners are managing partner(s)

______________________________________________________________

☐ Other (attach Addendum with explanatory details)

C. Have you (or your firm) previously worked for the City of Palo Alto? _____ Yes, or _____ No (if "Yes", list above, or if necessary, provide information on additional sheets).

D. Contractor’s license, number/type (if required):

______________________________________________________________

E. The Bidder represents that it has not retained a person to solicit or secure a City contract (upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee) except for retention of bona fide employee or bona fide established commercial selling agencies for the purpose of securing business.

F. During the Quotation process there may be changes to the Quotation documents, which would require an issuance of an addendum or addenda. City disclaims any and all liability for loss, or damage to any Bidder who does not receive any addendum issued by City in connection with this RFQ. Any Bidder in submitting a Quotation is deemed to waive any and all claims and demands Bidder may have against City on account of the failure of delivery of any such addendum to Bidder. Any and all addenda issued
by City shall be deemed included in this RFQ, and the provisions and instructions therein contained shall be incorporated to any Quotation submitted by Bidder.

To assure that all Bidders have received each addendum, the following acknowledgment and sign-off is required. Failure to acknowledge receipt of addendum/addenda may be considered an irregularity in the Bid:

Addendum number(s) received:  □ 1; □ 2; □ 3; □ 4; □ 5; □ 6; □ 7; □ 8; □ 9

Or, □ _________ No Addendum/Addenda Were Received (check and initial).

G. The firm and individuals listed below, certify that: they do not and in the performance of this contract they will not discriminate in employment of any person because of race, skin color, gender, age, religion, disability, national origin, ancestry, sexual orientation, housing status, marital status, familial status, weight or height of such person; and further certify that they are in compliance with all Federal, State and local directives and executive orders regarding nondiscrimination in employment.

Signature must be the same signature as appears in Bidder Bid Pages:

(Signature)

(Printed name of signatory)

(Title of signatory)
TERMS AND CONDITIONS OF PURCHASE

ACCEPTANCE/AGREEMENT: City of Palo Alto (City) reserves the right to reject any and all quotations, to waive any informalities, and, unless otherwise specified by Seller, to accept any item in a quotation. By accepting or filling this Purchase Order (P.O.), Seller agrees to the terms and conditions herein which shall prevail over any inconsistent provision in any form or other paper submitted or performed by Seller. All shipments or services shall be deemed to have been made pursuant hereto. No other terms are acceptable. This P.O., including all specifications and drawings, shall constitute the entire agreement between the parties unless modified in writing by City.

CITY'S PROPERTY: Seller agrees that the information, tools, jigs, dies, or materials, and drawings, patterns, and specification supplied or paid for by City shall be and remain City property and shall be held by Seller for City unless directed otherwise. Seller shall account for such items and keep them protected, insured, and in good working conditions without expense to City.

DELIVERY: The terms of delivery are as stated on the reverse side hereof. The obligation of Seller to meet the delivery dates, specifications, and quantities set forth herein is of the essence of this P.O. No boxing, packing, or cartage charge will be allowed unless authorized by this P.O. Deliveries are to be made both in quantities and at times specified herein or, if not, such quantities and times are specified pursuant to City's written instruction. Items not delivered may be canceled without penalty to City. Shipments in greater or lesser quantity that ordered may be returned at Seller's expense unless written authorization is issued by City.

PRICES: The price which Seller charges in filling this P.O. shall not be higher than Seller's most recent quote or charge to City for such materials, supplies, services and/or installations unless City expressly agrees otherwise in writing. Notwithstanding the prices set forth on this P.O. City shall receive the benefit of any general reduction in the price of any item(s) listed herein which may be made by Seller at any time prior to the last delivery of goods or services covered by this P.O.

TERMINATION: City shall have the right to terminate this P.O. or any part thereof upon ten (10) days notice in writing to Seller.

(1) Without Cause. City may terminate all or any part of this P.O. without cause. Any claim by Seller for damages due to termination without cause must be submitted to City within thirty (30) days after effective date of termination.

(2) For Cause. If Seller fails to make any delivery in accordance with the agreed delivery date, delivery schedule, or otherwise fails to observe or comply with any of the other instructions, terms, conditions or warranties applicable to this P.O., City may, in addition to any other right or remedy provided by this P.O. or by law, terminate all or any part of this P.O. in writing without any liability of City with respect to Seller at any time during the term of this P.O. In the event of termination for cause, City may purchase supplies or services elsewhere on such terms or in such manner as City may deem appropriate and Seller shall be liable to City for any cost and other expenses incurred by City, which is charged to City.

CHANGES: City shall have the right at any time by written notice via P.O. Change Order to Seller to make changes in the specifications, the quantity of items called for, delivery schedules, and requirements covering testing, packaging, or destination. Any claim by Seller for adjustment under this clause shall be deemed waived unless made in writing within ten (10) days after receipt by Seller of notice of such change. Price increases or extensions of time for delivery shall not be binding on City unless evidenced by a P.O. Change Order issued by City's Purchasing Manager.

INSPECTION: City shall have the right to inspect and approve or reject any materials, supplies, services and/or installations upon arrival of notice of completion prior to payment without regard to the manner of shipment, completion, or any shipping or price terms contained in this P.O. All materials, supplies, services and/or installations must be furnished as specified.

(1) Defective, damaged, and nonconforming materials and/or supplies may be returned for credit or refund, at Seller's expense. City may charge Seller for all expenses of unpacking, examining, reconditioning, packing and reshipping of such materials and/or supplies.

(2) Defective, incorrect or nonconforming services and/or installations may be returned for credit or refund, at Seller's expense. All of the above notwithstanding prior payment by City.

WARRANTY: Seller expressly warrants that all materials, supplies, services and/or installations covered by this P.O. shall:

(1) Conform to the specifications, drawings, samples, or other descriptions specified by City or if none are so specified, to Seller's standard specification or the standards of the ASTM or ANSI or other national standard organizations;

(2) be new and unless specified to the contrary on the face hereof, will be free from defects in material and workmanship and will be free of all liens and encumbrances and will conform to any affirmation of fact made on the container or label;

(3) be adequately contained, packaged, marked, labeled and/or provided in compliance with all applicable federal and state laws and regulations (including materials deemed hazardous);

(4) be performed within the rules and regulations of the Occupational Safety and Health Administration (OSHA), California Labor Code, and any other proper authority.

(5) be produced or transferred or disposed of as required by federal and state laws and regulations under the conditions of the Toxic Substances Control Act; the Hazardous Materials Control and Hazardous Waste Regulations, and other toxic laws and programs.

(6) have good marketable title.

GOVERNING LAW: This P.O. shall be governed by the laws of the State of California.

INDEPENDENT CONTRACTOR, INSURANCE: Seller certifies, by acceptance, that he/she is an independent contractor. Seller shall protect, defend, and indemnify and hold City harmless against all damages, liability, claims, losses and expenses (including attorney's fees) arising out of, or resulting in any way from Seller's negligence in providing the goods or services purchased hereunder or from any act or omission of Seller, its agents, employees, or subcontractors, Seller shall maintain such public liability insurance, including contractual liability, automobile and general liability insurance, Worker's Compensation, and employer's liability insurance as well as adequately protect City against such damage, liabilities, claims, losses, and expenses (including attorney's fees). Seller agrees to submit certificates of insurance, evidencing its insurance coverage when requested by City.

EQUAL OPPORTUNITY CLAUSE: By acceptance of this P.O., Seller certifies that it is in compliance with the Equal Opportunity Clause required by Executive Order 11246, as amended, and the Palo Alto Municipal Code, as amended, including Affirmative Action Compliance Programs for Veterans, Handicapped, and Minority Business, and other equal opportunity programs.

FORCE MAJEURE: City may delay delivery or acceptance occasioned by causes beyond its control. Seller shall hold such materials, supplies, services and or installations at the direction of City and shall deliver them when the cause affecting the delay has been removed. City shall be responsible only for Seller's direct additional costs in holding the goods or delaying performance of this P.O. and City's request. Seller shall also be excused if delivery is delayed by unforeseen events beyond its reasonable control, provided Seller notifies City as soon as they occur. City may cancel this P.O. if such delay exceeds thirty (30) days from the original delivery date. Seller shall use its best efforts to grant preference to this P.O. over those of other customers, which were placed after this P.O.

AUTHORITY OF AGENT OR FACTOR: Seller represents that, whenever it executes this P.O. on behalf of a third party as an agent or factor, it shall disclose the existence of the agency or factor relationship to City. Seller shall be deemed to have the legal authority to enter into this P.O. with City on behalf of the third party.

INTERPRETATION OF CONTRACT DOCUMENTS: In the event of a conflict between the terms of this P.O. and the attached specification with respect to any obligation of Seller, the provision which imposes the greater obligations upon Seller shall prevail.

CITY OF PALO ALTO – RFQ159018
GDS Rev. 09/28/2012

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ECONOMICALY PREFERRED PURCHASING REQUIREMENTS: Seller agrees to comply with the City’s Environmentally Preferred Purchasing Requirements.

(1) Hazardous Waste:
Seller shall take-back all spent or otherwise discarded hazardous products sold to the City by the Seller if the spent or discarded products are classified as hazardous or universal wastes by State or Federal regulations. Seller shall provide convenient collection and recycling services (or disposal services if recycling technology is unavailable) for all universal wastes, which originate from the Vendor. Hazardous waste manifests or bills of lading must be provided to City staff upon request. Recycling and reuse of hazardous wastes must occur within the United States. Universal waste lists and information are available www.dtsc.ca.gov/HazardousWaste/UniversalWaste/. A hazardous waste list is available at http://www.calrecycle.ca.gov/LEA/Training/wasteclass/yep.htm. Additional information can be obtained by contacting the City of Palo Alto Hazardous Waste Department at (650) 496-6980.

(2) Zero Waste:
Seller shall comply with the waste reduction, reuse and recycling requirements of the City’s Zero Waste Program. Seller acknowledges and agrees that if Seller fails to fully and satisfactorily comply with these requirements, the City will suffer, as a result of Seller’s failure, substantial damages which are both extremely difficult and impractical to ascertain. Therefore, the Seller agrees that in addition to all other damages to which the City may be entitled, in the event Seller fails to comply with the below requirements Seller shall pay City as liquidated damages the amounts specified below. The liquidated damage amount is not a penalty but considered to be a reasonable estimate of the amount of damages City will suffer as a result of such non-compliance.

- Sellers shall adhere to the standard that all printed materials provided to the City that are generated from a personal computer and printer including, proposals, quotes, invoices, reports, and public education materials shall be double-sided, printed on a minimum of 30% post-consumer content paper or greater unless otherwise approved by the City’s Environmental Services Division (650) 329-2117. Materials printed by a professional printing company shall be a minimum of 30% post-consumer material or greater and printed with vegetable based inks. Liquidated damages of $30 per document will be assessed by City for failure to adhere to this requirement.
- All secondary and shipping (tertiary) packaging generated shall first be minimized/reduced to the maximum extent feasible while protecting the product shipped.
- All paper packaging must be Forest Stewardship Council (FSC) Certified.
- Expanded plastics (e.g., foam or cushion blocks, trays, packing “peanuts”), such as but not limited to polystyrene (aka Styrofoam™ ), polypropylene, or polyurethane shall not be used as secondary or tertiary/shipping packaging. Liquidated damages of $235 or a minimum of $50 if the combined product and shipping cost is $235 or less will be assessed by City for failure to adhere to this requirement.
- All secondary and shipping packaging shall be recyclable in the City’s recycling program. A complete list of items accepted for recycling are found at www zerowastepalalto.org or by calling (650) 496-5910. If any portion is received that does not meet this requirement, liquidated damages of $235 or a minimum of $50 if the combined product and shipping cost is $235 or less will be assessed by City for failure to adhere to this requirement.
- If approved by the City’s Environmental Services Division and Administrative Services Department, a packaging takeback program may be proposed by the vendor or manufacturer for City use if the service is provided at no additional cost to the City. Staff will review proposed takeback programs to ensure the program meets City needs.
- If approved by the City’s Environmental Services Division, a packaging requirement may be waived if no other viable alternative exists and not using the current packaging presents the likelihood of product damage.
- Reusable/returnable pallets shall be used and taken back by the Seller, at no additional cost to the City. Seller shall provide documentation upon request ensuring reuse of pallets and/or recycling of broken pallets. Liquidated damages of $262 or a minimum of $50 if the combined product and shipping cost is $262 or less will be assessed by City for failure to adhere to this requirement.

(3) Energy and Water Efficiency:

Seller shall provide products with an ENERGY STAR, Water Sense or State of California standard rating, whichever is more efficient, when ratings exist for those products. A life cycle cost analysis shall be provided to the City upon request and shall at minimum include: first cost, operating costs, maintenance costs, and disposal costs.

Contacts for additional information about City of Palo Alto Hazardous Waste, Zero Waste and Utilities programs:
Hazardous Waste Program (Public Works)
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Watershed Protection
(650) 329-2117
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<td></td>
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<tr>
<td>Failure of Seller to Use secondary and shipping packaging that is recyclable in the City’s recycling program.</td>
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<td>$235 or a minimum of $50 if the combined product and shipping cost is $250 or less will be incurred if this is not adhered to.</td>
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<td>Expanded Foam Plastics</td>
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<td>$262 or a minimum of $50 if the combined product and shipping cost is $2 or less</td>
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SPECIFICATIONS AND BIDDER BID PAGES

SECTION III

Bidder's Response and Acceptance
In response to this Request for Quotations (RFQ), the undersigned, as Bidder, declares that the only persons or parties interested in this Bid as principals are those named herein; that this Bid is made without collusion with any other person, firm or corporation; that the Bidder has carefully examined the specifications herein referred to; and the Bidder proposes and agrees, if this Bid is accepted, that the Bidder will contract with the City of Palo Alto (City), to provide all necessary materials, and furnish the specified requirements in this RFQ, in the manner herein prescribed and at the prices stated.

Project Title: 1500 GPM Fire Pumper
Request for Quotations (RFQ) number 159018

Quotation Due Date: 3:00 P.M., TUESDAY, MAY 21, 2015

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY.</th>
<th>UNIT</th>
<th>DESCRIPTION</th>
<th>TOTAL PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>1</td>
<td>EA</td>
<td>New, 1500 Gallon-per-minute (GPM) Waterous, Model CSU fire pump with C20 Series pump Transmission. Option required: the pump must be able to be overhauled in the vehicle, (No Exceptions) Vendor to handle the DMV registration. (Per the attached specifications)</td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8.75% Sales Tax</td>
<td>$</td>
</tr>
</tbody>
</table>

Total, item 1, including sales tax:

(Total in words _________________________) $

LOWEST RESPONSIBLE BIDDER
The lowest bid shall be the lowest total of the bid prices on the base contract. This total is being used for the purpose of determining the lowest responsible bidder.

DELIVERY: Per the attached specifications the City is requesting a maximum of 315 for delivery after receipt of purchase order. See Part 1, Introduction 6.0 Delivery of the Specifications for additional information.

Delivery Point: City of Palo Alto
Municipal Service Center
3201 E. Bayshore Road
Palo Alto, CA 94303

PAYMENT TERMS: City of Palo Alto's Payment terms for this contract will be: N30

Signature must be the same as signature in Section I – Request for Quotation and Bidder Required Information.

Signature:

(Signature)

(Print name)
**Instructions:** Proposers are required to indicate a Yes or No response to each specification item listed in the following sections. The Yes or No response will be indicated by using the actual words “Yes” or “No” in the applicable column. Symbols such as a “\" or “X” mark will not be used. A response of “N/A,” or no response to any specification item may lead the proposal to be deemed nonresponsive. Each deviation will be explained fully in the space provided, or in a letter of clarifications which specifies the page number and section. A “Yes” response to a specification sentence or paragraph will mean that the Proposer intends to comply with the entire specification item. If Proposer complies with only part of a specification item, Proposer will not state a Yes response. Proposer is to state a No response and provide a detailed explanation regarding any partial specification compliance.

### PART I - INTRODUCTION

<table>
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<tr>
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<tr>
<td>1.0</td>
<td>SCOPE OF WORK</td>
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<tr>
<td>1.1</td>
<td>General</td>
<td>The successful bidder will furnish one (1) triple combination fire pumper meeting the specifications contained within this document. The fire pumper manufacturer will engineer and manufacture all of the chassis, cab and body systems within their own facilities. The procurement of cabs and chassis from secondary manufacturers is not acceptable.</td>
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<td>1.2</td>
<td>Manufacturer Experience Level</td>
<td>Proposals will only be considered from manufacturers that have an established reputation in the field of fire apparatus construction and that have been building fire apparatus for a minimum of thirty (30) years. All manufacturing will be conducted in domestically located, ISO 9001 certified facilities.</td>
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<td>2.0</td>
<td>APPLICATION</td>
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This unit will be used in urban and wildland fire fighting operations, and will be **custom designed and built for fire service.**

The pumper described in these specifications will be defined as a vehicle consisting of a hydraulically tilting four (4) door cab with five-person seating capacity, compartmented body, 1,500 gallon-per-minute (GPM) fire pump, and a front engine/rear drive chassis of sufficient capacity to carry these items and all other components and accessories described below.

The vehicle offered in the bidder’s proposal will be designed and engineered to provide a 20 year/100,000 mile life under conditions typically encountered in urban firefighting operations. During its life, the vehicle offered will not experience any degradation of the frame, cab structure, compartment/hose body structure, or cab and body mounting components; other than normal wear and tear.

Documentation and references attesting to the potential longevity of the vehicle offered will be provided with bid response.
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<td>The pumper offered in the bidder’s proposal will be trouble-free, and safe to operate by personnel of widely varying stature. It will include high-performance braking and suspension systems, to provide the most comfortable ride and shortest stopping distance possible. The pumper offered will exhibit excellent ergonomics and features designed to enhance firefighter comfort. Hose lays will be constructed at the lowest height practical; steps and running boards will be safe and “user-friendly.” All stepping surfaces will be engineered to mitigate step-off injuries. The cab interior will include a minimum of plastic materials, and will include roll-down fire blankets for interface fires. The pumper offered will be designed with basic, rugged and reliable electrical systems, which employ a minimum of electronic controls. Lighting systems will include LED fixtures wherever practical.</td>
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<td>3.0</td>
<td>STANDARDS</td>
<td>This unit shall comply with the NFPA standards effective January 1, 2009, except for fire department specifications that differ from NFPA specifications. Unit shall also meet all applicable Federal Motor Vehicle Safety Standards (FMVSS); Society of Automotive Engineers (SAE) and American National Standards Institute (ANSI) Standards, and all other Federal, State and Local regulations applicable to this type of equipment. The contractor and the City agree that the law governing this agreement will be that of the State of California. <strong>FAILURE TO COMPLY WITH THIS REQUIREMENT WILL AUTOMATICALLY DISQUALIFY THE BID.</strong> This specification will, in all cases, govern the construction of the apparatus, however, if this specification does not meet or exceed NFPA 1901 (latest edition), then the later will apply <strong>(NO EXCEPTIONS)</strong></td>
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<td>4.0</td>
<td>DIMENSIONS</td>
<td>Because space as limited at some of the fire stations where the specified fire pumper may be stored, the following dimensions are definite and cannot be exceeded: <strong>Overall Length:</strong> 364.75 inches <strong>Overall Height:</strong> 115 inches</td>
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<td>5.0</td>
<td>PARTS AND SERVICE SUPPORT</td>
<td>Since the continuous operation of this equipment is important and <strong>always</strong> of an emergency nature, it is necessary that the successful bidder be in a position to render prompt parts and service support.</td>
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<td>The successful bidder will maintain and/or have access to a full-service repair facility within a 150-mile radius of the city of Palo Alto. The parts inventory will be of sufficient size and variety to offer an availability of approximately 95% within 48 hours of order by this agency. Availability of normal wear items will not exceed 24 hours.</td>
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<td>The bidder will attach a proposed parts and service support program for evaluation.</td>
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<td>The City of Palo Alto places a high priority on service. In order to provide efficient service and support during the life of the apparatus, it will be required that the successful contractor maintains an factory authorized service and repair facility in Northern California. <strong>FAILURE TO COMPLY WITH THIS REQUIREMENT WILL AUTOMATICALLY DISQUALIFY THE BID.</strong></td>
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<td>The contractor’s service center will have an indoor heated facility and will be protected by fire and security alarm systems for safe storage of the apparatus.</td>
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<td>The facility’s primary focus will be fire apparatus maintenance and repair including but not limited to water pumps, valves, plumbing, hydraulics, aerial devices, complex electrical systems, emergency lighting, and foam application systems.</td>
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<td>The facility will also provide a full service collision center where major body and paint repairs can be performed.</td>
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<td>The service facility will maintain a complete inventory of repair and/or replacement parts, have an on-site training classroom, and own a minimum of one (1) fully equipped mobile service vehicle with the ability to carry spare parts and repair equipment.</td>
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<td>All bidders will provide details of their service capabilities in the categories listed below:</td>
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<td><strong>Service Facility Location:</strong></td>
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<td><strong>Service Facility Manager:</strong></td>
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City of Palo Alto – RFQ159018
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<td></td>
<td>Service Facility Phone Number:</td>
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<td>24 / 7 / 365 Service Phone Number:</td>
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<td>Service Facility Website:</td>
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<td>Number of Service Bays:</td>
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<td></td>
<td>Number of Mobile Service Vehicles:</td>
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<td></td>
<td>Number of Factory-Trained Service Technicians:</td>
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<td>List all current certifications each technician possesses:</td>
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<td>Service Facility Hours of Operation;</td>
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<td>Service Facility Parts Inventory (in Dollars):</td>
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<td>The local service center will be available for inspection prior to award of the contract.</td>
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**6.0 DELIVERY**

Delivery times stated in the bid response and purchase order will be in calendar days, and are of the essence. If the delivery is not completed on or before the promised date, liquidated damages will be imposed on the bidder, as noted in the following paragraph:

*Any delay by Contractor to perform will interfere with the proper implementation of City's programs to the loss and damage of City. As it would be impracticable to fix the actual damage City sustains in the event of any such failure to perform, City and Contractor, therefore, presume that in the event of any such failure to perform, the amount of damage which will be sustained by City will be the sum of $250.00 for each and every calendar day during which said work will remain uncompleted beyond such time for completion or approved extension thereof. Amounts due City as liquidated damages may be deducted by City from any monies due Contractor, and the Contractor and his Sureties will be liable to City for any amount not liquidated.*

If the successful bidder is delayed or obstructed in completing this contract for reasons beyond his/her control, the delivery date may be extended for a period that will be mutually agreed upon by the contractor and the City.

Delivery time will continue until final acceptance of the equipment by the City.

The actual delivery will be conducted by driving the vehicle under its own power from the manufacturer's facility to its final destination. The vehicle will be protected from damage by rock chips, road tar, salt and other debris during transit. Any road grime or salt spray will be cleaned from the vehicle immediately upon its arrival at the local distributor. The successful bidder shall register this vehicle with the Department of Motor Vehicles.
### 7.0 DEALER PREPARATION

Bid prices must include all necessary dealer preparation applicable to new equipment prior to final delivery to the City. The dealer will provide and/or complete the following services (if applicable to the specification):

- **Proposal Compliance** - Inspect apparatus for compliance with proposal.
- **Fluid Levels** - Inspect for correct capacities of the following: engine oil, coolant, power steering fluid, washer reservoir fluid, transmission fluid, differential fluid, pump transmission oil, and primer oil.
- **Visual Inspection** - Inspect tires and wheels for proper pressure and lug torquing. Tighten any loose hardware and repair reasonable paint scratches or chips. Lubricate valve rods and check doors for correct adjustment.
- **Electrical Inspection** - Operate all lights, sirens, and other electrical accessories.
- **Road Test** - Run a road test with tank full. Empty tank, drain pump, and drain all lines when above steps are completed.
- **Fuel Tanks** - Fuel tanks will be filled to capacity prior to final delivery.
- **Cleaning / Detailing** - The apparatus will be thoroughly washed and detailed at the dealership prior to final delivery to the City. This includes removal of any metal shavings.

The City will have the option to inspect the apparatus at the contractor’s service facility prior to final delivery.

### PART II – TECHNICAL REQUIREMENTS

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<tr>
<td>1.1</td>
<td>GVWR</td>
<td>43,500 pounds</td>
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<tr>
<td>1.2</td>
<td>Wheelbase</td>
<td>188.5 inches</td>
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<td>1.3</td>
<td>Frame</td>
<td>The frame will consist of two (2) .38&quot; thick steel channels, with a minimum of five (5) bolted crossmembers. Side rails will be tapered, with a 13.38&quot; web over the front and mid sections of the chassis, continuous smooth taper to 10.75&quot; over the rear axle. Frame flanges will be 3.50&quot; wide.</td>
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| 1.4| Front Frame Section | • Section Modulus: 26  
• Yield Strength: 120,000 psi  
• RBM: 3,119,040 inch-pounds |                  |                                          |
| 1.5| Rear Frame Section  | • Section Modulus: 19  
• Yield Strength: 120,000 psi  
• RBM: 2,275,200 inch-pounds |                  |                                          |
| 1.6| Frame Reinforcement | An inverted "L" frame liner will be provided. The frame liner will be be constructed of heat-treated steel, measuring 12.00" X 3.00" X .25".  
• Section modulus: 7.795  
• Yield strength: 110,000  
• RBM: 657,462 inch-pounds |                  |                                          |
| 1.7| Total RBM         | Total RBM with reinforcement will be 3,976,502 inch-pounds per rail at the wheelbase centerline. |                  |                                          |
| 1.8| Lift and Tow Mounts | Lift and tow mounts will be installed on the front frame extensions.  
Two (2) heavy-duty steel tow eyes will be incorporated into the mounts. The mounts and tow eyes will be designed and positioned to adapt to most commonly used tow truck lifting systems.  
Inner and outer edges of the tow eyes will incorporate .25" radius.  
Tow mounts and eyes will be painted to match the frame. |                  |                                          |
| 1.9| Front Axle        | Oshkosh "TAK-4" or approved equal.  
19,500 pound GAWR  
45° cramp angle (installed, with front discharge, front suction and alloy wheels).  
Stemco oil seals (or approved equal). |                  |                                          |
| 1.10| Front Suspension  | Front axle will include fully-independent front suspension utilizing torsion bars or air springs. Suspension will have a minimum 19,500 pound capacity.  
Heavy-duty shock absorbers (Koni or approved equal). |                  |                                          |
<p>| 1.11| Rear Axle         | Rockwell RS-24-160                                                                               |                  |                                          |</p>
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<tr>
<td>1.12</td>
<td>Rear Suspension</td>
<td>Semi-elliptical leaf springs, with a 27,000 pound ground rating.</td>
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<td>Springs will be 10-leaf, approximately 3.00&quot; X 52.00&quot;.</td>
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<td>Cast spring hangers, with Kaiser spring pins (or approved equal). Spring pins will include a double &quot;figure-eight&quot; grease groove, and 1.0 mil electroless nickel plating. Hanger bushings will also include grease grooves.</td>
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<td>The front of the top two leaves will wrap the front spring hanger pin, and the top leaf will wrap the rear spring hanger pin.</td>
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<td>1.13</td>
<td>Wheels</td>
<td>Ten-hole, hub piloted Alcoa® forged aluminum disc type, polished outside (front only) and inside (rear only). Front wheels will be 22.50&quot; X 12.25&quot;; rears will be 22.50&quot; X 8.25&quot;.</td>
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<td>Stainless steel hub and lug nut covers will be provided, front and rear. Front hub covers will include an oil level view window.</td>
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<td>1.14</td>
<td>Tires</td>
<td><strong>Front:</strong> Goodyear 385/65R22 5 radials, 18 ply G296 MSA tread, rated for 20,050 lb maximum axle load and 68 mph maximum speed.</td>
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<td><strong>Rear:</strong> Goodyear 12R22.5 radials, 16 ply Highway G661 HSA tread, rated for 27,120 lb maximum axle load and 75 mph maximum speed.</td>
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<td>1.15</td>
<td>Foundation Brakes</td>
<td><strong>Front:</strong> Knorr/Bendix air-disc type, with 17.00&quot; ventilated rotors.</td>
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<td><strong>Rear:</strong> Meritor Q-Plus, 16.5&quot; X 7.00&quot;, with Meritor automatic slack adjusters and outboard-mounted drums.</td>
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<td>Unit will be equipped with spring-set parking brakes, which will be capable of holding the vehicle, fully loaded, on a 20% grade (MGM or approved equal).</td>
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<td>1.16</td>
<td>Air Compressor</td>
<td>Bendix BA-921 with 15.80 cubic feet per minute output at 1,250 RPM</td>
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<td>1.17</td>
<td>Air Dryer</td>
<td>Wabco System Saver 1200 air dryer with spin-on coalescing filter cartridge</td>
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<td>1.18</td>
<td>Brake Hoses</td>
<td>DOT-approved, SAE 100R5 compliant.</td>
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<td>Color coded nylon brake lines will be provided. The lines will be wrapped in a heat protective loom where necessary in the chassis.</td>
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<td>1.19</td>
<td>Quick Air Buildup</td>
<td>The air brake system will include a quick air buildup tank.</td>
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<tr>
<td>1.20</td>
<td>Electronic Anti-lock system</td>
<td>Rockwell/WABCO 4S4M (or approved equal)</td>
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<td>System will provide full four-wheel antilock operation, with individual control at each wheel.</td>
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<td>1.21</td>
<td>All-Wheel Lockup System</td>
<td>Provide an all-wheel lockup system which will apply air to the front brakes, and activate the rear spring brakes.</td>
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<td>1.22</td>
<td>Auxiliary Parking Brake Control</td>
<td>Provide a second parking brake control valve at the officer’s side of the instrument panel. This valve will control parking brake operation only, and will not be activated by low air pressure.</td>
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<td>1.23</td>
<td>Automatic Traction Control</td>
<td>An anti-slip feature will be included with the anti-lock braking system (ABS). The Automatic Traction Control will be used for traction in poor road and weather conditions. The Automatic Traction Control will act as an electronic differential lock which will not allow a driving wheel to spin, thereby supplying traction at all times.</td>
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<td>The ABS electronic control unit (ECU) will work with the engine ECU, sharing information concerning wheel slip. The engine ECU will use this information to control engine speed, allowing only as much throttle application as required for the available traction, regardless of the throttle pressure being applied by the driver. A &quot;mud/snow&quot; switch will be provided on the instrument panel. Activation of the switch will allow additional tire slip to let the truck climb out and get on top of deep snow or mud.</td>
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<td>1.24</td>
<td>Air Inlet/Outlet</td>
<td>One (1) air inlet/outlet will be installed recessed with the female coupling located in the driver side lower step well of cab. This system will tie into the &quot;wet&quot; tank of the brake system and include a check valve in the inlet line and an 85 psi pressure protection valve in the outlet line. The air outlet will be controlled by a needle valve.</td>
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<td>A matching male air coupler, air blower nozzle, and 50 foot heavy-duty 3/8's inch air hose will be provided for each fire engine with the loose equipment.</td>
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<td>The air inlet will allow a shore line air hose to be connected to the vehicle. This will allow station air to be supplied to the brake system.</td>
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<td>1.25</td>
<td>Steering</td>
<td>Steering gear: Two (2), Sheppard M110 or approved equal.</td>
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<td>Pump: Eaton model VN20F hydraulic pump with integral pressure and flow control</td>
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<td>1.26</td>
<td>Engine</td>
<td>1. The chassis will be powered by an electronically controlled engine as described below:</td>
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<td></td>
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<td>o  Make: Detroit Diesel</td>
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<td>o  Model: DD13</td>
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<td></td>
<td>o  Power: 500 hp at 1800 rpm</td>
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|    |              | o □ Torque: 1650 lb-ft at 1200 rpm  
|    |              | o □ Governed Speed: 2080 rpm  
|    |              | o □ Emissions Level: EPA 2015  
|    |              | o □ Fuel: Diesel  
|    |              | o □ Cylinders: Six (6)  
|    |              | The engine will include On-board diagnostics (OBD), which provides self-diagnostic and reporting. The system will give the owner or repair technician access to state of health information for various vehicle sub systems. The system will monitor vehicle systems, engine and after treatment. The system will illuminate a malfunction indicator light on the dash console if a problem is detected. | Yes/No    | Exceptions/Alternatives* |
|    |              | Replaceable element type air cleaner matched to engine, with:  
|    |              | ▪ Dash mounted "tell-tale" restriction indicator  
|    |              | ▪ External air intake with hinged stainless steel screen. Air intake will be located high on curbside of cab, in front of crew cab door.  
|    |              | ▪ Ember separator. Ember separator will be easily accessible through the air intake grille.                                                |           |                 |
| 1.28| Engine Brake | Furnish a Jacobs Engine Brake® appropriate for the specified engine configuration.  
|    |              | The engine brake will include one (1) on/off switch and one (1) high/medium/low control switch.                                                                                                             |           |                 |
|    |              | The vehicle’s brake lights will be activated whenever the engine brake is in operation.                                                                                                                   |           |                 |
|    |              | The vehicle’s anti-lock brake system will automatically disengage the engine brake when low-traction conditions exist.                                                                                  |           |                 |
| 1.29| Accessory Drives | Engine accessories (except alternator and air conditioning compressors) will be flange mounted, and gear driven.                                                                 |           |                 |
| 1.30| Certification | The fire truck manufacturer will certify the engine manufacturer’s approval of the engine installation.                                                                                                    |           |                 |
| 1.31| Fuel System  | Fuel tank:  
<p>|    |              | ▪ 65 gallon capacity, installed at rear of vehicle. Tank will be securely mounted to frame with straps, or via brackets that fully support the tank.                                                          |           |                 |
|    |              | ▪ All welded, aluminized 12-gauge steel construction, baffled and vented, with drain sump and fitting.                                                                                                 |           |                 |</p>
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<th>Nr</th>
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<th>List Deviations</th>
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<td></td>
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<td><strong>Fuel fill:</strong></td>
<td>Yes/No</td>
<td>Exceptions/Alternatives*</td>
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<td>- Two (2) fuel fillers will be provided; one (1) on each side of the body if space allows, otherwise only one fuel filler will be provided.</td>
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<td>- Fuel fill hoses and piping will be arranged to prevent &quot;splash-back&quot;.</td>
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<td>- Fuel fillers will be covered by a hinged, spring loaded stainless steel door, clearly labeled: &quot;DIESEL FUEL&quot;</td>
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<td><strong>System installation:</strong></td>
<td>Yes/No</td>
<td>Exceptions/Alternatives*</td>
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<td>The fuel system and fuel tank will be mounted as high as possible underneath the apparatus to provide the best possible ground clearance.</td>
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<td></td>
<td><strong>Diesel Exhaust Fluid Tank:</strong></td>
<td>Yes/No</td>
<td>Exceptions/Alternatives*</td>
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<td>A 4.5 gallon diesel exhaust fluid (DEF) tank shall be provided and mounted in the driver's side body rearward of the rear axle. The tank shall be constructed of 16-gauge type 304-L stainless steel.</td>
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<td>A .50&quot; drain plug shall be provided in a low point of the tank for drainage.</td>
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<td>A fill inlet shall be provided and marked &quot;Diesel Exhaust Fluid Only&quot;. The fill inlet shall be located adjacent to the engine fuel inlet behind a common hinged, spring loaded, stainless steel door on the driver side of the vehicle.</td>
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<td>The tank shall meet the engine manufacturers requirement for 10 percent expansion space in the event of tank freezing.</td>
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<td>The tank shall include an integrated heater unit that utilizes engine coolant to thaw the DEF in the event of freezing.</td>
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<td>The stainless steel flip door for selecting between DEF fill and the diesel fill shall be spring loaded to default to covering the DEF fill.</td>
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</table>
| 1.32 | Exhaust System | The exhaust system shall include a diesel particulate filter (DPF) and a selective catalytic reduction (SCR) device to meet current EPA standards. The exhaust system shall be stainless steel from the turbo to the inlet of the SCR device and shall be 5.00" in diameter. An insulation wrap shall be provided on all exhaust pipe between the turbo and SCR to minimize the transfer of heat to the cab. The exhaust shall terminate horizontally ahead of the passenger side rear wheels. A tailpipe diffuser shall be provided to reduce the temperature of the exhaust as it
| Nr | Item                  | Requirements                                                                                                                                                                                                 | Complies? | List Deviations
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<th>Exceptions/Alternatives</th>
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<td>exits. Heat deflector shields shall be provided to isolate chassis and body components from the heat of the tailpipe diffuser</td>
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<td>Appropriate warning lights (high backpressure, high exhaust temperature, and system malfunction) will be provided and installed on the left side of the dash. A switch to initiate the DPF regeneration cycle will be located near the dashboard.</td>
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<td>Heat deflector shields will be provided wherever the exhaust system passes under compartments.</td>
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<td>The exhaust system will provide 10.5&quot; ground clearance.</td>
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<td>The exhaust pipe shall be brought out from under the body at a 90 degree angle from the truck. The tail pipe shall extend a minimum of 2.00&quot; past the body, adaptable for the Plymovent system. The diameter of the pipe shall be 7.00&quot;. There shall be a clearance of 4.00&quot; completely around the pipe once past the side of the body. A stop shall be provided on the tail pipe that shall prevent the nozzle from sliding too far on.</td>
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<td></td>
<td>Disclose the design of the system offered in your bid response.</td>
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<td>1.33 Cooling System</td>
<td>The cooling system will meet or exceed NFPA standards. Cooling system capacity will exceed requirements specified by the engine manufacturer under all truck operating conditions.</td>
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<td>The engine cooling system will be certified as described in Section 10.2 - Certification.</td>
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<td>Radiator:</td>
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<td>• Serpentine design; Betaweld® construction. Radiator surface area will be a minimum of 1,395 square inches.</td>
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<td>• Radiator mounting system will protect the radiator from chassis flex.</td>
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<td>• Radiator tanks will bolt to the core. Provide a coolant level sight gauge on the top tank. The sight gauge will be visible without tilting cab.</td>
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<td>• Radiator installation will not affect approach angle.</td>
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<td>• A coolant recovery and de-aeration system will be provided. Radiator and the complete cooling system will meet or exceed NFPA cooling system standards.</td>
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<td><strong>Hoses:</strong></td>
<td>• All cooling system hoses (including heater lines) will be silicone.</td>
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<td>• Hoses will be secured with stainless steel, constant-torque, silicone compatible clamps.</td>
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<td><strong>Fan:</strong></td>
<td>Cooling system will include a heavy-duty fan; fully shrouded so that radiator draws in only fresh, cool air.</td>
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<td><strong>Fan clutch:</strong></td>
<td>Horton “DriveMaster” or approved equal.</td>
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<td>Fan clutch will operate normally when the pump transmission is in “Road,” and engaged constantly when in “Pump.”</td>
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<td>A low coolant sensor and warning light will be provided. Light will be installed on instrument panel.</td>
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<td>Antifreeze will be installed which will provide protection to minus 34°F.</td>
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<td><strong>Coolant filter</strong></td>
<td>Furnish and install a coolant filter that meets guidelines set forth by the engine manufacturer.</td>
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<td>1.34</td>
<td>Transmission</td>
<td><strong>Allison EVS4000P</strong> matched to engine rating, and equipped with the following features and accessories:</td>
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<td>• Six (6) forward speeds</td>
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<td>• Two (2) PTO openings; located on the left side and top of transmission housing (&quot;eight o'clock&quot; and &quot;one o'clock&quot; positions).</td>
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<td>• Oil-to-coolant heat exchanger (integral with radiator).</td>
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<td>• &quot;Touch pad&quot; shift control (illuminated), located with within easy reach of driver. Disclose shift control location in bid response.</td>
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<td>• Transmission temperature sensor, with gauge and high temperature light located in instrument panel.</td>
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<td>• The transmission shall be equipped with prognostics to monitor oil life, filter life, and transmission health. A wrench icon on the shift selector's digital display shall indicate when service is due.</td>
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<td>• The transmission shall be provided with an aggressive downshift mode. This shall provide earlier transmission downshifts to 3rd gear from 6th gear, resulting in improved engine braking performance.</td>
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<td>• The transmission shall be provided with TranSynd heavy-duty synthetic transmission fluid.</td>
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<td>1.35</td>
<td>Driveline</td>
<td>Spicer® 1810 series, dynamically balanced, with coated splines. Grease shields will be provided around u-joints and slip yokes.</td>
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<td>1.36</td>
<td>Cranking System</td>
<td>Provide a single circuit battery/start system. Batteries will be connected directly to the starter solenoid.</td>
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<td>Cranking batteries:</td>
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<td>There shall be six (6) AC Delco Model 31-900CT, group 31 12 volt DC, batteries provided. Each battery shall include the following specifications:</td>
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<td>950 CCA, cold cranking amps @ 0 degrees Fahrenheit.</td>
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<td>1185 CA, cranking amps @ 32 degrees Fahrenheit.</td>
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<td>195 amp reserve capacity,</td>
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<td>High cycle,</td>
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<td>SAE Posts.</td>
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<td>Battery compartment:</td>
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<td>• Batteries will be installed in a well ventilated compartment located under the cab, aft of the front axle.</td>
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<td>• Batteries will be mounted on a 3/16&quot; aluminum tray. Battery tray will be lined with non-corrosive mats. All hold-down hardware will be stainless steel.</td>
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<td>• If a battery tray cannot be supplied, batteries will be accessed via a hatch installed in the crew cab floor.</td>
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<td>Battery cables:</td>
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<td>Delco sealed terminal style, sized to meet the requirements of SAE J541 (Voltage Drop for Starting Motor Circuits).</td>
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<td>Master battery switch:</td>
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<td>Provide a master battery switch to disconnect the batteries from the electrical system. The switch will be located in the cab, within easy reach of operator.</td>
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<td>Battery jumper studs:</td>
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<td></td>
<td>Furnish a set of battery jumper studs on the rear side of the battery box/compartment. The studs will include plastic color coded covers, and tags indicating the polarity of each stud.</td>
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| Nr  | Item               | Requirements                                                                                                                                                                                                 | Complies? | List Deviations
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<td>Terminal protection:</td>
<td>• Battery terminals will be coated with corrosion preventive compound. • Battery solenoid terminals will be encapsulated with semi-permanent rubberized compound.</td>
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<td>1.37</td>
<td>Charging System</td>
<td><strong>Alternator:</strong> A Delco Remy®, Model 55SI, alternator shall be provided. It shall have a rated output current of 430 amps, as measured by SAE method J56. The alternator shall feature an integral regulator and rectifier system that has been tested and qualified to an ambient temperature of 257 degrees Fahrenheit (125 degrees Celsius). The alternator shall be connected to the power and ground distribution system with heavy-duty cables sized to carry the full rated alternator output. <strong>Cables:</strong> Alternator cables (power and ground) will be sized to carry 125% of the full rated load of the alternator.</td>
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<td>1.38</td>
<td>Electrical System</td>
<td>(Section 6.0 describes general chassis electrical system requirements (other than the cranking or charging systems).)</td>
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<td>2.0</td>
<td>CAB EXTERIOR</td>
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<tr>
<td>2.1</td>
<td>Cab Type</td>
<td>Four (4) door, fully enclosed tilting type. Cab will provide for separate driver/officer and crew seating areas. <strong>Entire cab will tilt 45 degrees with on-board hoist, and 90 degrees with crane assist.</strong></td>
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<td>2.2</td>
<td>Construction</td>
<td>Cab will be constructed from 5052-H32 .125&quot; sheet aluminum welded to extruded aluminum framing. All cab entry and access doors will be constructed from extruded aluminum with a nominal thickness of .125&quot;. Exterior skins will be fabricated from 0.090&quot; aluminum sheet. Front cab corners will be contoured, to an outside radius of approximately nine (9) inches. Cab will meet all applicable standards for crash and roll-over protection. Cab design, structural drawings and material list will be made available upon request.</td>
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<td>2.3</td>
<td>Dimensions</td>
<td><strong>Exterior width:</strong> The cab shall be 94.75&quot; wide (outside door skin to outside door skin) to maintain maximum maneuverability</td>
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<td>Height (ground to cab roof): 103&quot;</td>
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<td>2.4</td>
<td>Cab Mounting</td>
<td>Cab will be mounted to frame via three (3) rubber mounts.</td>
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<td>Cab will be tilted via an electrically-actuated hydraulic pump and two (2) heavy-duty lift cylinders. The cab will be secured in the lowered position by a two-point spring-loaded automatic hook system.</td>
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<td>Cab lift system will include a manual override that will be capable of fully lifting and lowering the cab in case of electrical system failure.</td>
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<td>Cab lift system will include a parking brake interlock, so that it can be actuated only when the parking brake is set and the ignition switch is in the &quot;on&quot; position.</td>
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<td>Lift cylinders will include a pilot-operated check valve or velocity fuse that will prevent the sudden descent of the cab in case of a hydraulic pressure loss.</td>
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<td>Cab lift system will include a mechanical stay-arm that automatically engages when the cab is fully raised. Prior to lowering the cab, the stay-arm will be disengaged via a control located near the cab raise/lower switch.</td>
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<td>Lift controls will be located on or near the pump panel; or, in the front area of the body within an enclosed compartment. When lift control access door is open, it shall not interfere with cab when raising or lowering.</td>
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<td>2.5</td>
<td>Cab Entry</td>
<td>The forward cab and crew cab access steps shall be a full size two (2) step design to provide largest possible stepping surfaces for safe ingress and egress. The bottom steps shall be designed with a grip pattern punched into bright aluminum treadplate material to provide support, slip resistance, and drainage. The bottom steps shall be a bolt-in design to minimize repair costs should they need to be replaced. The forward cab steps shall be a minimum 24.75&quot; wide, and the crew cab steps shall be 21.25&quot; wide with an 8.00&quot; minimum depth. The inside cab steps shall not exceed 18.00&quot; in height and be limited to two (2) steps. Three (3) step entrance designs shall not be acceptable due to safety concerns. A slip-resistant handrail shall be provided adjacent to each cab door opening to assist during cab ingress and egress.</td>
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<td>Step rise (ground to step; step to cab floor) will not exceed NFPA specifications.</td>
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<td>Steps will be trimmed with bright finish aluminum treadplate and will include an aluminum grip strut insert.</td>
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<td><strong>Grab bars:</strong></td>
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<td>• Install one (1) 20&quot; long, slip-resistant grab bar on the exterior of the cab at each entry.</td>
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<td>• Grab bars will consist of knurled aluminum or stainless steel tubes, or stainless steel tubes with rubber inserts. Grab bars will mount to cab with chrome bar</td>
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<td>2.6</td>
<td>Doors</td>
<td>Four (4) total, “barrier style”</td>
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<td><strong>Features:</strong></td>
<td>Yes/No</td>
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<td></td>
<td>- Cab doors will be constructed from .125” aluminum extrusions, with 0.090”</td>
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<td>exterior aluminum skin.</td>
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<td>- Doors will present a smooth exterior surface; extrusions will not be visible.</td>
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<td>- Doors will be flush with the exterior of body, without a protruding flange,</td>
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<td>or &quot;lip&quot;.</td>
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<td>- Full width drip rails will be installed over all doors.</td>
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<td>- All door openings will be sealed with closed cell, automotive style double</td>
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<td>weatherstripping. Weather strip material will be attached to the full outer</td>
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<td>perimeter of the door and to the entire door opening.</td>
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<td><strong>Door handles:</strong></td>
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<td></td>
<td>- Door handles will include automotive style rotary latches, and chrome-plated</td>
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<td>stamped/cast steel paddle handles on interior and exterior of door (Atwood</td>
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<td></td>
<td>or approved equal).</td>
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<td>- A gasket will be installed under each paddle handle.</td>
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<td>- Interior door handles will be located so that they cannot be accidentally</td>
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<td>opened.</td>
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<td><strong>Hinges:</strong></td>
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<td>Stainless steel, continuous type, with 1/4” pin.</td>
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<td><strong>Locks:</strong></td>
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<td>- All cab doors will be equipped with electrically-controlled door locks.</td>
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<td>- Three (3) remote control switches will be provided. One switch will be</td>
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<td>hidden on the outside of the vehicle near the driver’s door; the second</td>
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<td>switches will be inside the cab, in the front door panels adjacent to the</td>
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<td>window control switches.</td>
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<td>- All exterior door lock cylinders (including compartment locks) will be</td>
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<td>keyed alike. The same key code will be used for all vehicles purchased.</td>
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<td><strong>Door panels:</strong></td>
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<td>- Full height, polished stainless steel door panels will be installed on the</td>
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<td>inside of all cab doors.</td>
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<td>- Cab door panels will be removable without disconnecting door latches or</td>
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<td>window regulator controls.</td>
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<td><strong>Dimensions:</strong></td>
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<td>- Driver and officer door openings: 37.50&quot;W X 61.75&quot;H</td>
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<td>- Crew cab door openings: 34.88&quot;W X 61.75&quot;H</td>
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<td>2.7</td>
<td>Fender Liners</td>
<td>Full, semi-circular shaped wheel well liners will be provided.</td>
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<td>2.8</td>
<td>Glass</td>
<td>All cab glass will be tinted</td>
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<td><strong>Windshield:</strong></td>
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<td>- Split, ¼&quot; thick, curved glass, 2,700 square inch minimum total view area.</td>
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<td>- Windshield sections will be commonly available through local automotive glass distributors.</td>
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<td>- Windshield molding will include bright trim inserts.</td>
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<td><strong>Front Grab bars:</strong></td>
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<td>- Provide two (2) 12&quot; – 14&quot; wide grab bars at the front center of the cab, to allow safe access for windshield cleaning.</td>
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<td>- The grab bars will consist of a knurled aluminum or stainless steel tube.</td>
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<td>- The grab bars will mount to the cab with chrome bar ends. Bar ends will be offset so that the bar is below the level of the grille fascia, leaving the painted area between the grille and windshield clear for insignia or lettering.</td>
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<td><strong>Side windows:</strong></td>
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<td>- The driver, officer and crew doors will be equipped with automotive style windows.</td>
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<td>- Each window will be equipped with a heavy-duty electric actuator, which will be controlled by automotive-style control switch.</td>
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<td>- The window control switches for the officer's door, DS crew cab door and PS crew cab door will be mounted on the switch panel over the engine tunnel as specified by PAFD at pre-construction conference.</td>
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<td>- A 13.50&quot;W X 21.25&quot;H fixed view window will be installed on each side of cab, between the driver/officer and crew cab doors. Window molding will include bright trim inserts.</td>
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<td>2.9</td>
<td>Storage</td>
<td>Furnish a storage compartment behind the driver seat. The compartment will be accessed from the exterior of the vehicle.</td>
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<td>- The compartment will be constructed from ¼&quot; aluminum sheet, and will be approximately 15.50&quot;H X 17.25&quot;W X 25.75&quot;D (depth measured from the side of cab).</td>
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<td>• The compartment will include a double-pan, lap style door, with a &quot;D-ring&quot; style latch. The door opening will be approximately 14.00&quot; H X 14.65&quot; W (located over the wellwell).</td>
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<td>• Rope-style LED lighting will be installed around both sides and the top of the door opening. The lighting will be controlled by a door switch.</td>
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<td>• The compartment exterior will be painted to match the cab interior. The compartment interior will be painted with a gray splatter or Zolotone® finish.</td>
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<td>Furnish a storage compartment behind the officer's seat. The compartment will be accessed from the exterior of the vehicle.</td>
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<td>• The compartment will be constructed from .125&quot; aluminum sheet, and will be approximately 15.50&quot; H X 15.25&quot; W X 21.75&quot; D (depth measured from the side of cab).</td>
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<td></td>
<td>• The compartment will include a double-pan, lap style door, with a &quot;D-ring&quot; style latch. The door opening will be approximately 14.00&quot; H X 10.75&quot; W, and located over the wellwell.</td>
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<td>• Rope-style LED lighting will be installed around both sides and the top of the door opening. The lighting will be controlled by a door switch.</td>
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<td>• The compartment exterior will be painted to match the cab interior. The compartment interior will be painted with a gray splatter or Zolotone® finish.</td>
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<td>Furnish a storage compartment on each side of the cab. The compartments will be located below the cab floor, just to the rear of the crew cab access doors. The compartments will be accessed from the exterior of the vehicle.</td>
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<td>• The compartments will be constructed from .125&quot; aluminum sheet, and will be approximately 9.50&quot; W X 14.00&quot; D X 18.00&quot; H.</td>
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<td>• Provide single-pan compartment doors with flush-mount quarter-turn latches, and rubber door stops.</td>
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<td></td>
<td>• Rope-style lighting will be installed around both sides and the top of the door opening. The lighting will be controlled by a door switch.</td>
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<td>2.10</td>
<td>Front Bumper</td>
<td>Full width, channel type, 10&quot; high.</td>
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<td>Bumper will be fabricated from ten-gauge 34-2B polished stainless steel.</td>
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<td>A notch will be provided to allow for recessing a siren into the bumper. The siren will be flush with the front of the bumper,</td>
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<td></td>
<td>The bumper will facilitate a ¼&quot; thick polished stainless steel guard fabricated to protect the top of the siren body. The guard will be level with the top of the bumper.</td>
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<td>The bumper will be attached to an extension frame constructed from 50,000 psi steel &quot;C&quot; channel. The bumper will extend 16&quot; from the front of the cab, unless the maximum overall length requirement will be exceeded.</td>
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<td>The open area between the bumper and cab will be covered with .125&quot; bright finish aluminum treadplate, except over the compartment described in e. below.</td>
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<td>The front bumper will include a hose tray compartment (located between the bumper and the cab).</td>
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|     |          | **Hose tray details:**  
• The hose tray will be located between the frame rails. The tray will be as large as space allows, but no less than 11"W X 27"L X 14"D. The tray will be fabricated from .125" aluminum sheet construction  
• Include one (1) full-width adjustable divider.  
• The tray will be large enough to accommodate 50' of 1-3/4" synthetic hose in the rear section, and 100' of 1-3/4" synthetic hose in the front section.  
• Two (2) heavy duty Velcro retaining straps will be provided to secure the hose inside the tray (no cover required).  
• The floor of the tray will be self-draining, with “Dri-Dek” overlay.  
• The final design of the compartment will be determined at the pre-construction conference. |           |                                          |
<p>| 2.11 | Mirrors  | A Retrac Aerodynamic, Model 613295, dual vision, motorized, west coast style mirror with chrome finish shall be mounted on each side of the front cab door with spring loaded retractable arms. The flat glass and convex glass shall be adjustable with a remote control within reach of the driver. |           |                                          |
| 2.12 | Trim     | Furnish and install polished stainless steel fender crowns at the cab wheelwell openings.                                                                                                                  |           |                                          |
|      |          | Outside corner of fender crowns will be radiused, and crowns will extend beyond the sidewall of the front tires.                                                                                               |           |                                          |
|      |          | Fender crowns will not impede the opening of any door.                                                                                                                                                      |           |                                          |
|      |          | Aluminum fender crowns are not acceptable                                                                                                                                                                 |           |                                          |
|      |          | Bright aluminum treadplate will be installed on the outside rear wall of the cab except in areas that are not typically visible when the cab is lowered.                                                       |           |                                          |
| 3.0  | CAB INTERIOR |                                                                                                                          |           |                                          |
| 3.1  | General  | Cab will be equipped with five (5) fixed seating positions.                                                                                                                                     |           |                                          |</p>
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<tr>
<td>3.2</td>
<td>Dimensions</td>
<td>Width</td>
<td><strong>Interior</strong></td>
<td>87.50&quot;</td>
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<td>3.3</td>
<td>Materials/Finishes</td>
<td>All cab interior upholstery will be dark silver gray in color. All metal surfaces inside the cab that are not covered by upholstery or fabricated panels will be painted with gray vinyl-texture paint. The engine cover will be covered with 46-ounce oil and mildew resistant leather grain padded vinyl. Toe boards will be finished with bright aluminum treadplate, Cab dash fascia will be constructed from flat painted aluminum. A list of all interior materials will be made available upon request.</td>
<td>Yes/No</td>
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<td>3.4</td>
<td>Floor Covering</td>
<td>The entire cab floor will be covered with Polydamp® Pyramid Floormat (PAB-011-PYCC), which consists of a dense filled vinyl with a pyramid pattern surface combined with a ¼&quot; closed cell foam.</td>
<td>Yes/No</td>
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<td>3.5</td>
<td>Engine Cover</td>
<td>The engine cover will be fabricated from sheet aluminum. Sidewalls will be tapered near the top to allow more elbow/arm clearance for driver and officer. The engine cover will include thermal and sound suppressant insulation sufficient to limit in-cab noise to the level noted in Item 10.1 – Noise Level. (See Item 3.6 – Insulation). The engine cover will include a hinged access hatch (approximately 15.00&quot;W X 11.25&quot;H), which will allow convenient fluid level checks. The access hatch will be located at the rear of the engine cover. Mounting plate: A .188&quot; aluminum plate will be installed on the horizontal surface of the engine tunnel. This plate will be at least 1.00&quot; above the vinyl surface of the engine hood. This plate will allow for mounting of radio/computer equipment as necessary. It will be painted to match the interior of the cab. Engine tunnel tray: A metal tray, 14&quot; by 14&quot; by 2&quot; high will be fabricated and painted to match interior and mounted between the driver and officer’s seat.</td>
<td>Yes/No</td>
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<td>3.6</td>
<td>Insulation</td>
<td>Cab will be fully insulated to meet the noise level requirement described in Item 10.1 – Noise Level, as well as to provide optimum temperature regulation. At a minimum, the cab walls and ceiling will be insulated with 1.50&quot; R-6 open-cell foam insulation wherever possible. Foam-in-place insulation will be used where conventional insulation panels will not fit.</td>
<td>Yes/No</td>
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<td><strong>The engine cover will be insulated as follows:</strong></td>
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<td>0.50&quot; barrier foam will be installed under the vinyl</td>
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<td>1.00&quot; and 1.50&quot; foil-backed foam (depending on location) will be installed on the underside of the cover.</td>
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<td>All insulation will be covered with a vinyl liner or with metal panels painted to match the cab interior.</td>
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<td>A list of all insulating materials; with “R” values and locations will be provided with bid response.</td>
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<td>Insulation must meet or exceed DOT requirements.</td>
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<td>3.7</td>
<td>Headliner</td>
<td>A full headliner will be installed in the driver/officer and crew cab areas.</td>
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<td>The headliner will consist of a sound-deading material and heavy duty vinyl covering, bonded to an aluminum sheet, and securely fastened to cab ceiling.</td>
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<td>The headliner in the driver/officer area will provide access for servicing electrical wiring and components without requiring the removal of the entire headliner.</td>
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<td>3.8</td>
<td>Seating</td>
<td><strong>Driver’s seat:</strong></td>
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<td></td>
<td>Seats, Inc. Model 911 high-back scissor action, with air suspension</td>
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<td>The seat back will be removable for ease of access to components located behind the driver seat.</td>
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<td>The seat will be provided with 6.00&quot; double locking fore/aft slide adjustment.</td>
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<td><strong>Officer’s seat:</strong></td>
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<td></td>
<td>Seats, Inc. Model 911 high-back.</td>
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<td></td>
<td></td>
<td>The seat back will be removable for ease of access to components located behind the driver seat.</td>
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<td>The seat will be provided with 6.00&quot; double locking fore/aft slide adjustment.</td>
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<td><strong>Rear seats:</strong></td>
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<td>One (1) forward facing; Seats, Inc. Model 911 SCBA.</td>
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<td>• The SCBA cavity will be adjustable front to rear in .50&quot; increments to accommodate different SCBA bottle sizes.</td>
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<td>• Adjustment of the SCBA cavity will be accomplished by with the use of common hand tools.</td>
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<td>• This seat will be located in the center position, against the rear cab wall.</td>
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<td>Two (2) forward facing; Seats, Inc. fold-up style seats</td>
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|    | Seats                 | • Seats will be installed in the outboard positions, against the rear cab wall. Seats will be mounted as far outboard as possible without creating interference during entry/egress.  
  • Seat will include a contoured high-back cushion, with nine-degree tilt.   |           |                                                                                   |
|    | Seat belts            | • Provide three (3) point auto-retracting, inertia type, lap belts at all seating positions.                                                                                                                  |           |                                                                                  |
|    |                       | • Inertia type shoulder belts will be provided at rear-facing and jump seat positions.                                                                                                                      |           |                                                                                  |
|    |                       | • Seat belts will be of sufficient length to accommodate personnel in full "turnout gear".                                                                                                                   |           |                                                                                  |
|    |                       | • Seat belts and mounting hardware will meet all applicable FMVSS requirements.                                                                                                                            |           |                                                                                  |
|    |                       | • All seat belts will be red in color.                                                                                                                                                                      |           |                                                                                  |
|    | Seat risers           | • The risers under the officer’s seat and forward-facing rear center seat will incorporate storage compartments. The officer’s compartment will be accessed by a hinged door (approximately 15.00”W X 7.75”H).  
  • The forward-facing rear seat storage compartment will include a slide out tray for better accessibility measuring 38.00” wide x 22.625” front to back.  
  • The door on the forward-facing rear center seat riser will be located on the front of the riser. This door will slide out fully to gain access inside.  
  • Doors will be retained by flush-mount quarter-turn latches.                                                                 |           |                                                                                  |
<p>|    |                       | The battery charger described in Item 6.5 will be installed under the forward-facing rear seat (space allowing).                                                                                           |           |                                                                                  |
|    | Seat Upholstery       | All Seats Inc. 911 seat upholstery will be gray woven with black Imperial 1200 material.                                                                                                                                 |           |                                                                                  |
|    |                       | The final seating arrangement will be confirmed at the pre-construction conference.                                                                                                                         |           |                                                                                  |
|    | Instrument Panel      | Instrument panel will be hinged for service access                                                                                                                                                        |           |                                                                                  |
|    |                       | All electrical connections to panel switches, gauges and other devices will be made with connectors that insure maximum security to prevent inadvertent disengagement when the instrument panel assembly is opened or closed. |           |                                                                                  |</p>
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<td>All wiring and connectors proposed will meet the approval of the Palo Alto Fire Department and Equipment Management Division.</td>
<td>Yes</td>
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<td>All instrument panel controls and switches will be identified as to function by backlit legends.</td>
<td>Yes</td>
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<td>Wherever possible, warning indicators will not be visible until activated (&quot;deadfront&quot; style).</td>
<td>Yes</td>
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<td>3.10</td>
<td>Gauges</td>
<td>All gauges will be &quot;Pricol&quot; &quot;Classic Series&quot; (or approved equal). Disclose type and style of gauges provided in bid response</td>
<td>Yes</td>
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<td>All gauges will have 1-3/4&quot; faces, except where noted.</td>
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<td>The switch panel will be located on top of the engine tunnel within easy reach of the driver. Switches will be rocker type with an indicator light, of which is an integral part of the switch. The emergency switch control panel configuration will be as such that the driver's will be the primary user. Instrument panel gauges, vehicle lights and other electrical accessories will have proper size wiring to accommodate expected current load. Wiring will meet SAE J-1128 specifications for high temperature (250 degrees Fahrenheit minimum) conditions and be color, number and function coded.</td>
<td>Yes</td>
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<td>Cab instruments and controls will be conveniently located within the forward cab section. Gauges and emergency vehicle switches will be installed on removable panels for ease of service. The following gauges and controls will be furnished:</td>
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<td>• Speedometer/Odometer: Electric</td>
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<td>• Tachometer: Electric</td>
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<td>• Hourmeter for Engine</td>
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<td></td>
<td></td>
<td>• Engine Oil Pressure Gauge: Red warning light and an audible alarm</td>
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<td>• Engine Coolant Temperature Gauge: Red warning light and an audible alarm</td>
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<td>• Automatic Transmission Oil Temperature Gauge: Red warning light and an audible alarm</td>
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<td>• Two (2) Air Pressure Gauges: Red warning lights and an audible alarm</td>
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<td>• Voltmeter: Warning light and audible alarm indicating high or low voltage</td>
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<td></td>
<td></td>
<td>• Low Coolant Indicator Light (amber): Audible alarm</td>
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<td></td>
<td></td>
<td>• Fuel Gauge</td>
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<td></td>
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<td>• Low Fuel Indicator Light: Audible alarm</td>
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<td></td>
<td></td>
<td>• Ignition Switch: Green indicator light</td>
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<td></td>
<td></td>
<td>• Starter Control</td>
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<td></td>
<td>• Heater Controls</td>
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<td>• Headlight Switch</td>
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<td><strong>Self Canceling Turn Signal Switch (arm):</strong> Visual indicators</td>
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<td><strong>Headlight Dimmer and Hazard Switch:</strong> Incorporated into turn signal arm</td>
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<td><strong>Warning Light Switch Control Panel</strong></td>
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<td><strong>Parking Brake Control:</strong> Red indicator light.</td>
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<td><strong>Horn Button:</strong> Center of the steering wheel (for dual electric horns)</td>
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<td><strong>Control to Check Engine Warning System Indicators.</strong></td>
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<td><strong>Air Restriction Indicator (electronic with indicator light).</strong></td>
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<td><strong>One two (2)-speed Windshield Wiper Control with Intermittent Feature.</strong></td>
<td>The control will also have a &quot;return to park&quot; provision, which allows the wipers to return to the stored position when the wipers are not in use.</td>
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<td><strong>Windshield Washer Controls.</strong></td>
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<td><strong>A dash mounted air restriction gauge will be provided, in the cab instrument panel.</strong></td>
<td>The gauge will be a Farr, model 3781-325, filter minder with black bezel.</td>
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<td>- DPF Regen</td>
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<td>- DPF Inhibit</td>
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<td><strong>Alarms:</strong></td>
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<td>- Low engine oil pressure</td>
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<td>- High coolant temperature</td>
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<td>- High transmission temperature</td>
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<td>- Low air pressure</td>
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<td>- High or low electrical system voltage</td>
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<td><strong>Switch Panels:</strong></td>
<td>The built-in emergency light switch panel will have a master switch plus individual switches for selective control. The switch panel will be located in the &quot;overhead&quot; position above the windshield on the driver's side to allow for easy access. Switches will be rocker type with an indicator light, of which is an integral part of the switch.</td>
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<td><strong>Miscellaneous:</strong></td>
<td>Cab HVAC system controls (see Item 3.11 below).</td>
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| 3.11| HVAC System               | **Defroster:**  
- Provide a windshield defroster with a minimum 41,000 BTU/hr capacity.  
- Defroster vents will be integrated into the dash and instrument panel. System components will be easily removable for maintenance.  
- Defroster system will include a three (3) speed blower, with fan speed and temperature controls accessible from both the driver and officer positions.  
**Auxiliary heating:**  
- Provide two (2) auxiliary heating systems of 32,000 BTU/hr capacity each. One (1) heater will be located within each rear facing seat riser.  
- Each heater will include a three (3) speed blower, with fan speed and temperature controls accessible from both the driver and officer positions. Outlets will be located as described in "Outlets" below.  
**Air conditioning:**  
- Air conditioning system will cool entire cab area to 75 degrees Fahrenheit within 30 minutes, at 100 degrees Fahrenheit ambient temperature and 50 percent relative humidity. This performance will be verified by test results that will be submitted at the time of delivery (see Item 10.2 - Certifications).  
- Evaporator unit will be roof-mounted, in an aluminum enclosure, which will be painted white to match the cab roof. The enclosure will be tapered at the front to minimize the potential for damage from low-hanging tree branches. Evaporator units will be sized to meet performance requirements.  
**Outlets:**  
Heating and air conditioning systems will include outlets located as follows:  
- Heater outlets will be located below the rear facing seat riser and below the driver and officer positions.  
- Heating and air conditioning outlets will be located overhead in a common plenum that divides the front and rear sections of the cab. Two (2) outlets will be located in the front of the plenum, to direct air to the driver and officer positions. Six outlets will be mounted in the rear of the plenum, to direct air into the crew cab area.  
| 3.12| Miscellaneous Cab Equipment | An engraved or stamped plate showing the travel height, overall length, and GVWR of the vehicle will be installed in the cab within easy view of the driver.  
**Beverage holders:**  
Furnish and install four (4) Troy Products model AC-BH(S)95 single beverage holders. The location of beverage holders will be determined at the pre-construction stage. |           |                                         |
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<td>conference.</td>
<td>Entertainment radio:&lt;br&gt;• Furnish and install a high-quality AM/FM/Weatherband stereo radio with compact disc player and remote control unit with auxiliary port.&lt;br&gt;• Radio unit will be installed within reach of the officer's position.&lt;br&gt;• Furnish and install four (4) high-quality (Kenwood, Pioneer or approved equal) 5.25&quot; speakers. Two (2) speakers will be installed in the forward section of the cab, and two (2) in the crew cab.&lt;br&gt;• A flexible antenna will be furnished and installed in an open location on the cab roof.</td>
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<td>Glove box delete.</td>
<td>The passenger side dashboard area will have the glove box removed and will be modified to allow for the installation of a laptop computer across from the officer's seat. The glove box will be replaced with a painted sheet metal mounting platform/shelf. The platform/shelf will be designed to allow the computer mount to be mounted as low as possible so as to minimize blockage of the windshield. The platform/shelf will allow approximately 8.00&quot; of extension toward the officer. The unit will also lock in position at six (6) different points along the extension including the stowed position. The mounting provision will be designed to allow a Gamber Johnson, NotePad IV; Universal Mount will be installed in the cab, in front of the officer.</td>
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<td>Grab handles.</td>
<td>Furnish black, rubber covered grab handles in the following locations:&lt;br&gt;• On the driver side door post. Handle will be mounted vertically, between the dashboard and cab ceiling.&lt;br&gt;• On the inside of each crew cab door. The handle will be mounted horizontally, just below the bottom of the window frame.&lt;br&gt;• On the officer side of the dashboard. The handle will be mounted horizontally, just above the glovebox.&lt;br&gt;• The size and location of all grab handles will be confirmed at the pre-construction conference.</td>
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<td>Steering column.</td>
<td>Provide a six (6) position, tilt/telescopic steering column, and an 18&quot; diameter, padded steering wheel with center horn button.</td>
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<td><strong>Sunvisors:</strong></td>
<td>Two (2) smoked Lexan sunvisors, 8.75&quot; x 31.00&quot; long, shall be provided. The sunvisors shall be located above the windshield with one (1) mounted on each side of the cab.</td>
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<td><strong>Officer's Scuffplate and footrest:</strong></td>
<td>A bright aluminum treadplate scuffplate will be provided on the vertical surface of the area above the floor in front of the officer. The scuff plate will be approximately 10.00&quot; tall.</td>
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<td>A knurled aluminum grab handle with 3/16&quot; aluminum bar ends will be mounted to the face of the scuffplate to facilitate a footrest for the officer. Exact dimensions and placement TBD during pre-construction conference.</td>
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<td><strong>Windshield wipers/washers:</strong></td>
<td>• Provide electric windshield wipers (Dana or approved equal).</td>
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<td>• Provide electric windshield washers, with nozzles in wiper arms. Washer reservoir will be designed so that it can be refilled without tilting cab.</td>
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<td><strong>4.0 FIRE PUMP SYSTEM</strong></td>
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<td><strong>4.1 Booster Tank</strong></td>
<td>Booster tank will have a capacity of 500 gallons and be constructed of polypropylene plastic by United Plastic Fabricating, Incorporated. Tank joints and seams will be nitrogen welded inside and out. Tank will be baffled in accordance with NFPA Bulletin 1901 requirements. Baffles will have vent openings at both the top and bottom to permit movement of air and water between compartments. Longitudinal partitions will be constructed of .38&quot; polypropylene plastic and will extend from the bottom of the tank through the top cover to allow for positive welding. Transverse partitions will extend from 4.00&quot; off the bottom of the tank to the underside of the top cover. All partitions will interlock and will be welded to the tank bottom and sides. Tank top will be constructed of .50&quot; polypropylene. It will be recessed .38&quot; and will be welded to the tank sides and the longitudinal partitions. Tank top will be sufficiently supported to keep it rigid during fast filling conditions. Construction will include 2.00&quot; polypropylene dowels spaced no more than 30.00&quot; apart and welded to the transverse partitions. Two (2) of the dowels will be drilled and tapped (.50&quot; diameter, 13.00&quot; deep) to accommodate lifting eyes. A sump that is 8.00&quot; long x 8.00&quot; wide x 6.00&quot; deep will be provided at the bottom of the water tank.</td>
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<td>Sump will include a drain plug and the tank outlet. Tank will be installed in a fabricated cradle assembly constructed of structural steel. Sufficient crossmembers will be provided to properly support bottom of tank. Crossmembers will be constructed of steel bar channel or rectangular tubing. Tank will &quot;float&quot; in cradle to avoid torsional stress caused by chassis frame flexing. Rubber cushions, .50&quot; thick x 3.00&quot; wide, will be placed on all horizontal surfaces that the tank rests on. Stops or other provision will be provided to prevent an empty tank from bouncing excessively while moving vehicle. Mounting system will be approved by the tank manufacturer. Fill tower will be constructed of .50&quot; polypropylene and will be a minimum of 8.00&quot; wide x 14.00&quot; long. Fill tower will be furnished with a .25&quot; thick polypropylene screen and a hinged cover. An overflow pipe, constructed of 4.00&quot; schedule 40 polypropylene, will be installed approximately halfway down the fill tower and extend through the water tank and exit to the rear of the rear axle. The water tank will be extended to the rear of the truck, over the rear compartment. One (1) sleeve will be provided in the water tank for plumbing to the rear. Water level indicators: Described in Item 4.13 – Tank Water Level Display. The tank must be completely tested prior to installation in the vehicle (see Item 10.2 – Certification). Tank will include a lifetime warranty (see also Item 10.13 – Warranty Coverage). If the tank manufacturer determines that the tank problem has rendered the truck out-of-service, the tank manufacturer will dispatch a service technician WITHIN 48 HOURS (2 DAYS) to repair the tank (This time period is for the United States and Canada only).</td>
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<td>4.2</td>
<td>Pump Compartment</td>
<td>The pump compartment will be a modular assembly, fabricated separately from the hose body and side compartments, to allow for chassis flex. The pump compartment framework will be fabricated from structural steel tubing, angle and channel. This framework will support the fire pump and side running boards, and will be mounted to the chassis frame rails via rubber mounts in a four-point mounting pattern. An open storage compartment, approximately 14&quot;L X 68&quot;W, will be constructed at the top of the pump compartment. The booster tank fill tower will be located in this</td>
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<td>compartment.</td>
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<td>The pump compartment, pump, plumbing and operator panels will be removable from the chassis in a single assembly.</td>
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<td>4.3</td>
<td>Pump</td>
<td>Provide a 1,500 GPM, single-stage, midship-mounted centrifugal fire pump. *Waterous model “CSU” with “C20 Series” pump transmission (no exceptions). The pump will be installed so that it may be overhauled in the vehicle. The pump installation will comply with the most current NFPA 1901 requirements. Sacrificial zinc anodes will be installed in each water pump inlets to protect the pump from corrosion.</td>
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<td>Pump drive:</td>
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<td>o Pump shift engagement will be made by a two (2) position sliding collar, actuated pneumatically (by air pressure), with a three (3) position air control switch located in the cab. A manual back-up shift control will also be located on the driver’s side pump panel.</td>
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<td>o Two (2) indicator lights will be provided adjacent to the pump shift inside the cab. One (1) green light will indicate the pump shift has been completed and be labeled “pump engaged”. The second green light will indicate when the pump has been engaged, and that the chassis transmission is in pump gear. This indicator light will be labeled “OK to pump”.</td>
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<td>o Another green indicator light will be installed adjacent to the hand throttle on the pump panel and indicate either the pump is engaged and the road transmission is in pump gear, or the road transmission is in neutral and the pump is not engaged. This indicator light will be labeled “Warning: Do not open throttle unless light is on”.</td>
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<td>o The pump shift control in the cab will be illuminated to meet NFPA requirements.</td>
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<td>Transmission “lockup”: The chassis transmission will enter direct drive or “lockup” mode automatically whenever the cab-mounted pump shift control is activated.</td>
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<td>Thermal protection: *Furnish a Waterous “Overheat Protection Manager” (OPM). The OPM indicator light and test switch will be located at the operator’s pump panel.</td>
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<td>Certification: The fire truck manufacturer will certify that the fire pump has been tested and approved as described in Item 10.2 – Certification.</td>
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<td>4.4</td>
<td>Primer Pump</td>
<td>A Waterous electric pump priming system conforming to standards outlined in the current edition of NFPA 1901 shall be furnished with the apparatus. One (1) VPO electric motor driven rotary vane primer shall be provided. One (1) VAP vacuum activated priming valve shall be plumbed to the main pump. Two (2) momentary push-button controls shall be provided, with one located at the pump operator’s panel for the main pump and one located in the cab near the auxiliary pump controls. The push button control system control shall operate an electric priming motor and the priming valve shall automatically open during priming and close when the primer is deactivated. Pump cylinder will be made of aluminum alloy, hard anodized and Teflon coated, for corrosion resistance and long life. The primer will be built by the manufacturer of the fire pump. A control located at the pump control panel will operate the primer. When dry, the pump system will be capable of taking suction through 20 feet of hard suction hose and discharging water in not more than the time allowed by current NFPA 1901 standard. Also, rated capacity of the pump will be achieved at the lift stated in current NFPA 1901 standard table.</td>
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<td>4.5</td>
<td>Intake Valves</td>
<td>Provide one (1) Waterous “Monarch” Intake Valve (curbside). Controls: • Intake valve will be equipped with an electric actuator. • The electric actuator will be controlled by an individual two-way momentary switch, with directional pilot lights. • Control switches for valve will be installed on the operator’s pump panel. Intake relief valves: • Each intake valve will be equipped with a Waterous Intake Relief Valve. Relief valves will have a working range of 75 - 250 psig, and will be preset to 125 psig. • Relief valve pilot valve controls will be mounted at the respective pump panels, behind a hinged access door. • Relief valve outlet will terminate (below frame rails) in a 2.50” NST connection. Connection will be tagged with a permanent “DO NOT CAP” tag.</td>
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| Nr | Item                      | Requirements                                                                                                                                                                                                 | Complies? | List Deviations
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<p>| 4.6| Relief Valve              | Furnish a Waterous Discharge Relief Valve, sized appropriately for this application. Valve will be positive, quick acting, and include an instantaneous on/off control. When in the off position, the relief valve will functionally be removed from the system. When turned back to the on position, the relief valve will again monitor and maintain the previous pressure setting. Control for adjusting pressure will be elliptical shaped for positive grip. An easily removable pilot valve strainer will be provided and be accessible from the pump operator's panel. Two (2) indicator lights will be furnished, showing the position of the relief valve (amber for open and green for closed). |          |                  |
| 4.7| Auxiliary Heat Exchanger  | The auxiliary heat exchanger will be utilized to lower engine coolant temperature with fire pump discharge water. The heat exchanger will be cylindrical type and will be a separate unit. The heat exchanger will be installed in the pump or engine compartment with the control located on the pump operator's control panel. Exchanger will be plumbed to the master drain valve. Connections to the engine cooling system will be made via silicone hoses, as described in Cooling System section. |          |                  |
| 4.8| Plumbing                  | All inlet and outlet piping 3.00&quot; i.d. and smaller will be stainless steel, rated at 600 psi working pressure. Small diameter secondary plumbing (for example - drain lines), will be fabricated from stainless steel or brass pipe or tubing, or from rubber hose. All plumbing materials will be appropriate for the intended application. Flexible connections will be made with high pressure, stainless steel braided hose, sized as required for application. Plumbing manifold bodies will be ductile cast iron or stainless steel. Dielectric unions will be used for all connections to the pump. All threaded connections will be National Standard Thread (NST), unless otherwise specified. Victualic couplings will be used wherever vibration or chassis flex will affect the integrity of the plumbing, or where piping might need to be removed for service. All pressure gauge lines will be fabricated from heat and corrosion-resistant braided hose and fittings. All foam piping that is in carries or is in contact with foam concentrate or foam/water solution will be stainless steel. |          |                  |</p>
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<td>Drains:</td>
<td>• Each plumbing circuit will be equipped with a drain.</td>
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<td>• All drains will be plumbed to lowest point on unit.</td>
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<td>• Drain valves will be actuated from the pump panel.</td>
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<td>Tank refill:</td>
<td>• Provide a 1.50&quot; combination tank refill and pump recirculation line.</td>
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<td>• The tank fill line will be controlled by a quarter-turn full-flow ball valve, with a control at the pump operator’s panel.</td>
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<td>Garden hose connection:</td>
<td>• A female garden hose inlet connection will be installed at the pump operator’s panel, and plumbed directly to the fill tower of the booster tank.</td>
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<td>• The connection will be controlled by either a one-way check valve, or by a shutoff valve.</td>
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<td>Pavement cooler:</td>
<td>The engine exhaust will be cooled by water spray. Provide a 1/4-turn valve at the pump panel, and a spray nozzle adjacent to the exhaust outlet. The spray nozzle will be oriented parallel with the ground.</td>
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<td>Caps:</td>
<td>All inlet and discharge connections will be covered with chrome plated caps. Discharge caps will be self-venting. All caps will be secured to fittings with a chrome plated chain.</td>
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<td>4.9</td>
<td>Valves</td>
<td>All control valves will be Akron® (Akron Brass) 8000 series, Swing-Out® valves, with Tork-Lok®.</td>
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<td>All valves will be 2.50&quot;, unless otherwise specified.</td>
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<td>Tank fill:</td>
<td>1.50&quot;</td>
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<td>Valve controls:</td>
<td>See Operator’s Pump Panel – Controls below.</td>
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<td>4.10</td>
<td>Pump Inlet Connections</td>
<td>Main pump inlets: Provide two (2), six-inch (6&quot;) inlet connections, mounted 30 – 36 inches above ground level (one each side of vehicle). Suction connections will be a short as possible to allow for the installation of adapters without excessive overhang.</td>
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<td><strong>Operators pump panel connection:</strong></td>
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<td></td>
<td></td>
<td>• Removable die-cast zinc cathodic screen.</td>
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<td>• One (1) Task Force Tips AB3ST-NX Storz-style ball intake valve, 6.00&quot; to 5.00&quot; shall be provided. One (1) Task Force Tips model AO1ST 5.00&quot; locking end cap shall also be provided.</td>
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<td></td>
<td><strong>Curb side pump panel connection</strong></td>
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<td></td>
<td></td>
<td>• Removable die-cast zinc cathodic screen</td>
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<td>• One (1) Harrington model H30E-50-60NH/FTS, 6.00&quot; to 5.00&quot; elbow with 30 degree droop and full time swivel Storz style with one (1) Harrington model HBC-50 5.00&quot; Storz blind cap with chain will be provided.</td>
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<td><strong>Auxiliary inlet connection:</strong></td>
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<td>• One (1) 2.50&quot; NST auxiliary inlet connection will be provided on each side. The connections will be located as follows – one (1) at the lower left section of the operators pump panel, and one (1) at the lower right section of the curb side panel.</td>
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<td>• The valves for these connections will be located behind the respective pump panel. Valves will be actuated by a vertically-oriented ¼ turn locking handle, located next to the inlet.</td>
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<td>• Each connection will include a bronze inlet strainer, a chrome female inlet swivel, and a double-male adapter with chrome cap and chain.</td>
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<td>• The chrome end caps will have 2 ½ to 1 ½ reducers with 1 ½ chrome caps.</td>
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<td><strong>Inlet bleeder valves:</strong></td>
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<td>• A ¼&quot; ball-type bleeder valve will be provided at each side-mounted gated inlet.</td>
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<td>• Bleeder valve bodies will be located behind the respective pump panel. Valve shafts will protrude through the panel and will be actuated by lever controls.</td>
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<td>• Water that is discharged by the valves will be routed below the chassis frame rails.</td>
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|    | **Tank-to-pump:**                         | - The booster tank will be connected to the intake side of the pump with heavy duty piping and a quarter turn 3.00" full flow line valve with the control remotely located at the operator's panel. The tank to pump line will run straight (no elbows) from the pump into the front face of the water tank and down into the tank sump. A rubber coupling will be included in this line to prevent damage from vibration or chassis flexing.  
- The control on the pump panel will be "in" when the valve is open and "out" when the valve is closed.  
- A check valve will be provided in the tank to pump supply line to prevent the possibility of "back filling" the water tank. |           |                                        |
| 4.11 | **Pump Discharge Connections**            | The discharge manifold will be cast integrally with the pump body assembly. The manifold will provide a minimum of three (3) 3.50" openings. One (1) opening will be located on each side of the pump, with the third located at the top of the manifold.  
All discharge outlets will be controlled by valves located at the operator's pump panel.  
**Outlet trim rings:**  
The streetside and curbside pump panel side discharge connections and auxiliary inlet valves will be recessed behind the panels. Appropriately-sized holes will be provided in the pump panels to facilitate removal of the valves without removing the complete pump panel. The valve access holes will be trimmed with stainless steel trim plates.  
**Discharge outlets (curbside):**  
- One (1), 2.50" NST, with 30° droop adapter.  
- One (1), 3.00" NST:  
  - This outlet will include a 3.00" to 5.00" elbow with 30 degree droop and full time swivel storz-style fitting with end cap. (Task Force Tips AH1ST-NL). The fitting will include a built-in Task Force Tips A18 series relief valve. The relief valve will be set to 180 psi and will vent to the ground. Valve adjustment will be accessed through a small hinged chrome door located next to the valve on the curbside pump panel.  
  - The outlet will be braced to withstand the weight and vibration of five-inch (5") hose.  
  - The outlet will be mounted adjacent to the six-inch (6") suction |           |                                        |
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<td>connection as close to the ground as possible for safety and best ergonomics.</td>
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<td>- The final height of this outlet will be confirmed at the pre-construction conference.</td>
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<td>Discharge outlets (streetside):</td>
<td>- Two (2), 2.50&quot; NST, with 30° droop adapters.</td>
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<td>- Male garden hose connection (pressure fed by auxiliary pump), with ¼ turn shutoff valve and cap.</td>
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<td>Front discharge:</td>
<td>- One (1), 2&quot; NPT located at front streetside of unit, mounted on front bumper. Discharge will include a 90° swivel, terminating with 1.50&quot; NHT.</td>
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<td>- Furnish a One (1) Task Force Tips model AYLNF-NF GATED WYE 1.5 NH X 1.0&quot; NPSH LONG HANDLE for the front discharge.</td>
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<td>- Swivel and gated wye will be mounted so that the cab does not contact either component when fully tilted.</td>
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<td>- Two stainless steel rods will be installed in the bumper to limit travel of gated wye, to prevent contact with cab when in fully tilted position.</td>
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<td>- Automatic drains will be provided at all low points in front discharge plumbing.</td>
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<td>Rear discharge:</td>
<td>- Furnish one (2), 2.50&quot; connection.</td>
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<td>- Connection will be installed right side, just below hose bed.</td>
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<td>- Connection will be installed with proper clearance for spanner wrenches or adapters (10&quot; on center from respective hose bed side panel).</td>
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<td>Hose tray discharge:</td>
<td>- One (1) 2.00&quot; discharge will be plumbed to each running board hose tray. The discharge connections will be located so that the swivel (see item d. below), and hose bundle (see Part V, Section 5.b.) are completely contained within the hose tray.</td>
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<td>- The control valve at the pump operator's panel will be labeled &quot;ENGINE PROTECTION LINE.&quot;</td>
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<td>- Curbside discharge will be controlled on the curbside.</td>
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<td>- Each connection will terminate in a 1.50&quot; NST 90-degree swivel.</td>
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| Nr | Item            | Requirements                                                                                                                                                                                                 | Complies? | List Deviations
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<td><strong>Deluge:</strong></td>
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<td>• A 3.00&quot; deluge riser will be installed above the pump so that a monitor can be mounted and used effectively.</td>
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<td>• Piping will be rigidly braced and installed securely to withstand the forces generated when the line is charged.</td>
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<td>• The riser will be gated and controlled at the operator's pump panel.</td>
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<td><strong>Riser extension:</strong></td>
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<td>• Provide a TFT® XGA38PL-RL – 18&quot; &quot;Extend-a-Gun&quot; RC3 remote-controlled telescopic extension. The extension will include a position sensor that will activate the &quot;DO NOT MOVE VEHICLE&quot; cab light whenever the extension is in the raised position. The remote control switch will be installed at the operator's pump panel.</td>
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<td>• The riser extension will include provisions for the direct mounting of a TFT® Hurricane monitor.</td>
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<td><strong>Monitor:</strong></td>
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<td>• Provide a TFT® &quot;Hurricane RC&quot; model XFIH-E11A remote control monitor, with TFT® &quot;Master Stream&quot; M-ER-NJ series electric remote nozzle.</td>
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<td>• The monitor package will include the Y4E-RP Primary Monitor Operator Station, which will be installed at the pump operator's control panel.</td>
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<td>• Y4E-DISP monitor position display and Y4E-TXRX wireless remote control will also be furnished.</td>
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<td>• A custom mounting provision for the remote control will be fabricated from aluminum will be furnished and installed in the operator's compartment. Dimensions details and exact location to be determined during pre-construction conference.</td>
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<td>• The monitor will include a manual override feature in case of electrical system malfunction.</td>
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<td>• The monitor will not be painted.</td>
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<td>• The monitor, when in the stowed position will not be the tallest point of apparatus.</td>
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<td>• While in the fully extended position, monitor will be able to flow a stream of water parallel to the ground in a full 360 degree range of motion without obstruction from any portion of the apparatus.</td>
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<td>Crosslay compartment:</td>
<td>• Two (2), 2.00” connections will be plumbed to the crosslay compartment (see Item 5.12 – Crosslay Compartment). • Outlets will be equipped with 1.50” NST 90-degree swivels, located in the crosslay bed so that hose may be removed from either side of the vehicle.</td>
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<td>Discharge bleeder valves:</td>
<td>• A ¾” ball-type bleeder valve will be provided at each discharge 1.50” or larger. Automatic drain valves may be used for some outlets where appropriate. • Bleeder valves will be located in a horizontal line along the bottom of the operators' pump panel. Bleeder valve bodies will be located behind the pump panel. Valve shafts will protrude through the panel and will be actuated by lever controls. • Bleeder valves will be labeled to identify the discharge connection to which they are connected. • Water that is discharged by the valves will be routed below the chassis frame rails.</td>
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<td>4.12</td>
<td>Foam System</td>
<td>Furnish and install a foam proportioning system meeting the following requirements: System will be an on-demand, automatic proportioning, single point, direct-injection system suitable for all types of Class &quot;A&quot; foam concentrates. System maximum current draw will be no greater than five (5) amps. System operation will be based on direct measurement of water flow, and will remain consistent within the specified flows and pressures. The system will automatically balance and proportion foam solution at rates from 0.1% to 9.9% regardless of variations in water pressure and flow, up to the maximum rated capacity of the foam concentrate pump. Class A foam settings will be adjustable in 0.1% increments from 0.1% to 1.0%. Typical settings – 1%, 0.5% and 0.3%. An auxiliary foam pickup will be included that allows drafting from an external source. Foam proportion rate will be controlled by a microprocessor, which will monitor water flow and foam pump position. The system will allow operation from draft, hydrant, or relay at foam outputs of 0.01 – 10 gpm.</td>
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<td>The system will deliver the following minimum foam solution flow rates at accuracies that meet or exceed NFPA requirements, at a pump rating of 250 psi:</td>
<td>Yes/No</td>
<td>Exceptions/Alternatives*</td>
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<td>Foam Solution</td>
<td>Max. Water flow rate (GPM)</td>
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<td>6%</td>
<td>160</td>
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<td>3%</td>
<td>333</td>
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<td></td>
<td>1%</td>
<td>1000</td>
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<td>0.5%</td>
<td>1000</td>
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<td>0.2%</td>
<td>1000</td>
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<td>Controls:</td>
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<td>- The system will be equipped with a digital display located on the pump operator's panel. System information will be displayed by 0.375&quot; LED's that can display two (2) lines of sixteen characters each (32 total). The display will show:</td>
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<td></td>
<td></td>
<td>- Water flow rate</td>
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<td></td>
<td></td>
<td>- Foam percentage</td>
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<td>- Total foam and water used</td>
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<td>- Remaining foam gallons</td>
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<td>- Foam level warning (if level falls below ¼ tank).</td>
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<td>- Time remaining</td>
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<td>- Foam maintenance message, which will advise when system maintenance needs to be performed. The message will display intervals for cleaning the foam strainers, for cleaning the water strainers, and for changing the hydraulic oil.</td>
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<td>- Unit will display in English or metric units</td>
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<td>- Push-button style controls will be integrated into the panel to control:</td>
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<td>- System on/off</td>
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<td>- Foam concentration</td>
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<td>- Operational mode selection (automatic, manual, draft, calibration or flush).</td>
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<td>- The foam concentration control will have presets for various Class A foams. System will allow presets to be changed as desired. System will also allow complete manual adjustment of foam concentration as necessary.</td>
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<td><strong>Indicator lights:</strong></td>
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<td>Provide “SYSTEM ON” and “FOAM PUMP ON” indicator lights.</td>
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<td>Foam cell:</td>
<td>* The foam cell will preferably be integral with the polypropylene booster tank. Alternatively, a separate tank can be located at the front of the hose bed, space permitting.</td>
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<td>Foam cell:</td>
<td>* The cell or tank will provide a capacity of 25 gallons. If an integral cell is provided, it will not reduce the capacity of the booster tank.</td>
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<td>Foam cell:</td>
<td>* The cell or tank will include a screen in the fill dome, and a breather in the tank lid.</td>
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<td>Foam cell:</td>
<td>* A system of 1.00&quot; foam tank drains will be provided, integrated into the foam system strainer and tank-to-foam pump valve management system. The tank to pump hoses running from the tank(s) to the panel mounted strainer will be 1.00&quot; diameter. The foam system controller will have a mode that allows for a given foam valve to be opened at will. Flow of foam from the tank valve to the strainer will be usable as a tank drain mode.</td>
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<td>Foam cell:</td>
<td>* An adaptor will be supplied, that allows the 1.00&quot; foam intake screen to assembly to be used as a drain outlet. The standard supplied 1.00&quot; foam pick up hose will be attached to the screen assembly by way of the adapter. The drain mode will allow the operator to open and close the tank valve as required from the control head, to drain foam and re-fill foam containers through the connected hose, without foam spillage beneath the vehicle.</td>
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|    | Foam concentrate pump: | - The positive-displacement, linear-actuated foam concentrate pump will be powered by a hydraulic drive system. The drive system will be automatically activated whenever the fire pump is engaged.  
- The hydraulic reservoir will have a capacity of not less than four (4) gallons. Reservoir will be located so that it can be filled without spillage, and so the level can be checked without the need to remove access panels.  
- A hydraulic oil cooler will be provided.  
- The pump body will constructed from brass. The pump shaft will be fabricated from chrome plated stainless steel. The pump piston will be stainless steel.  
- Pump capacity will be not less than 10 gpm for all types of foam concentrates with a viscosity at or below 6000 centipoise, including protein, fluoroprotein, AFFFF FFFF or AR-AFFF.  
- The system will deliver only the amount of foam concentrate flow required, without returning foam to the storage tank. The pump will be self-priming, and will have the ability to draw foam concentrate from external supplies such as drums or pails. | Yes/No | Exceptions/Alternatives* |
|    | External foam concentrate connection: | - System will include an external foam pickup, to enable use of foam agents that may not be stored on the vehicle.  
- The external foam pickup will be designed to allow continued operation after the on-board foam tank is empty. The external foam pickup will be designed to allow the use of training foam or colored water.  
- The external foam pickup will consist of one (1) 1.00" female quick-disconnect swivel with chrome-plated plug and chain. The connection will be located on the driver side pump panel. A check valve will be installed at this connection.  
- A strainer with removable stainless steel screen will be installed ahead of the pump inlet port. The screen will be easily accessible for cleaning.  
- A 1.00" flexible foam pickup tube with 1.00" male quick disconnect will be provided and shipped loose. | |
<table>
<thead>
<tr>
<th>Nr</th>
<th>Item</th>
<th>Requirements</th>
<th>Complies?</th>
<th>List Deviations Exceptions/Alternatives*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>The foam system will be plumbed to the following (6) locations</td>
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<td></td>
<td></td>
<td>• Front bumper</td>
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<td></td>
<td></td>
<td>• Crosslays</td>
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<td></td>
<td>• Rear 2 ½ discharge</td>
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<td></td>
<td></td>
<td>• Left and right rear live lines</td>
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<td></td>
<td></td>
<td>• Front bumper line</td>
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<td>Remote tank fill:</td>
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<td>• The foam system will provide for remote filling of the foam tank from pails or drums located at ground level. Systems that require climbing up into the hosebed to fill the tank are not acceptable.</td>
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<td>• The system will include a shutoff switch that will stop the flow of foam concentrate when the tank is full.</td>
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<td>• The system will display a message advising the operator of the proper foam for the tank being filled.</td>
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<td>Flush mode:</td>
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<td>• The system will include a means to flush all foam concentrate with clear water. The flush circuit control logic will ensure that the foam tank supply valve is closed prior to opening the flush valve.</td>
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<td>• The flush valve control will be located at the system control panel. The valve will be electrically controlled and located as close to the foam tank supply valve as possible.</td>
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<td>• A manual flush drain valve will be located under the driver side running board. The valve will be labeled as to its function.</td>
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<td>4.13 Operator's Pump Panel</td>
<td>The main operator’s pump panel will be located on the streetside of the vehicle.</td>
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<td>• The operator panel will be completely removable in two (2) sections, for access to instruments and controls.</td>
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<td>• The upper section will contain sub-panels for the mounting of the pump pressure control device, engine instrumentation, electrical switches, and foam system controls. All sub-panels will be removable from the main pump panel.</td>
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<td>• The upper section will also contain all of the line pressure gauges.</td>
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<td>• The lower section of the panel will contain all valve controls, and the inlets, outlets, and drains listed in Items 4.10 and 4.11; and as detailed elsewhere in</td>
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<td>Nr</td>
<td>Item</td>
<td>Requirements</td>
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**Panel face:**
- The panel face will be fabricated from sheet aluminum, with a bonded black vinyl surface.
- A polished aluminum trim molding will be installed on each side of the panel.
- All penetrations through the pump panel will be trimmed with chrome trim rings or bezels.
- Panel will be divided into three (3) sections which provides for quicker / easier maintenance access.

**Panel configuration**
The pump panel will be organized in a logical and efficient manner, with an emphasis on sound ergonomics.

**Labels:**
- All gauges, valves, controls and test ports will be labeled with high quality metal tags with enamel color coding. Label colors will be determined at pre-construction conference.
- Tags will be attached to the pump panel via a chrome-plated bezel.

**Illumination:**
The operator's pump panel will be illuminated for night use.

**Engine instrumentation:**
Furnish the following engine instrumentation at the pump panel (all gauges will be VDO or approved equal, with internal illumination):
- Engine oil pressure gauge
- Engine coolant temperature
- Electric engine tachometer
- Voltmeter
- "LOW OIL PRESSURE" warning indicator light and audible alarm.
- "HIGH COOLANT TEMPERATURE" warning indicator light and audible alarm.
- "CHECK TRANSMISSION" warning indicator light.
- "CHECK ENGINE" warning indicator light.
- Air restriction indicator gauge, with "tell-tale."
<table>
<thead>
<tr>
<th>Nr</th>
<th>Item</th>
<th>Requirements</th>
<th>Complies? Yes/No</th>
<th>List Deviations Exceptions/Alternatives*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pressure/vacuum gauges:</td>
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<td></td>
<td></td>
<td>• All master and line pressure gauges will be “Class1” fluid filled, or approved equal.</td>
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<td></td>
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<td>• Gauge accuracy will meet or exceed ANSI B40.1 Grade A requirements.</td>
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<td></td>
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<td>• Temperature range -40°F to +160°F</td>
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<td>• Threaded gauge cases will be constructed from Zytel® nylon. Gauge will be retained by a single retaining nut. Gauge crystal will be molded plexiglass with a captive o-ring secured with a polished 304 stainless steel bezel.</td>
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<td></td>
<td></td>
<td>• Gauges will have white faces with black lettering, and will include an orange tipped pointer.</td>
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<td>• An adhesive-backed gauge mounting gasket will be provided.</td>
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<td>Hinged gauge panel:</td>
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<td></td>
<td></td>
<td>Gauge panel will be hinged on one side with quarter turn lift-and-turn latches on the opposing side. This is to allow access for future wiring and gauge repairs.</td>
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<td>Pump master gauges:</td>
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<td></td>
<td></td>
<td>• Provide two (2) “Class1” (or approved equal) liquid filled compound vacuum/pressure gauges, 4” diameter.</td>
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<td>• Gauge range will be 30’’ – 0 – 600psi</td>
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<td>• Provide one (1) for main suction pressure, and one (1) for main discharge pressure.</td>
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<td>Line pressure gauges:</td>
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<td></td>
<td></td>
<td>Provide eleven (11), “Class1” (or approved equal) liquid filled compound vacuum/pressure gauges, 2-1/2” diameter. Gauges will be provided for the following discharge connections:</td>
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<td></td>
<td></td>
<td>• Front Discharge</td>
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<td></td>
<td></td>
<td>• Crosslay #1</td>
<td></td>
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<td></td>
<td></td>
<td>• Crosslay #2</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• #1 Discharge (2-1/2”)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• #2 Discharge (2-1/2”)</td>
<td></td>
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<td></td>
<td></td>
<td>• #3 Discharge (2-1/2”)</td>
<td></td>
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<td></td>
<td></td>
<td>• #4 Rear Discharge (2-1/2”)</td>
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<td></td>
<td></td>
<td>• 5” discharge</td>
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</tbody>
</table>
| Nr | Item                        | Requirements                                                                 | Complies? | List Deviations
<table>
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<tbody>
<tr>
<td></td>
<td>Rear live line #1</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Rear live line #2</td>
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<tr>
<td></td>
<td>Monitor</td>
<td></td>
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<td>Gauge range will be 30° – 0 – 600psi</td>
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<td></td>
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<td>Each gauge will be installed as close to the corresponding valve/outlet control as is practical.</td>
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<td></td>
<td>Each gauge will be marked with a color-coded label. Label colors will be determined at the pre-construction conference.</td>
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<td>Miscellaneous instruments:</td>
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<td></td>
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<td>Air cleaner restriction gauge (tell-tale type)</td>
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<td></td>
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<td>Fuel level gauge</td>
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<td></td>
<td></td>
<td>Electric hourmeter (for pump)</td>
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<td></td>
<td>Tank water level display:</td>
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<td>Furnish a five (5) light booster tank water level display system (Innovative Controls or approved equal). The system will include a master display panel, two (2) slave displays, and two (2) Whelen® &quot;PSTANK&quot; LED display indicators. PSTANK LED lights will only illuminate when in pump mode.</td>
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<td></td>
<td></td>
<td>The master display will be mounted on the operator's pump panel. One (1) slave display will be mounted on the curbside panel, and one (1) will be mounted in the cab. The location of the cab display will be determined at the pre-construction conference.</td>
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<td></td>
<td></td>
<td>Each display will indicate tank water level by means of five (5) brightly-colored incandescent lamps. The lamps will have a rated life of not less than 15,000 hours. The water level will be displayed as follows</td>
<td></td>
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<tr>
<td></td>
<td>Tank Level</td>
<td>Light Color</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Full</td>
<td>Green</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>3/4</td>
<td>Yellow</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>1/2</td>
<td>Yellow</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1/4</td>
<td>Yellow</td>
<td></td>
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<tr>
<td></td>
<td>Refill</td>
<td>Red</td>
<td></td>
<td></td>
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<tr>
<td>Nr</td>
<td>Item</td>
<td>Requirements</td>
<td>Complies?</td>
<td>List Deviations</td>
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<td>- The “REFILL” light will start flashing when the water level drops below the “1/4” mark.</td>
<td>Yes</td>
<td>Exceptions/Alternatives*</td>
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<td></td>
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<td>- The display system will include a sensor that will determine tank level by measuring the electrical conductivity of the water in the tank. Float-style sensors are not acceptable. The water level sensor will be constructed of chemical-resistant PVC with a 3.00” diameter anodize flange. All internal components will be fully encapsulated.</td>
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<td>- All displays will be constructed from thermoplastic material; all internal components will be encapsulated. Lamps will be easily replaceable by unscrewing the lens covers.</td>
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<td></td>
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<td>- The displays will include a die-cast chrome-plated bezel. The display overlay will be scratch, solvent and UV-resistant.</td>
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<td>- Install the Whelen® “PSTANK” displays on each side of the cab, behind the crew cab door. Displays will be installed so that the top of the display is level with the top of the crew cab window. These displays will utilize the tank sensor noted in item 5. above, and will display tank level as follows:</td>
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<tr>
<td></td>
<td></td>
<td><strong>Tank Level</strong></td>
<td><strong>Light Color</strong></td>
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<tr>
<td></td>
<td></td>
<td>Full</td>
<td>Green</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>3/4</td>
<td>Blue</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>1/2</td>
<td>Amber</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>1/4</td>
<td>Red (steady)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Refill</td>
<td>Red (flashing)</td>
<td></td>
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<td></td>
<td></td>
<td><strong>Controls:</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>- All manual valves will include push/pull controls, with ¼ locking control rods. Push/pull controls will be capable of locking in any position.</td>
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<td></td>
<td></td>
<td>- Controls will include polished, chrome-plated zinc “tee” handles.</td>
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<td>- Provide chrome plated zinc control rod guides and universal joints. Control rods will slide freely, without binding or sticking.</td>
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<td>- The control rod guides will be removable from the face of the pump panel.</td>
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<td>Nr</td>
<td>Item</td>
<td>Requirements</td>
<td>Complies?</td>
<td>Exceptions/Alternatives*</td>
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<td><strong>Provide manual valve controls for:</strong></td>
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<td></td>
<td></td>
<td>- Front discharge</td>
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<td></td>
<td></td>
<td>- #1 discharge (2-1/2&quot;)*</td>
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<td>- #2 discharge (2-1/2&quot;)*</td>
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<td>- #3 discharge (2-1/2&quot;)*</td>
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<td>- #4 discharge (2-1/2&quot;)*</td>
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<td>- 5&quot; discharge*</td>
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<td></td>
<td></td>
<td>- Crosslay #1*</td>
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<td></td>
<td>- Crosslay #2*</td>
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<td></td>
<td>- Rear live line #1*</td>
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<td></td>
<td>- Rear live line #2*</td>
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<td></td>
<td>- Deluge/monitor*</td>
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<td></td>
<td></td>
<td>- Streetside engine protection line</td>
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<td></td>
<td>- Curbside engine protection line</td>
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<td></td>
<td></td>
<td>- Tank fill</td>
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<td></td>
<td></td>
<td>- Relief valve</td>
<td></td>
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<td></td>
<td></td>
<td>- Engine cooler</td>
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<td></td>
<td></td>
<td>- Pump cooler</td>
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<td></td>
<td></td>
<td>- Tank-to-pump (valve control will be &quot;in&quot; when in open position).</td>
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</table>

Controls will be marked with color coded labels. Label colors will be determined at the pre-construction conference.

<p>|      |      | <strong>Provide &quot;lever style&quot; drain valve controls for:</strong> |           |                         |
|      |      | - Front discharge |           |                         |
|      |      | - #1 discharge |           |                         |
|      |      | - #2 discharge |           |                         |
|      |      | - #3 discharge |           |                         |
|      |      | - #4 discharge |           |                         |
|      |      | - 5&quot; discharge |           |                         |
|      |      | - Crosslay #1 |           |                         |</p>
<table>
<thead>
<tr>
<th>Nr</th>
<th>Item</th>
<th>Requirements</th>
<th>Complies?</th>
<th>List Deviations</th>
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<tbody>
<tr>
<td></td>
<td>Crosslay #2</td>
<td></td>
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<tr>
<td></td>
<td>Rear live line #1</td>
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<tr>
<td></td>
<td>Rear live line #2</td>
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<tr>
<td></td>
<td>Curbside engine protection line (#1)</td>
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<tr>
<td></td>
<td>Streetside engine protection line (#2)</td>
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<tr>
<td></td>
<td>Pump</td>
<td></td>
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<tr>
<td></td>
<td><strong>Miscellaneous controls:</strong></td>
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</tr>
<tr>
<td></td>
<td>Manual pump shift</td>
<td></td>
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<tr>
<td></td>
<td>Primer pump control</td>
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<td>Electronic vernier-type engine throttle control</td>
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<td>Panel lighting control switch</td>
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<td>Monitor riser control switch</td>
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<td><strong>Panel lighting:</strong></td>
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<td></td>
<td>The pump panel will be illuminated by LED light fixtures that will be attached to a combination step/light shield.</td>
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<td>The step/light shield will be constructed from aluminum diamond-plate material, and will be as wide as the pump panel, and 8.00&quot;D. The step will be reinforced so that it can support the weight of a 250-pound person.</td>
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<td>Panel lighting will provide sufficient illumination to allow safe operation of all controls, gauges, switches, labels, and instruments. External illumination will be not less than five (5) foot-candles on the face of each device.</td>
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<td>One (1) pump panel light fixture will illuminate when the pump is placed into gear from inside the cab. The remaining lights will be activated by a switch on the pump panel.</td>
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<td>Provide one (1) Whelen 50SCAOCCR light fixture, with chrome flange. This light will illuminate the running board area, and will be activated by the pump panel light switch. (See also Item 7.10 – Step Lights)</td>
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<td><strong>Miscellaneous panel fixtures:</strong></td>
<td>- Test ports:</td>
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<td></td>
<td>- Furnish test ports that connect to the pump inlet and discharge manifolds. The test ports will be located on the pump panel.</td>
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<td>- Test ports will terminate in female .25&quot; NPT fittings, with polished stainless steel plugs. Each port will be marked with a label.</td>
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<td><strong>Microphone/speaker compartment</strong></td>
<td>- Furnish a microphone and speaker compartment adjacent to the pump operator's panel. The compartment will be 12.00&quot;H X 9.00&quot;W X 6.00&quot;D.</td>
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<td>- The compartment will include a louvered, polished stainless steel door with pull/turn latch.</td>
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<td><strong>Disclosure:</strong></td>
<td>The design, construction, and layout of the operator panel, including component location options, must be disclosed in your bid response.</td>
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<td>4.14</td>
<td><strong>Curbside Panel</strong></td>
<td>A pump connection panel will be located on the curbside of the vehicle.</td>
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<td>This panel will include all of the inlet and outlet connections and drains listed in Items 4.10 and 4.11, and the control for the curbside engine protection line.</td>
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<td><strong>Panel face:</strong></td>
<td>- The panel face will be fabricated from sheet aluminum, with a bonded black vinyl surface.</td>
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<td>- A polished aluminum trim molding will be installed on each side of the panel.</td>
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<td>- The panel face will be secured to the pump compartment framework by means of lift-and-turn fasteners.</td>
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<td>- All penetrations through the pump panel will be trimmed with chrome trim rings or bezels.</td>
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<td><strong>Panel configuration:</strong></td>
<td>The pump panel will be organized in a logical and efficient manner, with an emphasis on sound ergonomics.</td>
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</table>
| Nr | Item | Requirements | Complies? | List Deviations
|----|------|-------------|-----------|------------------
<p>|    |      | <strong>Labels:</strong> |           |                  |
|    |      | • All valves, controls and test ports will be labeled with high quality plastic tags, with enamel color coding as noted. |           |                  |
|    |      | • Tags will be attached to the pump panel via a chrome-plated bezel. |           |                  |
|    |      | <strong>Panel lighting:</strong> |           |                  |
|    |      | • The panel will be illuminated by LED light fixtures that will be attached to a combination step/light shield. |           |                  |
|    |      | • The step/light shield will be constructed from aluminum diamond-plate material, and will be as wide as the panel, and 8.00&quot;D. The step will be reinforced so that it can support the weight of a 250-pound person. |           |                  |
|    |      | • One (1) pump panel light fixture will illuminate when the pump is placed into gear from inside the cab. The remaining lights will be activated by a panel light switch on the (streetside) operator's pump panel. |           |                  |
|    |      | • Provide one (1) Whelen S5CA0CCR light fixture, with chrome flange. This light will illuminate the step area, and will also be activated by the switch noted in item 3. above. (See also Item 7.10 — Step Lights) |           |                  |
| 4.15 | <strong>Pump and Roll System</strong> | A hydraulic driven 2.50&quot; suction, 2.50&quot; discharge centrifugal pump shall be provided for mobile fire attack. The pump shall be a Darley 2.5 AGEH pump. The pump shall have a gear type hydraulic motor. The pump case shall be vertically split for removal and service of the impeller. A viton, carbon/ceramic shaft seal shall be provided. The pump shaft and wear ring shall be stainless steel. A variable displacement piston type hydraulic pump supplying the hydraulic motor on the water pump shall be supplied. The displacement of the hydraulic pump shall be controlled by a fixed orifice type, load sensing, hydraulic circuit. The hydraulic system shall have a properly sized reservoir, cooler, filter(s) and accessory components. The components shall be mounted in the vehicle body to facilitate routine maintenance operations. The hydraulic drive design shall be certified by manufacturer of the primary hydraulic components as suitable for the intended use and duty cycle. All components of the water pump and drive system shall be readily available on the domestic hydraulic market (USA). An independent 2.50&quot; tank to pump line shall be provided. The valve shall automatically open when the pump is turned on. |           |                  |</p>
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<th>Nr</th>
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<th>List Deviations Exceptions/Alternatives *</th>
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<td>3.00” digital pressure gauges shall be provided one in the cab and one at the pump panel for the mobile attack pump.</td>
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<td><strong>PUMP CONTROLS</strong></td>
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<td>There shall be a PTO switch and indicator light in the cab for activation of the pump drive. To control the pump speed, ramping switches shall be provided in the cab and at the pump panel for the operation of the pump speed hydraulic control valve. These ramping switches shall allow for the pump speed to set and maintained. Whenever the PTO switch is returned to the off position, a relay or suitable arrangement shall return the pump speed control valve to the PUMP OFF position.</td>
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<td><strong>PUMP PERFORMANCE:</strong></td>
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<td>• 0 gpm @ 165 psi - pressure never to exceed 165 psi regardless of engine speed</td>
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<td>• 250 gpm @ 125 psi - at engine speed of 900 rpm and above</td>
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<td>• Minimum pressure of 65 psi at engine idle speed</td>
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<td>The mobile attack pump shall supply following discharges:</td>
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<td>Front Bumper</td>
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<td>Garden Hose Outlet</td>
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<td>#1 and #2 Crosslays</td>
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<td>#1 and #2 Rear Live Lines</td>
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<td>Rear 2 ½ Discharge</td>
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5.0 **PART VI – PUMPER BODY AND COMPARTMENTATION**

5.1 **Dimensions**

The pumper body will be sized to accommodate the compartmentation and hose storage requirements specified below; while meeting the overall length restrictions.

Disclose any alternative compartment configurations and options in your bid response.

5.2 **Construction**

The body and side compartments will be a unitized design; constructed of .125” 5052-H32 aluminum sheet (31,000 – 36,000 psi tensile strength).

Side compartments will be integral with rear fenders. Provide semicircular wheelwell liners.

The body will be designed and constructed specifically for this application, and will meet the twenty year lifespan requirements without sagging, deforming, corroding, or experiencing any other type of deterioration other than normal wear and tear.
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<td>Installation:</td>
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<td>- The body will be mounted to the truck frame via a subframe system, which will be secured to the truck frame via .375&quot; thick vertical steel angle. The steel angle will be secured by .625&quot; diameter bolts.</td>
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<td>- Horizontal steel angle will be welded and gusseted to the vertical members. Horizontal members will cantilever to the outside extents of the pumper body.</td>
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<td>- A structural steel frame will be mounted to the supports described in 1. and 2. above, by means of neoprene elastomeric isolators.</td>
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<td>- The isolators will be adequately sized for the application, and will have proven viability in automotive applications. The isolators will be of a fail-safe design, and will allow for all necessary body movement.</td>
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<td>- The isolators will be installed in a three (3) point mounting pattern, to reduce the amount of natural chassis flex that is transmitted to the body.</td>
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<td>- The substructure described above will be designed to support a 500-pound rating per compartment.</td>
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<td>5.3</td>
<td>Compartments (General Requirements)</td>
<td>Construction:</td>
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<td>- Compartments will be the “sweep out” type (floor will be higher than compartment door lip), with bright finish stainless steel thresholds.</td>
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<td>- All screws and bolts that protrude into compartment interiors will be fastened with acorn nuts with thread lock applied to bolts. No protruding threads will be allowed in compartment interiors.</td>
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<td>- The top of each side compartment will be overlaid with bright aluminum treadplate. The treadplate will flange over the front, side and rear edges of the compartment. The corners formed where the flanges meet will be “TIG” welded.</td>
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<td>- The forward facing exterior compartment walls will be covered with bright aluminum treadplate.</td>
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<td>- All compartment exterior surfaces designated as stepping, standing, and/or walking areas will comply with the average slip resistance requirement of NFPA 1901, Section 13-7.3.</td>
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<td>- Each compartment will be ventilated by means of one (1) or more sets of louvers that will be stamped directly into one of the compartment walls. “Add-on” louver panels are not acceptable.</td>
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<td>- Drip protection will be provided above all compartment doors by means of</td>
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<td>bright aluminum extrusions, formed bright aluminum treadplate, or polished stainless steel.</td>
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<td>- All compartment joints will be sealed watertight, and each compartment will include baffled seep holes.</td>
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<td>- Rear compartment door opening will be sealed with closed cell, automotive style double weatherstripping. Weather strip material will be attached to the full outer perimeter of the door and to the entire door opening.</td>
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<td>- Furnish and install gray &quot;Turtle Tile&quot; (or approved equal) in the bottom of each compartment, and on all shelves.</td>
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<td>- Compartment interiors will be painted with a gray splatter or Zolotone® finish.</td>
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<td><strong>Dimensions:</strong></td>
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<td></td>
<td>- All compartment interior dimensions noted in this specification are +/- 1.00”</td>
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<td>- Compartment depths are &quot;clear depths&quot; i.e., measured with the compartment door closed.</td>
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<td><strong>Compartment doors:</strong></td>
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<td>- Roll-up style compartment doors will be installed on each of the six (6) side compartments. The doors will be double-faced, constructed from aluminum and painted one color to match the lower portion of the body (Amdor or approved equal).</td>
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<td>- Lath sections will be an interlocking rib design and will be individually replaceable without complete disassembly of door.</td>
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<td>- Door(s) will be constructed using 1.00” extruded double wall aluminum slats which will feature a flat smooth interior surface to provide maximum protection against equipment hang-up. The slats will be connected with a structural driven ball and socket hinge designed to provide maximum curtain diaphragm strength. Mounting and adjusting the curtain will be done with a clip system that connects the curtain to the balancer drum allowing for easy tension adjustment without tools. The slats will be mounted in reusable slat shoes with positive snap-lock securement.</td>
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<td>- Each slat will incorporate weather tight recessed dual durometer seals. One (1) fin will be designed to locate the seal within the extrusion. The second will serve as a wiping seal which will also allow for compression to prevent water ingress.</td>
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<td>- The doors will be mounted in a one (1)-piece aluminum side frame with recessed side seals to minimize seal damage during equipment deployment. All seals including side frames, top gutters and bottom panel are to be manufactured utilizing non-marring materials.</td>
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<td>Yes/No</td>
<td>Exceptions/Alternatives*</td>
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<td>Bottom panel flange of roll-up door will be equipped with two (2) cut-outs to allow for easier access with gloved hands.</td>
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<td>A polished stainless steel lift bar with locking key latches to be provided for each roll-up door. The lift bar will be located at the bottom of door with striker latches installed at the base of the side frames. Side frame mounted door strikers will include support beneath the stainless steel lift bar to prevent door curtain bounce, improve bottom seal life expectancy and to avoid false door ajar signals.</td>
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<td>All injection molded roll-up door wear components will be constructed of Type 6 nylon.</td>
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<td>To conserve space in the compartment(s), the spring roller assembly will not exceed 3.00&quot; in diameter. A roll-up door that retracts below the compartment ceiling (garage door style) will not acceptable.</td>
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<td>The header for the roll-up door assembly will not exceed 4.00&quot;.</td>
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<td>A heavy-duty magnetic switch will be used for control of &quot;open compartment door&quot; warning lights.</td>
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<td>All mechanical components of the door will be warranted to be free from defects in materials and workmanship for the lifetime of the vehicle. All parts covered under this warranty will be to the original owner.</td>
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<td>All locks will be keyed alike, and keyed to match the cab doors. Key code will be determined at pre-construction conference.</td>
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<td>Shelves:</td>
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<td>All shelves will be fabricated from .125&quot; sheet aluminum, with reinforcement as required. Shelves will have 2.00&quot; sides.</td>
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<td>Each shelf will provide a 250 pound capacity</td>
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<td>All shelves will be fully adjustable, and mounted to extruded aluminum &quot;Unistrut&quot; type channel with &quot;Unistrut&quot; hardware.</td>
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<td>Door Gards:</td>
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<td>Six (6) compartment doors will include a guard designed to protect the roll-up door from damage when in the retracted position and contain any water spray. The guard will be fabricated from stainless steel and installed D1, D2, D3, P1, P2 &amp; P3.</td>
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<td>Air bottle compartments:</td>
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<td>Two (2) air bottle compartments will be provided; one (1) on each side of the body forward of the rear axle. Each air bottle compartment will be of adequate size to accommodate two (2) air bottles. The compartment floor will be rubber</td>
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|    |      | lined, and will include a drain hole.  
|    |      | • A stainless steel, full width door with a chrome plated latch will be provided to contain the air bottles. A dielectric barrier will be provided between the door hinge, hinge fasteners and the body sheet metal.  
|    |      | • A total of two (2) inserts will be provided for the double wide air bottle storage compartments. The inserts will be formed in a "W" shape to prevent the bottles from shifting during transit.  
|    |      | • An additional single air bottle compartment will be provided aft the rear axle on the curbside  
|    |      | Extender storage  
|    |      | • One extender compartment will be provided, on the drivers side of the body aft of the rear axle. The extender compartment will be in the form of a square tube (8.25" minimum) and of adequate depth to accommodate different size extinguishers.  
|    |      | Extender storage (cont’d):  
|    |      | • The compartment floor will be rubber lined and will include a drain hole. A stainless steel door with a chrome plated latch will be provided to contain the air bottle. A dielectric barrier will be provided between the door hinge, hinge fasteners (screws) and the body sheet metal.  

5.4 Streetside Compartments  

| First vertical:  
| 34.50"W X 68.00"H (30.00W X 63.00"H clear door opening). Compartment will be 26.00"D in the lower 26.00" and 12.00"D in the upper portion.  
| Single roll-up door  
| Compartment interior will be fully open from floor to ceiling. No permanent dividers will be installed between the upper and lower sections.  
| Two (2) adjustable shelves will be installed in the upper section of compartment, and one (1) in the lower section.  

| Horizontal:  
| 66.5"W X 33"H X 12"D (59.5"W X 28.25"H clear door opening).  
| Single roll-up door.  
| One (1) adjustable shelf.  

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<td>Yes/No</td>
<td>Exceptions/Alternatives*</td>
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<tr>
<td>Rear vertical:</td>
<td>47.50&quot;W X 78.00&quot;H X 12.00&quot;D (46.00&quot;W X 63.00&quot;H clear door opening). A section of this compartment (directly behind the rear wheels) will be 26.00&quot; deep for the first 31.50&quot; of width X 26.00&quot; of height. The rear of this section will open into the tailboard compartment.</td>
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<td></td>
<td>Single roll-up door</td>
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<td></td>
<td>Provide a vertical long handle tool divider. Install divider approximately 16.00&quot; from the right side of compartment wall.</td>
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<td></td>
<td>Compartment interior will be fully open from floor to ceiling. No permanent dividers will be installed between the upper and lower sections.</td>
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<tr>
<td></td>
<td>Two (2) adjustable shelves will be installed in the upper section of compartment.</td>
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<td>5.5</td>
<td>Curbside Compartments</td>
<td>First vertical: 34.50&quot;W X 68.00&quot;H (30.00W&quot; X 63.00&quot;H clear door opening). Compartment will be 26.00&quot;D in the lower 26.00&quot; and 12.00&quot;D in the upper portion.</td>
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<td></td>
<td>Single roll-up door</td>
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<td></td>
<td>Compartment interior will be fully open from floor to ceiling. No permanent dividers will be installed between the upper and lower sections.</td>
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<td></td>
<td>Two (2) adjustable shelves will be installed in the upper section of compartment, and one (1) in the lower section.</td>
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<td>Horizontal:</td>
<td>66.50&quot;W X 33.00&quot;H X 12.00&quot;D (59.50&quot;W X 28.25&quot;H clear door opening).</td>
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<td></td>
<td>Single roll-up door</td>
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<td></td>
<td>Provide a single, swing-out tool board, constructed from aluminum pegboard. The toolboard will be retained by a spring-loaded latch.</td>
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<td></td>
<td>Aluminum pegboard will also be installed on the rear wall of the compartment.</td>
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<tr>
<td>Rear vertical:</td>
<td>47.50&quot;W X 68.00&quot;H X 12.00&quot;D (46.00&quot;W X 63.00&quot;H clear door opening). A section of this compartment (directly behind the rear wheels) will be 26.00&quot; deep for the first 31.50&quot; of width X 26.00&quot; of height.</td>
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<td></td>
<td>Single roll-up door</td>
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<tr>
<td></td>
<td>Compartment interior will be fully open from floor to ceiling. No permanent dividers will be installed between the upper and lower sections.</td>
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</table>
| Nr | Item                  | Requirements                                                                                                                                                                                                 | Complies? | List Deviations
|----|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------------
<p>|    |                       | - Two (2) adjustable shelves will be installed in the upper section of the compartment, and one (1) adjustable shelf will be installed in the lower section of the compartment.                        |           |                   |
|    |                       | - Provide three marine-grade 12 VDC power points on the left side of this compartment.                                                                                                                          |           |                   |
| 5.6| Tailboard Area        | <strong>Tailboard:</strong>                                                                                                                                                                                                 |           |                   |
|    |                       | - The tailboard will be approximately 68&quot;W X 20&quot;D between the compartments, and will extend approximately four inches (4&quot;) beyond the end of each rear vertical compartment.                          |           |                   |
|    |                       | - The tailboard will be fabricated from .125&quot;, bright finish aluminum treadplate, and supported by a subframe fabricated from structural steel.                                                                    |           |                   |
|    |                       | - The rear edge of the tailboard will be formed in a continuous flange (&quot;down and in&quot;).                                                                                                                        |           |                   |
|    | Tailboard compartment | - Tailboard compartment will meet all of the general requirements listed in Items 5.2 and 5.3 above.                                                                                                       |           |                   |
|    |                       | - <strong>Dimensions:</strong> 40&quot;W X 34&quot;H X 26&quot;D (34.5&quot;W X 29&quot;H clear door opening).                                                                                                                                   |           |                   |
|    |                       | - Double doors – diamond plate                                                                                                                                                                                  |           |                   |
|    |                       | - A louvered, removable access panel will be installed on the back wall of the compartment, for access to fuel tank level sender (if necessary).                                                                 |           |                   |
|    |                       | - The left side of this compartment will open into the lower portion of the streetside rear vertical compartment.                                                                                              |           |                   |
|    |                       | - One (1) full-width adjustable shelf will be installed in the upper portion of the compartment.                                                                                                              |           |                   |
| 5.7| Trim                  | The entire rear surface of the body between the rear compartments, and below the hosebed, will be covered with bright aluminum treadplate.                                                                      |           |                   |
|    |                       | The exterior rear wall of each rear vertical compartment (below the hose bed) will be lined with bright finish aluminum treadplate. The portion of the compartment adjacent to the hosebed will be covered with polished stainless steel. |           |                   |
| 5.8| Intermediate Step     | A step will be located between the tailboard and the top of the body, to provide safe access to the hose bed.                                                                                                  |           |                   |
|    |                       | The step will be fabricated from bright aluminum treadplate, and will be recessed into the rear body just above the tailboard compartment.                                                                     |           |                   |
|    |                       | The step will be approximately 72&quot;W X 10&quot;D                                                                                                                                                                |           |                   |</p>
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<th>List Deviations</th>
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<tr>
<td>5.9</td>
<td>Running Boards</td>
<td>Furnish and install one (1) running board on each side of the vehicle, for access to the pump panel and crosslay compartments (See Item 5.12 – Crosslay Compartment).</td>
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<td>Running boards will be fabricated from .125” bright aluminum treadplate.</td>
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<td>Each running board will be supported by a frame constructed from 2.00” square steel tubing and structural steel channel. This frame will be bolted to the pump compartment substructure.</td>
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<td>Running boards will be 12.75” deep, and spaced .50” from the pump panel.</td>
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<td>A splash guard will be installed above each running board.</td>
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<td><strong>Hose trays:</strong></td>
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<td>• Each running board will include a recessed hose tray.</td>
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<td>• Tray capacity will be 20’ of 1.50” single jacket hose in the front section; and 25’ of 5.00” hose in the rear section (approximately 36” X 9” X 11”D). The hose will be connected to the discharge swivel described in Item 4.11 – Hose Tray Discharge above.</td>
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<td>• The bottom or “floor” of each tray will be constructed from perforated aluminum. “Dri-Dek” will be installed on the floor of each tray.</td>
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<td>• Each tray will include a divider and a bright aluminum treadplate cover, with stainless steel hinges, and Velcro straps. The treadplate cover will cover only the front section of the hose tray.</td>
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<td>5.10</td>
<td>Miscellaneous Body Features</td>
<td><strong>Fender crowns:</strong></td>
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<td>• Furnish and install polished stainless steel fender crowns at the rear wheelwell openings.</td>
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<td>• Outside corner of fender crowns will be radius ed, and crowns will extend beyond the sidewall of the outside rear tires.</td>
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<td>• A rubber welting will be installed between the body and the fender crown to seal the seam.</td>
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<td>• A dielectric barrier will be provided between the fender crown fasteners and the fender.</td>
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<td><strong>Folding steps:</strong></td>
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<td>Furnish eight (8) Steps. The steps will be a bright finished, non-skid luminescent folding type. The luminescent coating is rechargeable from any light source and can hold a charge for up to 24 hours. The step can be used as a hand hold with two openings wide enough for a gloved hand.</td>
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<td>Complies?</td>
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<td>• Three (3) on the front of each side compartment, for access to the hose bed area (total - 6).</td>
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<td>• One (1) step will be mounted on the inside of each the rear of the body extension for access to the intermediate step (total - 2).</td>
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<td><strong>Grab rails:</strong> Provide nine (9) grab rails, in the locations noted below.</td>
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<td>• Grab bars will consist of knurled aluminum or stainless steel tubes, or stainless steel tubes with rubber inserts. Grab bars will installed with chrome bar ends.</td>
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<td>• Install one (1) 24&quot; long bar on each side of the body, at the front of each side compartment, facing outwards (for access to the running board area).</td>
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<td>• Install one (1) at each side of the body extension, extending from approximately 24&quot; above the tailboard to the top of the hose bed. (total - 2).</td>
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<td>• Install two (2) 18 inch long bars to the rear of the cab adjacent to the crosslay bed (one each side)</td>
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<td>• Install two (2) 18 inch long bars at the rear of the tailboard just below the hosebed</td>
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<td>• Install one (1) bar across the top of the hosebed rear supporting crossbar Exact size and location of all bars to be determined during pre-construction conference</td>
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<td><strong>Mud guards:</strong> Furnish and install mud guards behind all tires.</td>
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<td><strong>Rub rails:</strong> The lower edge of each side compartment will be trimmed with a bright finish extruded aluminum rub rail.</td>
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<td>• Rub rails will be 2.00&quot; – 2.25&quot; high with 1.25 – 1.50&quot; flanges. Flanges will be turned outward for rigidity.</td>
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<td>• Rub rails will be easily replaceable in case of damage.</td>
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<td><strong>Pull-Out Trays:</strong> There will be two (2) slide-out trays with 2.00&quot; sides and a capacity of 500 pounds provided. Capacity rating will be in the extended position. Slides will be General Device ball bearing type for ease of operation and years of dependable service. Automatic locks will be provided for both the &quot;in&quot; and &quot;out&quot; positions. The trip</td>
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<td>mechanism for it will be located at the front of the tray for ease of use with a gloved hand. Tray location will be 1 in D1 and also 1 in D3. Heavy-duty steel angle iron assembly will support the body under the compartment floor. It will be attached to the chassis frame for load transfer and to reduce stress on body.</td>
<td>Yes/No</td>
<td>Exceptions/Alternatives*</td>
</tr>
<tr>
<td>5.11</td>
<td>Hose Bed (General Requirements)</td>
<td>The upper one-quarter of the pumper body (the portion over the booster tank and drivetrain) will form a bed for the storage of fire hose. <strong>Construction:</strong> - The hose bed will be fabricated from .125&quot; 5052-H32, 38,000 psi aluminum sheet. - The top and rear edges of the hose bed side panels will include a double-break for rigidity. - The upper portion of the rear compartment exterior walls will be covered with polished stainless steel sheet to prevent damage to painted surfaces when hose is removed. <strong>Overall dimensions:</strong> - The hose bed will be designed to provide storage as described in e. below. Bed will be a minimum of 68.00&quot; wide. - All listed dimensions are approximate and may be changed (within certain limitations) to fit production requirements. - Hose bed layout, dimensions, and construction details will be discussed during the Pre-Construction conference. <strong>Hose bed floor:</strong> - The hose bed floor will be constructed from aluminum extrusions riveted into a one (1) piece grid. Extrusions will be approximately 4.50&quot;W X .50&quot; thick, and will be spaced appropriately to insure proper hose ventilation. - Extrusions will incorporate an anodized, radiused and ribbed or corrugated top surface. - The hose bed floor will be completely removable, and will include a provision for the installation of adjustable dividers. - The dividers will be constructed from .125&quot; aluminum sheet, fitted and welded into a slotted, radiused extrusion along the top, bottom and rear edges. - The dividers will bolt in, via stainless steel fasteners. Acorn nuts will be used to cover any exposed threads.</td>
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| Nr | Item               | Requirements                                                                                                                                                                                                 | Complies? | List Deviations
|----|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------
| 5.12 | **Hose Bed Layout** | The hose bed will be divided as follows (all references to “streetside” or “curbside” are as viewed from rear of vehicle):  
- **Section #1**  
  - Section #1 will be located at the streetside of hose bed.  
  - This section will be pre-plumbed with 2 inch plumbing ending in a 1 ¼ fitting  
  - This section will be divided into two (2) equal size compartments (top lay and bottom lay) by a hinged, full-length horizontal .25” aluminum divider. The divider will be supported at each end and will include a latch. A stop will be installed in the lower section only. The stop will be located 62” from the rear of the hose bed.  
  - The divider will hinged on the streetside  
  - The upper division of the compartment will accommodate 200’ of 1-3/4” synthetic hose; the lower section will accommodate 100’ bundle of 1-3/4” synthetic hose.  

- **Section #2**  
  - Section #2 will be identical to section 1 and just to the right of section 1.  
  - This section will be pre-plumbed with 2 inch plumbing ending in a 1 ½ fitting  
  - This section will be divided into two (2) equal size compartments (top lay and bottom lay) by a hinged, full-length horizontal .25” aluminum divider. The divider will be supported at each end and will include a latch. A stop will be installed in the lower section only. The stop will be located 62” from the rear of the hose bed.  
  - The divider will hinged on the streetside  
  - The upper division of the compartment will accommodate 200’ of 1-3/4” synthetic hose; the lower section will accommodate 2 100’ foot bundles of single jacket 2 1/2 synthetic hose.  

- **Section #3**  
  - Section #3 will be located to right of center and Section #2.  
  - This section will accommodate 700’ of five-inch (5”) hose.  

- **Section #4**  
  - Section #4 will be located to right of Section #3, and to the right of center.  
  - This section will not be divided and will accommodate 800’ of 2-1/2” synthetic hose.  | Yes/No | Exceptions/Alternatives*
<table>
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<th>Nr</th>
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<th>List Deviations Exceptions/Alternatives</th>
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<td>Section #5</td>
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<td>- Section #5 will be located at curbside of the hose bed above the storage compartment for the hard suction hose.</td>
<td>Yes/No</td>
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<td>- This section will accommodate 200' of 2 ½&quot; hose</td>
<td>List Deviations</td>
<td>Exceptions/Alternatives*</td>
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<td>Crosslay (transverse) compartment:</td>
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<td>- This compartment will consist of two (2) sections, and will be located above the pump compartment.</td>
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<td>- Provide one (1) 2.00&quot; NPT X 1.50&quot; NST swivel connection in each section.</td>
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<td>- Each section will accommodate 200' of 1-3/4&quot; double-jacketed hose.</td>
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<td>- The crosslay divider will be fabricated from .25&quot; aluminum sheet and will provide side-to-side adjustment. The divider will be unpainted, with a &quot;DA&quot; finish.</td>
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<td>- Vertical, stainless steel scuffplates will be provided at each end of each crosslay bed.</td>
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<td>- Crosslay bed floor covering will be fabricated from perforated brushed aluminum sheet. Flooring will be removable.</td>
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<td>- Crosslay bed floor height will be as low as possible; not to exceed 75”.</td>
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<td>- Each end of crosslay compartment will be covered with a drop cover made from high quality red vinyl material. Drop covers will be secured with &quot;Velcro&quot; type retaining straps.</td>
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<td>- Provide smooth, radiused edges wherever hose may make contact.</td>
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<td>5.13</td>
<td>Hose Bed Cover</td>
<td>The hose bed cover will be a two (2) piece design, constructed from .125&quot; bright-finish aluminum treadplate with appropriate bracing. Cover must be able to support the weight of a 250-pound person.</td>
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<td>Hose bed cover will enclose the entire hose bed (except crosslays).</td>
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<td>The cover will be divided in the center, and hinge at each outside edge. When closed, the inside edges of the cover will be supported along their full length.</td>
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<td>The center of the cover will be several inches higher than the outside edges. The covers will open up to 90°.</td>
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<td>Cover hinges will be full length, stainless steel &quot;piano&quot; type.</td>
<td>Yes/No</td>
<td>List Deviations</td>
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| Nr | Item | Requirements | Complies? | List Deviations
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<td>Each cover will be equipped with a Danaher Motion Electrak™ 2 (model D12-20A5-08D) electric linear actuator. A rubber-covered switch will be provided for each actuator to control the opening and closing of the covers. The switches will be located at the rear of the body driver’s side. Additional locks on top of the cover are not required to secure the cover in the nested position. Gas lift struts will be provided to assist in lifting doors should they need to be opened manually.</td>
<td>Yes/No</td>
<td>Exceptions/Alternatives*</td>
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<td>Access doors to the actuator arms will be provided in the hose bed cover. The access doors will allow the customer to remove the actuator arm from the aluminum cover so that the cover can be operated manually if needed. The access doors will be made of aluminum treadplate and will be located on both sides of each actuator arm.</td>
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<td>Each cover will be equipped with one (1) chrome plated handle at each end. (Total - 4). Provide a short handrail at the rear of the center support.</td>
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<td>If access to the booster tank fill tower is blocked by the hose bed cover, provide a hinged access door or panel so that the booster tank may be filled without raising cover doors.</td>
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<td>A drop-cover made from a high quality red vinyl material will be attached to the rear of each cover. Each flap will include a chain weight. Flaps will cover the entire rear of hose bed, and will be retained with spring-clip hold-downs.</td>
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<td>Two (2) clear LED dome lights will be mounted to the underside of each hose bed cover (total - 4) to provide illumination of the hose beds during night operations. Lights will be controlled by a switch located in the pump panel. Specific location of these lights will be determined at the pre-construction meeting. Lights and wiring will be heavy-duty, and securely mounted to withstand shock and impact.</td>
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<td>Crosslay cover:</td>
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<td></td>
<td>- The crosslay cover will be fabricated from .125&quot; satin-finish aluminum treadplate.</td>
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<td>- The cover will be hinged (at the side nearest the cab), via a full length, stainless steel hinge.</td>
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<td>- The cover will be secured in the &quot;down&quot; position by two (2) stainless steel &quot;butterfly&quot; style latches.</td>
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<td>- The cover will be secured in the &quot;up&quot; position by two (2) stainless steel positive door holders (Eberhard 5600-U or similar), or by gas lifting struts.</td>
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<td>- Provide three (3) chrome plated handles. One handle will be mounted on each end of the cover, and one will be mounted in the center</td>
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<td><strong>Backboard Storage:</strong></td>
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<td>• Provide one transverse storage compartment for a backboard. Compartment</td>
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<td>will be located just behind the crosslay bed, and will have stainless steel</td>
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<td>hinged doors on each side. The doors will have quarter-turn latches to secure</td>
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<td>them in the closed position.</td>
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<td>• Compartment size will facilitate one (1) 16.00&quot; X 72.00&quot; X 2.00&quot; backboard.</td>
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<td><strong>Ladder Storage:</strong></td>
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<td>• The ladders will be stored between the water tank and the passenger's side</td>
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<td>compartments.</td>
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<td>• The ladders will extend into the pump compartment just to the rear of the</td>
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<td>water pump discharges.</td>
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<td>• The ladder storage area will be enclosed as practical by means of sheet</td>
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<td>metal to protect the ladders from road dirt. The ladders that extend into</td>
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<td>the pump house will also be enclosed. The pump house portion of the</td>
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<td>enclosure will be made of vinyl. The vinyl portion will be fastened to the</td>
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<td>pumphouse structure with side release buckles. The vinyl portion will allow</td>
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<td>the user to move the enclosure aside to access the pump area.</td>
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<td>• Each ladder will be stored vertically in a separate stainless steel storage</td>
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<td>trough. Each stainless steel trough will be lined with Dura-Surf nylon</td>
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<td>slides. The extension ladder will be stored with fly section of the ladder to</td>
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<td>the inside wall of the compartment.</td>
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<td>• A bright aluminum treadplate enclosure will be provided at the rear of the</td>
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<td>body to properly contain the ladders. This enclosure will extend to the</td>
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<td>rear of the side body compartments.</td>
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<td>• The enclosure will also include a vertically hinged aluminum treadplate</td>
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<td>door with a &quot;D&quot; handle latch to access the ladders.</td>
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<td><strong>Hard suction hose storage:</strong></td>
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<td>• Fabricate compartment directly above ladder storage compartment. This</td>
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<td>compartment will have a diamond plate access door with the hinge on the</td>
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<td>left side of the door.</td>
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<td>• The compartment will be able to hold two (2) 3&quot; X 10'L hard suction hoses,</td>
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<td>with 2-1/2&quot; NHT female couplings. Hose will be accessed via a diamond</td>
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<td>plate, hinged door with a quarter turn style lock.</td>
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6.0 ELECTRICAL SYSTEM
| Nr | Item | Requirements | Complies? | List Deviations
|----|------|--------------|-----------|------------------|
| 6.1 | Design Requirements | **The Electrical System will be designed:**  
- To meet SAE Standard J1292 (Automobile, Truck, Truck-Tractor, Trailer, and Motor Coach Wiring) as a minimum.  
- To withstand the rigors of fire service  
- With accessibility and ease of maintenance as a priority. |  | Exceptions/Alternatives* |
| 6.2 | Construction | All circuits (except for starter main power) will be powered through a battery cutoff switch. Cut-off switch location will be determined at the pre-construction conference.  
All electrical circuits will terminate in a centrally located electrical compartment. The electrical compartment will be conveniently located in the cab, with full access provided by a removable interior panel.  
All circuits will be labeled, and protected with automatic reset circuit breakers (where appropriate).  
All circuits will be relay controlled. No loads greater than four amps will be carried through rocker switches.  
All wire used in this vehicle will conform to SAE Standard J1128 (Low Tension Primary Cable), for "SXL" insulation.  
All electrical components, including wiring, will be rated at 125% of the maximum intended load.  
All wiring will run in enclosed looms or conduit; and will be color coded and labeled with circuit designation every two inches (2").  
Open, "crimp" type connectors are not acceptable for exterior connections, and electrical tape is not acceptable for any connection.  
Wiring protection will be facilitated via:  
- Heat resistant (280°) loom  
- Hard plastic (snap-in or glue-in) or rubber grommets wherever wiring passes through walls or partitions.  
- Plastic cable ties  
- Rubber coated aluminum cable clamps  
Wherever practical, wiring looms will be tied together, and clamped to bulkheads, to insure maximum security and vibration resistance.  
All continuous runs of wiring will be supported at intervals of 16 inches or less. |  |  |
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<th>List Deviations Exceptions/Alternatives*</th>
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<td></td>
<td>Weatherproofing:</td>
<td>• All penetrations through the cab roof will be caulked with an automotive silicone sealer. Silicone-caulked fender washers will be used when fastening equipment to the underside of the cab roof. • Any electrical components installed in exposed areas will be positioned so that moisture cannot accumulate. • Electrical components that are designed to be removed for service or maintenance will be fastened with machine screws. Wiring to these devices will include sufficient slack so that the device may be pulled away from its mounting for inspection and testing. • A silicone-based corrosion-preventive compound will be applied to all weather-exposed terminals, all non weather-resistant connections, and to the sockets of all light fixtures located in weather exposed areas.</td>
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<td>6.3</td>
<td>EMI/RFI Protection</td>
<td>The vehicle's electrical system will include means to control and suppress electromagnetic and radio frequency interference (EMI/RFI). Electrical system design and choice of components will insure that conducted and radiated EMI/RFI is suppressed at its source. The vehicle will have the ability to operate in the electromagnetic environment typically found in fire ground operations. The manufacturer will verify that EMI/RFI testing has been performed on similar apparatus and will certify that the vehicle proposed meets the requirements of SAE J551. EMI/RFI susceptibility will be controlled through immune circuit design; shielding, twisted pair wiring, and filtering. The electrical system will be designed for full compatibility with low level control signals and high-power two-way radio communication systems. Harnesses and cable routing will be given careful attention to minimize the potential for conducting and radiating EMI/RFI.</td>
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<td>6.4</td>
<td>Spare Circuits</td>
<td>Furnish and install four (4) spare circuits. Each circuit will include a 12-gauge power and ground wire. Circuits will be individually protected with 15-amp circuit breakers. Circuits will originate in the electrical compartment. One (1) circuit will terminate in the curbside rear vertical compartment. The final location of the remaining circuits will be determined at the pre-construction conference. All circuits will terminate with heat-shrink &quot;butt&quot; connectors.</td>
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<td>6.5</td>
<td>Shoreline Connection</td>
<td>Furnish and install a Kussmaul &quot;Auto-Eject&quot; 20WP, mounted on streetside of vehicle, in front of the driver door.</td>
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<td>6.6</td>
<td>Battery Conditioner</td>
<td>Furnish and install a Kussmaul &quot;Auto Charge&quot; 1000 battery charger unit.</td>
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<td>The charger will charge the truck batteries whenever the unit is connected to shoreline power.</td>
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<td>The unit will also provide power to flashlight and portable radio chargers whenever the unit is connected to shoreline power. These loads will be disconnected from the battery while the charger is operating.</td>
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<td>The charger unit will include a “state-of-charge” bar graph display module, which will be mounted on the driver side seat riser.</td>
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<td>The shoreline connection to the charger will be made through the “Auto-Eject” unit noted in Item 6.5 above.</td>
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<td>The exact location of the battery conditioner will be determined at the pre-construction conference.</td>
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<td>6.7</td>
<td>110 VAC Power Source</td>
<td>Furnish and install a 1,000 watt (DC) to (AC) power inverter (Vanner VLT-12-1000 – no exceptions).</td>
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<td>Mount the inverter unit at the top of the streetside forward vertical compartment. Adequate ventilation will be provided.</td>
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<td>DC input: The inverter will be powered by the chassis battery system.</td>
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<td>Load center:</td>
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<td>• Cutler-Hammer (or approved equal), with space for four (4) full-size circuit breakers. The load center will be located in the streetside forward vertical compartment.</td>
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<td>• Individual breakers will be provided for each circuit, so that a tripped breaker does not affect other on-line equipment.</td>
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<td>Outlets:</td>
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<td>• The generator’s AC output will be hardwired (using liquid tight flexible conduit), to two (2) outdoor rated NEMA L5-15 15-amp ground fault circuit interrupter (GFCI) twist-lock outlets.</td>
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<td>• Install one (1) outlet on each side of rear outside cab wall (total - two). Outlets will include weatherproof covers.</td>
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<td>General AC electrical system requirements:</td>
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<td>• Except where superseded by NFPA 1901, all components, equipment and installation procedures will conform to NFPA 70 (National Electrical Code or “NEC”) requirements.</td>
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<td>• All grounding will be accomplished in accordance with NEC Section 250-6 (Portable and Vehicle Mounted Generators). Ungrounded systems will not be used. Only stranded or braided copper conductors will be used for grounding</td>
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<td>and bonding.</td>
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<td>- Equipment grounding will be accomplished in accordance with NEC Section 250-91 (Grounding Conductor Material).</td>
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<td>- The grounded current-carrying conductor (neutral) will be insulated from the equipment grounding conductors, and from equipment enclosures and other grounded parts. The neutral conductor will be colored white or gray in accordance with NEC Section 200-6 (Means of Identifying Conductors).</td>
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<td>- In addition to the bonding required for the low voltage return current, the cab and all compartments will be bonded to the vehicle frame by a copper conductor. This conductor will be rated at 115 percent of the nameplate current rating of the power source, as defined in NEC Section 310-15 (Conductor Ampacity).</td>
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<td>- All conductors used the in the AC power system will be type THHW or THW, enclosed in liquid-tight flexible non-metallic conduit. Conduit will be rated at 90°C.</td>
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<td>- Conduit will not be attached to suspension components, water or fuel lines, air or air brake lines, fire pump piping, hydraulic lines, exhaust system components, or low voltage wiring. Conduits and wiring will be separated from exhaust piping a minimum of 12 inches, or will be properly shielded. Conduits and wiring will be separated from fuel lines a minimum of six (6) inches.</td>
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<td>- Conduit will be supported within six inches (6&quot;) of any junction box, and at 24&quot; intervals on continuous runs. Supports will be compatible with the conduit selected, and will be securely fastened to the vehicle.</td>
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<td>- The conductors used between the output terminals of the power source and the main overcurrent protection device will not exceed 144 inches in length.</td>
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<td>Testing:</td>
<td>• The AC wiring and associated equipment will be tested by the vehicle manufacturer or the installer of the AC system.</td>
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<td>• The wiring and all permanently connected devices and equipment will be subjected to a dielectric voltage test of not less than 900 volts for one (1) minute. The test will be conducted between the live components and neutral conductor, and between live components and the vehicle frame with any switches in the circuit(s) closed. This test will be conducted after all body work has been completed.</td>
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<td>• Electrical polarity will be verified at all permanently-wired equipment and receptacles.</td>
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<td>• An operational test will be conducted, with the power source operated at 100 percent of its nameplate wattage for a minimum of two (2) hours, in accordance with NFPA 1901, 1999 Edition, Section 21-14. The minimum continuous electrical load, as defined in NFPA 1901, 1999 Edition, Section 11-3.2 will be applied to the vehicle's low voltage electrical system during the operational test.</td>
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<td>6.8</td>
<td>12VDC Outlets</td>
<td>Furnish and install heavy duty marine-grade 12VDC outlets at the following locations:</td>
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<td>• Two (2) in the driver area, and two (2) in the officer area.</td>
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<td>• One (1) in the ceiling between the driver and officer area.</td>
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<td>• Six (6) in the crew area. One (1) outlet will be installed in the wall just ahead of each side door. The other four (4) outlets will be located centrally in the rear cab area.</td>
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<td>• Three (3) in the curbside rear vertical compartment.</td>
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<td>• The exact outlet locations will be determined at the pre-construction conference.</td>
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<td>7.0</td>
<td>PART VIII – EXTERIOR LIGHTING/ EMERGENCY EQUIPMENT</td>
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<td>7.1</td>
<td>Headlights</td>
<td>Vehicle will include a four (4) light headlight system, with rectangular shape beam lamps.</td>
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<td>High and low beams will be mounted in a common bezel. The bezel style will be identical to that of the warning light bezel.</td>
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<td>The headlights will be mounted directly below the warning lights.</td>
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<td><strong>Turn Signals</strong></td>
<td><strong>Front:</strong> Front turn signals will be the LED type. Turn signal housings will wrap around the corners of the cab. <strong>Midships:</strong> One (1) Whelen model 60A00TAR amber LED directional arrow will be installed on each side of the rear wall of the cab (total – 2). The lights will be mounted to the vehicle via 15° angle bezels. <strong>Rear:</strong> Two (2) Whelen® 60A00TAR, amber LED directional arrows will be installed at rear of vehicle. Rear turn signals will be mounted in a common bezel with the stop/tail and reverse lights described below.</td>
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| 7.2| **Body Lighting and Reflectors** | **Stop/tail lights:** Whelen® 60R00XRR, 600 series LED  
**Reverse lights:** Whelen® 60C00VCR, 600 series LED  
Rear stop/tail, turn signal, reverse and warning lights will be installed in a Whelen® CAST4V housing.  
**High mount stop light:** A Whelen® PSR00FRR LED Strip-Lite™ will be mounted at center rear of vehicle, as high as possible.  
**Clearance lights:** Truck-Lite model 35, LED.  
**License plate light:** There shall be one (1) Weldon, Model 0J10-0393-00, license plate bracket mounted on the rear of the body.  
A Truck-Lite, Model 15055, LED white light with chrome housing shall illuminate the license plate.  
**Reflectors:** All reflectors will be fastened to vehicle with screws or rivets. "Stick-on" type reflectors are not acceptable. |                  |                                         |
| Nr | Item       | Requirements                                                                                                                                                                                                                                                                                                                                                     | Complies? | List Deviations
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<th>Exceptions/Alternatives</th>
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<td>Marker Lights:</td>
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<td>• Five (5) LED clearance/marker lights will be installed on the leading edge of the cab roof.</td>
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<td>• One (1) rubber-bodied marker light (Britax series 429.200 LED) will be installed on each outside edge of the tailboard. Lights will indicate vehicle extents during backing operations.</td>
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<td>7.4</td>
<td>Light Bar</td>
<td>Furnish a Whelen® Edge® Ultra™ Freedom™ FL Series Super-LED® Lightbar, model FN82QLED.</td>
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<td>Configuration:</td>
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<td>• Two (2) red flashing forward facing LED modules</td>
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<td>• Two (2) clear flashing forward facing LED modules</td>
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<td></td>
<td>• Two (2) red flashing front corner LED modules</td>
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<td></td>
<td>• One (1) red flashing side-facing LED module on each side of lightbar.</td>
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<td></td>
<td>• Two (2) steady red forward facing LED modules</td>
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<td>• One (1) 3M™ Opticom™ priority-control emitter.</td>
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<td>• All lenses will be clear.</td>
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<td>The light bar will be activated by the emergency master switch (via an individual selector switch). The clear forward facing modules will be deactivated when the parking brake is supplied.</td>
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<td>The Opticom™ emitter will be activated by the emergency master switch (via an individual selector switch). The Opticom™ emitter will be deactivated when the parking brake is applied.</td>
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<td>7.5</td>
<td>Front Warning Lights</td>
<td>Two (2) Whelen® model 60R00FRR (red “Super LED”) lights will be mounted on each side of the cab, above the headlights (total – 4). The warning lights will be mounted in a common bezel, identical in style to the headlight bezel. Both curbside lights and the outer streetside light will flash; the inner streetside light will show steady red.</td>
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<td>The warning lights will be activated by the emergency master switch (via an individual selector switch).</td>
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| 7.6| Intersection Lights   | Whelen® model 60R00FRR “Super LED” flashing lights will be installed at the following locations, and in accordance with NFPA requirements for lower level optical warning:  
- One (1) light will be mounted on each end of the front bumper, so that they are visible from the side of the vehicle.  
- One (1) light will be mounted over each rear wheelwell.  
- All four (4) lights will be furnished with chrome bezels.  
- The intersection (side) lights will be activated by the emergency master switch (via an individual selector switch).                                                                 |           |                                         |
| 7.7| Rear Warning Lights   | Lower:  
- Two (2) Whelen® model 60R0FRR red “Super LED” warning lights at the rear of the apparatus; one (1) on each side.  
- Lights will be installed in the housing described in item 9.c. below.  
Upper (hose bed area):  
- Two (2) Whelen® 60R00FRR red “Super LED”, and two (2) Whelen® 70A00FAR amber “Super LED”.  
- One (1) red and one (1) amber light will be installed on each side of the upper rear compartments. The red lights will face to the side; the amber lights will face to the rear.  
The rear warning lights will be activated by the emergency master switch (via an individual selector switch). |           |                                         |
| 7.8| Traffic Arrow         | Furnish and install a Whelen® TAL-85 traffic arrow at the rear of the vehicle, just below the hosebed. The light assembly will be recessed into the rear fascia.  
The TACTLD1 control head assembly will be installed within easy reach of the driver.                                                                                                                                  |           |                                         |
| 7.9| Spot and Deck Lights  | Spotlights:  
- Furnish two (2) Unity® model 325 spotlights, with 160,000 candle-power halogen bulbs.  
- Spotlights will be installed at each side of cab roof. Control handles must be easily accessible to driver and officer.  
Deck lights:  
- Furnish two rear facing surface mount Whelen 900 series LED (12 diode model #90C0ELZR) scene lights. Chrome angle flanges will be furnished and installed to angle lights towards the ground. |           |                                         |
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| 7.10 | Cab Interior/Exterior Lighting | - One (1) light will be installed on each side of the upper rear compartment body. Lights will be actuated by a switch in the cab master control panel.  
Dome Lights:  
There shall be four (4) Weldon 808* series, dual LED dome lights with [Color, Dome Lt Bzl] bezels provided. Two (2) lights shall be mounted above the inside shoulder of the driver and officer and two (2) lights shall be installed and located, one (1) on each side of the crew cab.  
The color of the LED’s shall be [Color, Dome Lt].  
The white LED’s shall be controlled by [Control, Dome Lt White].  
The color LED’s shall be controlled by [Control, Dome Lt Color].  
Map light:  
- Provide one (1) Sunnex model 742-20, with base mounted switch.  
- Light will be mounted to the right side of the dash, in the officer area.  
Step lights:  
There shall be eight (8) Whelen, Model 0AC0EDCR, round LED step lights provided with 45 degree chrome bezels to direct the light downward. The lights shall be installed in the cab and crew cab at the following locations:  
  - Two (2) in the driver side front doorstep.  
  - Two (2) in the driver side crew cab doorstep.  
  - Two (2) in the passenger side front doorstep.  
  - Two (2) in the passenger side crew cab doorstep.  
The lights shall be activated when the adjacent door is opened.  
Body Lights:  
There shall be at least two (2) Whelen, Model 0AC0EDCR, white 12 volt DC LED step lights provided over the driver’s side pump panel running board. The lights shall be installed on the pump panel no more than 10.00" over the surface of and 15.00" apart. An additional light shall be included depending on the length of the running board.  
There shall be at least two (2) Whelen, Model 0AC0EDCR, white 12 volt DC LED step lights provided over the passenger’s side pump panel running board. The lights shall be installed on the pump panel no more than 10.00" over the surface of and 15.00" apart. An additional light shall be included depending on the length of the running board. | Yes/No | |
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<td>There shall be at least two (2) Whelen, Model 0AC0EDCR, white 12 volt DC LED step lights provided over the rear tailboard. The lights shall be installed no more than 10.00&quot; over the surface of and 15.00&quot; apart. Additional lights shall be included depending on the length of the tail board.</td>
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<td>These step lights shall be actuated when the battery switch is on and the parking brake is applied.</td>
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<td>All steps on the apparatus shall be illuminated per the current edition of NFPA 1901.</td>
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<td>Ceiling lights:</td>
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<td>• Provide three (3) Signal-Stat® #3613 or approved equal.</td>
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<td>• One (1) light will be installed at each door opening.</td>
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<td>• Ceiling lights will be activated by moisture-proof jamb switches, employing ground switching.</td>
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<td>&quot;COMPARTMENT OPEN&quot; warning system:</td>
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<td>• Provide four (4) red LED lighthouse with black flange.</td>
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<td>• Lights will be mounted in the headliner area within clear view of driver/officer.</td>
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<td>• One light will flash indicating any streetside cab door is open, and one light will indicate when any curbside cab door is open.</td>
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<td>• One light will flash whenever any of the streetside compartment doors are open; the other will flash whenever any of the curbside or rear compartment doors are open.</td>
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<td>• A warning chime (&quot;Sonalert&quot; type warning devices or buzzers not acceptable) will be installed in driver area.</td>
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<td>• The lights and chime will only function if compartment doors are open when the parking brake is released.</td>
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<td>&quot;DO NOT MOVE APPARATUS&quot; indicator:</td>
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<td>• Provide flashing indicator lights and an audible alarm in accordance with NFPA 1901, 1999 edition, Section 11-11. The lights and alarm will be mounted in the driver compartment.</td>
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<td>• The lights and alarm will be activated by functions (mentioned elsewhere in this specification) that would render the apparatus unsafe to move. For example - when the transmission is in &quot;pump&quot; mode, the cab or compartment doors are open; the monitor is extended; the ladder rack is down; etc. The system will be deactivated whenever the parking brake is set.</td>
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| 7.11| Compartment Lighting        | **Pumper Body:** There shall be seven (7) compartments with Amdor, Model AY-9220, white 12 volt DC LED compartment light strips. The lights shall be mounted with mechanical fasteners. There shall be two (2) strip lights installed vertically in each compartment opening per the latest NFPA requirements. The lights shall be activated when the battery switch is on and the respective compartment door is opened.  
**Engine/pump compartment lights:**  
- Truck-lite® #80350, one each side of compartment (if applicable).  
- Provide switches at each light fixture |           |                 |
| 7.12| Ground and Docking Lights   | **Ground lighting:** There shall be four (4) Amdor LumaBar H2O, Model AY-9500-020, 20.00” white LED strip lights provided, one (1) for each cab door. These lights shall be activated automatically when the battery switch is on and the exit doors are opened or by the same means as the body perimeter scene lights.  
There shall be a total of four (4) Amdor Luma Bar, H2O Model AY-9500-020 20” LED weatherproof strip lights with brackets provided on the apparatus. The lights shall be mounted in the following locations: two (2) lights shall be provided under the rear step area, and one (1) light shall be provided each side under the pump panel running boards.  
The lights shall be activated by switch in the cab.  
These lights shall meet NFPA requirements for perimeter scene lights.  
**Docking lights:**  
- Install one (1) on each side, behind rear wheel wells.  
- Docking lights will activate by means of a switch mounted in the cab master control panel. |           |                 |
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| 7.13| Flood Lights | Furnish and install three (3) Whelen Pioneer® PCP2, 12VDC LED lamp fixtures.  
- Two (2) fixtures will be installed at the rear of the cab, via remote bottom-raise poles – one (1) on each side. The poles will be as long as possible within the confines of their location and will include appropriate set-back brackets to ensure safe operation. Each light will include a stainless steel grille guard.  
- The fixtures will be installed so that they can be stowed while facing outward.  
- Each pole will be equipped with a switch that will activate a dash-mounted "LIGHT POLE UP" warning light.  
- One (1) fixture will be mounted to the leading edge of the cab roof via a custom "brow mount."  
- Each light will be individually controlled by a low-voltage (12VDC) switch that will be located in the cab master control panel. Each switch will include a green indicator light. | Yes/No   |                                          |
| 7.14| Siren System | Controller/amplifier:  
- Unitrol Touchmaster® model TM1  
- 200 watts total output  
- Disable "Hi/lo" tone feature  
- Provide radio re-broadcast through public address amplifier (PA).  
- Flush mount the controller unit in the cab control console within easy reach of driver. Exact location will be determined at pre-construction conference.  
Siren speakers:  
- One (1), Code 3 model PB100C, with chrome finish.  
- Speaker will be connected so that the amplifier produces 200 watts of total output.  
- Speaker will be flush mounted in the front bumper.  
Auxiliary siren:  
- Furnish and install a Federal Signal Q2B® electro-mechanical siren.  
- The siren will be recessed into the front bumper on the curbside. The area where the siren is mounted will be reinforced to properly support the weight of the siren. | Yes/No   |                                          |
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<td>Siren control switches:</td>
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<td>• Provide one (1) foot control switch on the driver side of cab, within reach of the driver's left foot.</td>
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<td>• Provide one (1) push-button style siren control switches on the dash, within easy reach of the officer.</td>
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<td>• Provide two (2) push-button style siren brake switches on each side of the dash; within easy reach of each front seating position.</td>
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<td>• Switches will be clearly labeled as to function.</td>
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<td>The operation of the Unitrol and auxiliary siren will be enabled through the emergency master switch.</td>
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<td>7.15</td>
<td><strong>Communications</strong></td>
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<td><strong>Antennas:</strong></td>
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<td>• Furnish and install four (4) &quot;Antenex&quot; MABVTO antenna bases, with supplied coaxial cable.</td>
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<td>• Roof locations will be determined at the pre-construction conference.</td>
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<td>• Two (2) coaxial cables will terminate in a compartment located under the officer seat, and two (2) will terminate in the streetside interior compartment.</td>
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<td><strong>Radio bus:</strong></td>
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<td>Provide two (2) 12 VDC, 50 amp power busses, one (1) terminating in the streetside front vertical compartment, and the other terminating in the compartment under the officer seat.</td>
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<td><strong>Radio installation:</strong></td>
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<td>• Install a City-provided Motorola Astro® XTL 2500™ two-way radio system, consisting of a control head and a remote chassis. The remote chassis will be mounted under the officer’s seat, and the control head will be mounted on the dash via a locking swivel mount so that it is accessible from both the driver and officer positions.</td>
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<td>• The swivel mount will be a Johnny Ray model JR-300.</td>
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<td>• Connect power and antenna cables to the remote chassis. Install and connect the cable that inter-connects the control head and remote.</td>
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<td>• All radio interfaces (David Clark, siren controller/PA, pump panel microphone) will be connected in accordance with manufacturer’s instructions.</td>
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<td>• City staff will test and calibrate the radio system upon delivery.</td>
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<td>7.16</td>
<td><strong>Master Control Panel</strong></td>
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<td>The cab master control panel will be located in a ceiling mounted console, within easy reach of the driver.</td>
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|    | Switch panel details:                     | • Panel will include Carlingswitch Contura (or approved equal) curved rocker switches.  
• Switches will include backlit legends  
• No current loads in excess of four (4) amps will be carried through panel switches. |           |                 |
|    | Emergency master switch:                  | The master control panel will include an emergency master switch that will activate the devices marked with an asterisk (*) in item 5. below, when those fixtures are enabled by their individual control switches. |           |                 |
|    | Switch functions:                         | • Emergency Master (see item 4. above)  
• Unitrol*  
• Auxiliary siren*  
• Light bar*  
• Front warning lights*  
• Wig-wags*  
• Side warning lights*  
• Rear warning lights*  
• Curbside flood light  
• Streetside flood light  
• Front flood light  
• Docking lights  
• Ground lighting  
• Deck lights  
• Compartment lighting master  
• Horn selector switch  
• Three (3) spare DPDT switches, with wiring to electrical panel.  
• Other switch functions as required  
Final switch layout and design to be determined during pre construction conference |           |                 |
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<td>The Unitrol siren/light controller will also be flush-mounted in or adjacent to this panel. Bidders will disclose the proposed control panel layout in their bid response.</td>
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<td>7.17 Load Manager</td>
<td>The vehicle will be equipped with a Kussmaul Electronics Load Manager Mark II. The load management system will perform sequencing and load management. The sequencer will automatically activate up to eight (8) individual circuits, powering them up sequentially at ¾ second intervals. The system will deactivate the selected devices in the same fashion. The load manager will monitor battery voltage, and will disconnect (shed) up to five (5) circuits if the battery voltage drops below a predetermined level (parking brake applied). The load manager will reactivate circuits as battery voltage increases. The exact sequencer configuration will be determined at the pre-construction conference.</td>
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<td>7.18</td>
<td>Horns</td>
<td>Provide a standard truck-type electric horn unit. Furnish and install one (1) Grover model 1510 air horn, flush mounted in front bumper on streetside. Selector switch: A selector switch will be mounted in the cab master control panel. The switch will be used to select &quot;air&quot; or &quot;electric&quot; horns. Two (2) pilot lights will be mounted adjacent to the switch. Red for &quot;air&quot;, green for &quot;electric&quot;. Horns will be activated by the steering wheel horn button, and a push button switch located in the officer area, adjacent to the controls for the auxiliary siren. Air horn will have a pressure protection valve that will be installed to prevent the loss of air, in the brake system.</td>
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<td>8.0</td>
<td>ACCESSORIES</td>
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<td>8.1</td>
<td>General</td>
<td>All accessories will be completely mounted and installed. Locations not specifically called out will be determined at the pre-construction conference.</td>
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<td>8.2</td>
<td>Attachment Points</td>
<td>Furnish and install one (1) 2.00&quot; hitch-style receiver on each side of the apparatus. Side attachment points will be installed below the body aft of the rear axle. Each receiver will be rated at 6,000 pounds and will be used as an anchor point for various attachments.</td>
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| Nr | Item | Requirements | Complies? | List Deviations
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|    |      | **Furnish and install two (2) 2.00" hitch-style receivers at the rear of the vehicle (one on each side of the tow bar). The receivers will be placed 30" apart (on center), and will provide +/- 2.00" of side-to-side adjustment. The receivers will be used to attach an equipment box weighing approximately 500 pounds.** | Yes/No | Exceptions/Alternatives*
<p>| 8.3 | Burnover Protection | Furnish and install window fire curtains manufactured by Storm King Mountain™ Technologies. Curtains will be installed at all cab interior windows. |  |  |
| 8.4 | Cab Area | Swiveling radio mount (furnish and install – see Radio Installation). Furnish and install two (2) Ziamatic Walkaway® SC-50-H-6-SF W/PHS SCBA brackets in the crew area. The brackets will be mounted to the bulkhead separating the driver/officer and crew area; facing the rear wall, mounted on a custom steel bracket that will face the bottle at a 45° angle, as near to the entry doors as possible. Furnish and install one (1) Ziamatic Walkaway® SC-50-H-6-SF W/PHS SCBA bracket in the center seat. Furnish and install two (2) Ziamatic Walkaway® KD-UH-6-SFRS SCBA brackets in the passenger body compartment closest to the cab. Brackets will be “through-bolted”. Nut-serts or threaded holes will not be acceptable. Furnish and install a storage box, 60&quot;W X 15&quot;H X 15&quot;D, fabricated from sheet aluminum. The box will be mounted to the bulkhead separating the driver/officer and crew area, with opening facing rear. The center 18&quot; of the storage box will include dividers on three-inch (3&quot;) centers. The box will be mounted at an angle (front 2&quot; higher than rear) to facilitate the retention of stored items during travel. |  |  |
| 8.5 | Intercom System | Furnish and install a seven (7) position “David Clark” intercom system. Radio interface capability will be provided at five (5) positions. Provide push-button “push-to-talk” (PTT) control. Exact PTT button locations will be determined at the pre-construction conference. |  |  |
|    |      | <strong>Driver/officer area:</strong> |  |  |
|    |      | - Install one (1) model U3800 master station. Station will be mounted to the air conditioning plenum, just behind and to the left of the officer seat. |  |  |
|    |      | - Provide one (1) model U3815 Radio Interface Module at driver position. |  |  |
|    |      | - Provide one (1) model U3811 Radio Interface Module at officer position. |  |  |
|    |      | - Furnish one (1) H3442 headset (driver), and one (1) H3442 headset (officer). |  |  |
|    |      | <strong>Crew area:</strong> |  |  |
|    |      | - Provide three (1) model U3801 Remote Headset Stations in the crew area. |  |  |
|    |      | - Furnish three (3) H3442 headsets (one for each position). |  |  |</p>
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</table>
|    | Pump panel                  | - Provide one (1) model U3815A Radio Interface Module at pump panel.  
- Furnish one (1) C3023 belt station, and one model H3442 headset.                                                                                                     |          |                 |
|    | Tailboard area              | - Provide one (1) model U3801 Remote Headset Station at tailboard position. Exact location will be determined at pre-construction conference.  
- Furnish one (1) H3442 headset.  
- Furnish and install five (5) cast aluminum headset hanger hooks. Exact location of hooks will be determined at pre-construction conference.                                                                 |          |                 |
|    |                             | Furnish and install the appropriate interface adapter(s) for a Motorola Astro® XTL 2500™ two-way radio. All necessary cables and connectors will be provided.                                             |          |                 |
| 8.6| "Knox®" Devices             | Install department provided Knox® KeySecure3 USB® #2643 master key retention device. The KeySecure® device will be installed on or near the dashboard, in the officer area. The KeySecure® device will be connected to battery power at all times.  
Install department provided Knox® Knox-Box® 1650 series high security residential key box. The key box will be installed in close proximity to the narcotics storage cabinet. The exact location will be determined at the pre-construction conference. |          |                 |
| 8.7| Narcotics Cabinet           | Install department provided steel narcotics cabinet (Colonial Medical #54575 Cabinet) will be 9"H X 8"W X 5-1/2"D, and will have double-locking doors.  
Cabinet will be installed in the space directly behind the officer’s seat. Exact location will be determined at the pre-construction conference. |          |                 |
| 8.8| Rear Compartment Area       | Rear compartment tray and bracket:  
Furnish and install a fixed tray for foam containers. The tray will be fabricated from stainless steel – 46"L X 13" W X 3"H. Exact location to be discussed during pre-construction conference.  
Furnish and install an aluminum bracket to hold one Akron foam eductor nozzle. Bracket will be mounted to right side inside wall of compartment. Finals details and exact mounting location to be determined during pre-construction conference. |          |                 |
<p>| 8.9| Reverse Alarm               | A PRECO, Model 1040, solid-state electronic audible back-up alarm that actuates when the truck is shifted into reverse shall be provided. The device shall sound at 60 pulses per minute and automatically adjust its volume to maintain a minimum ten (10) dBA above surrounding environmental noise levels. |          |                 |</p>
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| 8.10| Sign Plates/Sign Holders    | • Furnish and install four (4) stainless steel sign holders. The sign holders will be designed to hold lettering that may be required to be displayed during certain departmental operations. Sign holders will be painted to match the cab.  
  • Furnish eight (8) aluminum sign plates per unit. The sign plates will be sized to slide into the plate holders.  
  • All signs and sign holders will be paint matched to the body color.  
  • The size and location of the signs and holders will be determined at the pre-construction conference.                                                                                                                                                                           |           |                                        |
| 8.11| Tool mounting               | Each bidder will provide an allowance in their bid of $10,000 per unit for labor and materials costs associated with the mounting of tools and equipment. This work will be itemized on a time and materials basis, and any remaining allowance will be credited on the final invoice. Exact tool and equipment mounting and locations to be discussed at pre-construction conference.                                                                 |           |                                        |
| 8.12| Towing Eye                  | A towing eye will be installed under the tailboard, at the center of the vehicle.  
  • The towing eye will be fabricated from 1.00" cold-rolled steel bar rolled into a 3.00" radius.  
  • The towing eye will be attached to the truck frame rails via .38" structural steel angle.  
  • The towing eye will be able to withstand a 30° upward pull of 17,000 pounds, or a 20,000 pound straight horizontal pull.                                                                                                                                                   |           |                                        |
| 8.13| Tow Hooks                   | Furnish and install two (2) tow hooks  
  • Mount the tow hooks directly to frame, at the front of the vehicle.  
  • Fabricate the tow hooks from 3/4" thick A-572 steel plate, with 2.5" diameter holes.                                                                                                                                                                               |           |                                        |
<p>| 8.14| Underseal                   | The entire underside of the cab and apparatus body (with the exception of wheelwell liners) will be coated with an automotive underseal compound prior to installation on chassis frame.                                                                                                                                                                   |           |                                        |
| 8.15| Burnover Protection         | Furnish and install lagging materials manufactured by Storm King Mountain™ Technologies on all brake lines, fuel lines, hydraulic lines and electrical harnesses that could be immediately impacted in a burnover situation (i.e., those exposed at frame level and below).                                                                                                                             |           |                                        |
| 8.16| Hard Suction Hose           | Furnish two (2) Kochek P251 3′ X 10′L hard suction hoses, with 2-1/2″ NHT female couplings and strainer. Hoses will be stored in an enclosed compartment just above the ladder storage compartment. Hose will be accessed via a diamond plate, hinged door with a quarter turn style lock, as described in &quot;hard suction hose compartment&quot;                                                                 |           |                                        |</p>
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Furnish One (1) Kochek model [BS25] 2 1/2" NH Barrel Strainer K-Brite and threaded adaptor. Adaptor will be mounted in street side rearmost compartment, upper wall.

8.17 **Vehicle Data Recorder**

A vehicle data recorder (VDR) will be provided. The VDR will be capable of reading and storing vehicle information. The VDR will be capable of operating in a voltage range from 8VDC to 16VDC. The VDR will not interfere with, suspend, or delay any communications that may exist on the CAN data link during the power up, initialization, runtime, or power down sequence. The VDR will continue operation upon termination of power or at voltages below 8VDC for a minimum of 10ms.

The information stored on the VDR can be downloaded through a USB port mounted in a convenient location determined by cab model. A CD provided with the apparatus will include the programming to download the information from the VDR. A USB cable can be used to connect the VDR to a laptop to retrieve required information.

The vehicle data recorder will be capable of recording the following data via hardwired and/or CAN inputs:

1. Vehicle Speed - MPH
2. Acceleration - MPH/sec
3. Deceleration - MPH/sec
4. Engine Speed - RPM
5. Engine Throttle Position - % of Full Throttle
6. ABS Event - On/Off
7. Seat Occupied Status - Yes/No by Position (7-12 Seating Capacity)
8. Seat Belt Buckled Status - Yes/No by Position (7-12 Seating Capacity)
9. Master Optical Warning Device Switch - On/Off
10. Time - 24 Hour Time
11. Date - Year/Month/Day

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| 8.18 | **Engine and Transmission Diagnostic Software** | - Provide the Latest Version of Detroit Diesel "DIAGNOSTICLINK" Software for PC.  
- Provide diagnostic link adapter and cables from PC to ECM for software.  
- Provide 1 year of Subscription Service for software if required.  
- Provide Latest version of ALLISON DOC for PC.  
- Provide diagnostic link adapter and cables from PC to ECM if needed for software.  
- Provide 1 year of Subscription Service for software if required |
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<td>9.1</td>
<td>General</td>
<td>The vehicle will be finish painted with a high quality urethane acrylic enamel equivalent to Sikkens brand paint.</td>
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<td>9.2</td>
<td>Configuration</td>
<td>The portion of the cab starting just below the windows to the top of cab (including cab roof), and around front windshield will be painted with a color equivalent to Sikkens &quot;White&quot; FLNA4040.</td>
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<td>The remainder of the cab and the pumper body will be painted with the color Red, Sikkens FLNA30331.</td>
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<td>9.3</td>
<td>Paint Process</td>
<td>The vehicle finish will be applied using the following process:</td>
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<td>• All exposed metal surfaces on the cab and body will be thoroughly cleaned and prepared for painting. Surfaces that will not be painted include chrome plating, polished stainless steel, anodized aluminum and bright aluminum treadplate. Each imperfection on the exterior metal surface will be removed or filled and then sanded smooth for a smooth appearance. All seams will be sealed before painting.</td>
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<td>• All aluminum surfaces will be properly cleaned using a four-phase, high pressure and high temperature acid etching system.</td>
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<td>• All steel surfaces will be properly treated using a 3-phase, high temperature, cleaning/phosphatizing system.</td>
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<td>• All surfaces will be chemically cleaned to remove all dirt, oil, grease and metal oxides to ensure the proper bonding of subsequent coatings. The chemical treatment will convert the metal surface to a passive condition to prevent corrosion.</td>
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<td>• A final rinse, using ultra-pure water with 25 parts per million solids or less, will be applied to final rinse all metal surfaces, (excluding undercarriage components), at the conclusion of the metal treatment process. The final rinse will ensure that all chemical residues are removed and that no minerals, (salts), from the water dry on the metal surface and remain under the primers and topcoats. The pH of</td>
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<td>the final rinse drainage from the treated metal will be measured and determined to be within 1.0 pH unit of the pure water supply, (5.0 pH).</td>
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<td>• A two-component urethane primer/surfacer will be hand applied to the chemically treated metal surfaces at a dry film thickness of not less than two (2) mils (.002&quot;).</td>
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<td>• The primer/surfacer coat will be lightly dry-sanded with 320-grit abrasive paper to an ultra-smooth finish.</td>
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<td>• A two-component sealer primer coat will be applied over the sanded primer.</td>
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<td>• Two (2) coats of an automotive grade, two-component acrylic urethane paint will be applied in accordance with the manufacturer’s instructions. The acrylic urethane topcoat will contain a clear coat resin that creates high gloss and depth of image. The paint finish will have a surface gloss of no less than 90.00 percent reflection measured on a 60-degree geometry.</td>
<td>Yes</td>
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<td>• The paint process used will pass a cyclic corrosion test, (equivalent to General Motors test GM-9511P), of 20 cycles. Exterior coating systems, (excluding the undercarriage components), must achieve a 1/16&quot; or less maximum creep from the scribe for aluminum and an 1/8&quot; or less maximum creep from the scribe for galvannal after 20 cycles in the General Motors GM-9511P test.</td>
<td>Yes</td>
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<td>• Each batch of color topcoat, together with the finish painted vehicle, will be tested for precise color match. Visual color match will be checked following ASTM D-1729, using CIE, (International Commission on Illumination), D75 Northern Daylight light source. Instrumental color match will follow ASMT D-2244 procedures with a maximum delta E of 1.0 for whites, 1.4 for yellows, blues, greens and 1.5 for reds.</td>
<td>Yes</td>
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<td>No sags, runs, “orange peel”, “fisheyes” or sanding scratches will be visible in the finish paint.</td>
<td>Yes</td>
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<td>9.4</td>
<td>Other</td>
<td>• Wheelwell liners will also be finish painted, the same color as the body.</td>
<td>Yes</td>
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<td></td>
<td>Requirements</td>
<td>• The chassis frame assembly will be painted black before the installation of the cab and body, and before installation of the engine and transmission assembly, air brake lines, electrical wire harnesses, and other components. Other components that will be painted black are frame rails, cross members, axles, suspension, steering gear, fuel tank, body substructure supports, miscellaneous mounting brackets, etc.</td>
<td>Yes</td>
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<td>• The engine, transmission, pump and all other undercarriage components will <strong>not be repainted</strong>, unless they are not finished by the original equipment manufacturer (OEM).</td>
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<td>• All removable items such as brackets, compartment doors, door hinges, and</td>
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<td>trim will be removed and painted separately to insure paint behind all mounted items. Body assemblies that can not be finish painted after assembly will be finish painted before assembly.</td>
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<td>• Prior to reassembly and reinstallition of lights, handrails, door hardware and any miscellaneous items an isolation tape, gasket or dielectric material will be used to prevent damage to the finish painted surfaces. A nylon washer will be installed under each acorn nut or metal screw that is fastened directly to an exterior painted surface.</td>
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<td>• All filters, wiring harnesses, identification tags and nameplates will be masked before painting.</td>
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<td>9.5</td>
<td>Gold Leaf Lettering</td>
<td>Sixty (60) to eighty (80) characters of genuine gold leaf lettering, 3.00” high, outlining and shading will be provided. Locations and details to be discussed during pre-construction meeting.</td>
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<td>9.6</td>
<td>Reflective Striping</td>
<td>Apply “3M” brand Scotchlite® reflective tape in the following locations:</td>
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<td>• 10” wide white tape will be installed on both sides of the cab and apparatus body. The reflective tape at the front of the cab will be applied at headlight level.</td>
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<td>• Four-inch (4”) wide white tape will be applied at the rear of the body.</td>
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<td>• A six-inch (6”) wide, 16” long stripe will be applied on the inside of each cab door. The stripe will be located approximately 1.00” from the bottom edge of the door, on the stainless steel panel.</td>
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<td>9.7</td>
<td>Labels</td>
<td>All switches and controls will be labeled with permanently mounted, engraved plastic tags unless otherwise noted. &quot;Dymo&quot; type labels are not acceptable.</td>
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<td>9.8</td>
<td>Chevron striping</td>
<td>There shall be alternating chevron striping located on the rear-facing vertical surface of the apparatus. The rear surface, excluding the rear compartment door, shall be covered. The colors shall be red and fluorescent yellow green diamond grade. Each stripe shall be 6.00” in width.</td>
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<td>This shall meet the requirements of NFPA 1901, 2009 edition, which states that 50% of the rear surface shall be covered with chevron striping. A black vinyl outline shall be provided for each chevron stripe at the rear of the truck.</td>
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<td>9.9</td>
<td>Body decals</td>
<td>Furnish and install “memorial” decal on outside of P2 and D2 rollup compartment doors. Decal will be approximatley 36” wide by 18” tall. Decal will match current fleet of Palo Alto engines. Reference photographs will be provided upon request.</td>
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<td>9.10</td>
<td>Cab front grille</td>
<td>An American flag design will be painted on the cab grille.</td>
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<td>9.11</td>
<td>Photographs</td>
<td>Photographs of existing City fire apparatus are available for reference upon request.</td>
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<td>APPENDIX</td>
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| 10.1| Performance   | **General:**  
* All performance parameters will be achieved with unit at full operating weight, traveling on a level concrete highway, except where otherwise noted.  
* A road test will be conducted with the apparatus fully loaded, for a continuous run of no less than ten (10) miles. During that time the apparatus will display no loss of power. It will maintain normal operating temperatures. The transmission, drive shaft(s) and axles will run quietly and be free of abnormal vibration or noise. The apparatus will meet NFPA 1901 acceleration and braking requirements. The apparatus when fully loaded will carry between 25% - 50% of the load on the front axle and between 50% - 75% on the rear axle.  

**Approach angle:** No less than 11 degrees  
**Departure angle:** No less than 12 degrees  
**Acceleration:** 0 to 35 miles per hour within 10 seconds on a level concrete highway without exceeding the maximum governed speed of the engine.  
**Braking:** 20 miles per hour to 0 within 30 feet on a level concrete highway.  
**Parking brake will hold fully loaded unit on a 20% grade, or any operable grade free of ice and snow.**  
**Grade climbing ability:** 10 miles per hour on a 20% grade  
**Noise level:**  
* Noise level will not exceed 78 dba in the cab at 55 MPH, when operated on a level road with no warning devices activated.  
* State noise level (at 55 MPH) in bid response  
**Top speed:** 88 miles per hour  
**Turning radius:** Unit will be capable of turning inside of a 35 foot circle, both left and right.  
**Weight distribution:**  
* Front axle: 30 - 40% of total weight  
* Rear axle: 60 - 70% of total weight |           |                                         |
<p>| 10.2| Certification | <strong>Manufacturer or Vendor will deliver the following certifications with the completed</strong> |           |                                         |</p>
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<td><strong>vehicle:</strong></td>
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<td>Certification showing that the pump, manifolds, plumbing, adapters and caps have been tested hydrostatically for 10 minutes at 600 psi.</td>
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<td>The apparatus will be independently audit-certified through Underwriters Laboratories (UL) to the current edition of NFPA 1901. The certification includes: all design, production, operational and performance testing of the apparatus. NO EXCEPTIONS. The City of Palo Alto will be notified in advance of this test, so a City representative may be present if necessary.</td>
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<td>Booster tank certification; to include an electronic spark and waterfill test after both the internal and external tank shell welds are completed. The completed tank will be water pressure tested.</td>
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<td>Certification that the fire pump has been tested and approved by an qualified independent third party testing agency. The manufacturer will provide a copy of the test results along with the pump manufacturer's certification of hydrostatic test, the engine manufacturer's certified brake horsepower curve and the manufacturer's record of pump construction details.</td>
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<td>The fire apparatus manufacturer will provide, at the time of delivery, a letter from the engine manufacturer stating they approve of the engine installation in the bidder's chassis. The approval of the engine installation will be at full horsepower rating in a continuous duty application under all operating conditions, including &quot;Road&quot; and &quot;Pump&quot;. The pump enclosure and body will be installed on the chassis for the duration of the test. No type of automatic horsepower reduction feature will be allowed. There will be no exception to any portion of the engine installation certification.</td>
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<td>Certification from the engine manufacturer that the engine's cooling system will adequately cool engine under all anticipated operating conditions, in ambient temperatures from 0°F to 110°F. The cooling system will be tested with the apparatus body and pump compartment in place.</td>
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<td>A current draw report, which will include an itemized accounting of the expected current draw of the vehicle's complete electrical system. A load analysis will also be provided, to include: The nameplate rating of the alternator. The maximum continuous load of each component included in this specification, per NFPA 1901 (1999 Edition), Section 11-3.2. The minimum continuous load of each component included in this specification, per NFPA 1901 (1999 Edition), Section 11-3.2. The alternator rating under the conditions specified in NFPA 1901 (1999 Edition).</td>
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<td>Edition), Section 11-3.1.</td>
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<td>• Additional loads, that when added to the minimum continuous load, determine the total connected load.</td>
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<td>• Each individual intermittent load.</td>
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<td>Certification of the vehicle’s top speed and grade climbing ability for the specified drivetrain and anticipated GVW.</td>
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<td>Certification that the cab HVAC system meets the requirements noted in Item 3.11 above.</td>
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<td>The successful bidder will assume all liability in connection with any accidents, injuries or damages connected with any testing or certification; and will hold the City of Palo Alto, its employees, agents and representatives harmless.</td>
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<td>Failure to meet requirements for certification in any area will be cause for rejection of the vehicle.</td>
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<td>10.3</td>
<td>Bid Submittals</td>
<td>In addition to items listed elsewhere in this RFQ document, all bidders must submit a set of proposal drawings with their bid response. These drawings must show:</td>
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<td>• The exterior configuration of the vehicle; including compartment sizes and locations, pump panel location, and door and window sizes and locations.</td>
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<td>• The basic cab interior configuration; including seating arrangements.</td>
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<td>Bidders will also submit brochures, product literature, photographs and other information applicable to the vehicle being proposed.</td>
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<td>10.4</td>
<td>Approval Drawings</td>
<td>The vendor will provide two (2) copies of a “D-size” drawing (showing all items listed in 2. below) within 30 calendar days after the date of the pre-construction conference. The drawing may also be submitted electronically. Drawings will be reviewed and approved by City staff prior to the commencement of production.</td>
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<td>The drawings will show:</td>
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<td>• Full right side view</td>
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<td>• Full left side view</td>
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<td>• Front view</td>
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<td>• Rear view</td>
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<td>• Top view</td>
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<td></td>
<td>• Booster tank</td>
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<td></td>
<td>• Front and rear overhang</td>
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<td>• Angles of approach and departure</td>
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<td>Nr</td>
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<td>Requirements</td>
<td>Complies?</td>
<td>List Deviations Exceptions/Alternatives</td>
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<td>Location and dimensions (or model numbers) of all:</td>
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<td>- Compartments</td>
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<td>- Hose beds</td>
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<td>- Suction and discharge connections</td>
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<td>- Controls and gauges</td>
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<td>- Light fixtures</td>
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<td>- Major components and accessories</td>
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<td>- Overall unit dimensions</td>
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<td>Full interior view, including:</td>
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<td>- Seating arrangement</td>
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<td>- Dash layout</td>
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<td>The above drawings must be drawn to scale and <strong>certified by a licensed engineer</strong>.</td>
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<td>10.5</td>
<td>Delivery Submittals</td>
<td>The successful bidder will submit two (2) copies each of the following documents at the time the vehicles are delivered:</td>
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<td>- &quot;As built&quot; engineering and structural drawings (&quot;D-size&quot; sheets).</td>
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<td></td>
<td></td>
<td>- &quot;As built&quot; wiring diagrams (&quot;D-size&quot; sheets).</td>
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<td></td>
<td>- &quot;As built&quot; plumbing diagrams - to show complete piping layout, valves, and pipe sizes used (&quot;D-size&quot; sheets).</td>
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<td>- &quot;As built&quot; service manuals, to cover all components specified above.</td>
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<td>Manuals and diagrams must be available via Internet or supplied on DVD media.</td>
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<td>Either delivery method will include a comprehensive search feature.</td>
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<td>Manuals and diagrams will be specific to the apparatus being purchased. Generic manuals that include multiple models are not acceptable.</td>
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<td>&quot;As built&quot; parts manuals and diagrams:</td>
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<td></td>
<td>- Manuals and diagrams must be available via Internet or supplied on DVD media. Either delivery method will include a comprehensive search feature.</td>
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<td></td>
<td>- Manuals and diagrams will be specific to the apparatus being purchased. Generic manuals that include multiple models are not acceptable.</td>
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<td>Manuals will include:</td>
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<td>- Job number</td>
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<td>List Deviations Exceptions/Alternatives*</td>
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</table>
|    |                      | • Part numbers with full descriptions  
|    |                      | • Table of contents  
|    |                      | • Parts sections sorted in functional groups reflecting a major system, component or assembly.  
|    |                      | • Parts sections sorted in alphabetical order  
|    |                      | • Parts location instructions                                                                                                                                                                           |           |                                        |
| 10.6 | Operation Manuals   | Vendor will supply twelve (12) copies each of all operation manuals, and two (2) copies of a DVD-format operational and safety video presentation covering:  
|      |                      | • Vehicle pre-trip inspection  
|      |                      | • Chassis operation  
|      |                      | • Pump operation  
|      |                      | • Maintenance and safety  
|      |                      | One (1) copy each of the most current PC-based OEM diagnostic software applications for the engine, transmission and anti-lock brake system.  
|      |                      | All drawings, diagrams and manuals must be specifically applicable to the completed vehicle and build/job number.                                                                                           |           |                                        |
| 10.7 | Vehicle Licensing   | The following documentation will be delivered with the completed vehicle:  
|      |                      | • A certificate of origin (if applicable)  
|      |                      | • A completed California Department of Motor Vehicles (DMV) form 397, "Application for Registration of New Vehicle".  
|      |                      | • Business Address: P.O. Box 10250, Palo Alto CA 94303.  
<p>|      |                      | • A weight certificate showing the unladen weight of the completed vehicle.                                                                                                                               |           |                                        |
|      |                      | Vehicles will be registered with the DMV by the City of Palo Alto.                                                                                                                                          |           |                                        |</p>
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<th>List Deviations Exceptions/Alternatives*</th>
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<tr>
<td>10.8</td>
<td>Dealership Licensing</td>
<td>• The selling dealership (if applicable) must be licensed with the California DMV for vehicle sales of the type described in this bid specification.</td>
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<td>• The local dealership will be currently licensed, and will have represented the manufacturer for a minimum of five (5) years (NO EXCEPTIONS).</td>
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<td>• The State of California Vehicle Code, section 11701 requires a “dealer in vehicles of a type subject to registration, will make application to the Department of Motor Vehicles (DMV) for a license containing a general distinguishing number”.</td>
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<td>• The dealership will have a current license at time of bid as outlined above and will provide a copy of the license with their bid response.</td>
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<td>10.9</td>
<td>Manufacturer Licensing</td>
<td>• The vehicle manufacturer must be licensed with the California DMV for vehicle sales of the type described in this bid specification.</td>
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<td></td>
<td></td>
<td>• The State of California Vehicle Code, section 11701 requires a “dealer in vehicles of a type subject to registration, will make application to the Department of Motor Vehicles (DMV) for a license containing a general distinguishing number”.</td>
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<td>• The vehicle manufacturer will have a current license at time of bid as outlined above and will provide a copy of the license with their bid response.</td>
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<tr>
<td>10.10</td>
<td>Sales Representative Licensing</td>
<td>• The dealership sales representative must be licensed with the California DMV for vehicle sales of the type described in this bid specification.</td>
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<td>• The State of California Vehicle Code, section 11800 requires that it will be “unlawful for any person to act as a vehicle salesperson without having first procured a license issued by the Department of Motor Vehicles (DMV)”</td>
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<td></td>
<td>• The dealership sales representative will have a current vehicle salesperson’s license at time of bid as outlined above and will provide a copy of the license in their bid response.</td>
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<td>10.11</td>
<td>Inspection</td>
<td>The City of Palo Alto will have the right to inspect the above specified unit at any time during its construction.</td>
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<td>Approval or disapproval of engineering design, quality of workmanship and construction details will be binding on the contractor.</td>
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<td>Complies?</td>
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<td>The following inspections and conferences will be required:</td>
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<td>• Pre-construction conference: City representatives and the manufacturer's staff will meet at the manufacturer's facility to review the final assembly plans and specifications for the unit to be built.</td>
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<td>• Pre-paint inspection: City representatives will inspect the chassis, drivetrain, pump, plumbing and other components prior to final assembly and finish paint.</td>
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<td>• Pre-delivery inspection: City representatives will inspect the completed unit just prior to delivery. This inspection will allow witness of UL certification testing.</td>
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<td>The vendor will provide a minimum two week's notice (10 working days) for pre-paint and pre-delivery inspections so that the most economical travel arrangements may be made.</td>
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<td>Failure to make changes that the City may consider necessary so that the unit will conform to these specifications within 30 calendar days will be cause for rejection of the unit.</td>
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<td><strong>Weekly Progress Reports:</strong></td>
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<td>The successful bidder will provide weekly progress reports via e-mail, including digital photographs of the apparatus or the major components as they are being constructed. The reports will commence at the beginning of the manufacturing process and will continue until just prior to the final inspection. The reports will show the progress of the apparatus through the course of each week. Special attention will be given to show the unique features and aspects of the apparatus as construction progresses.</td>
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<td>10.12</td>
<td>Training</td>
<td>A minimum of 24 hours of jobsite familiarization will be offered (three shifts, eight hours each), within 14 calendar days of delivery of first unit. Training will be scheduled with 30 days advance notice.</td>
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<td>10.13</td>
<td>Warranty</td>
<td>The completed vehicle(s) will be warranted against defects in materials and workmanship as follows:</td>
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<td><strong>Entire vehicle:</strong> One (1) year, unconditional</td>
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<td><strong>Booster tank:</strong> Lifetime of vehicle</td>
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<td><strong>Chassis frame:</strong> Lifetime of vehicle</td>
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<td></td>
<td>Powertrain</td>
<td>Five (5) years, 50,000 miles</td>
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<td></td>
<td>Antilock brake system</td>
<td>Three (3) years, 300,000 miles</td>
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<td>Cab/cab mounting</td>
<td>The new cab shall be provided with a ten (10) year material and workmanship limited warranty. The warranty shall cover such portions of the cab built by the manufacturer as being free from structural failures caused by defects in material and workmanship that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the bid package (No Exception).</td>
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<td></td>
<td>Pumper body</td>
<td>Body will be warranted to be free of defects in design and workmanship in the body support structure, mounting structures, and other structural components described in this specification for a period of ten (10) years or 100,000 miles.</td>
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<td>Anti-lock brake system and traction control warranty:</td>
<td>The Wabco ABS/ATC system will be covered by a <strong>three (3) year or 300,000 mile parts and labor</strong> warranty provided by Meritor Wabco Vehicle Control Systems.</td>
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<td>Compartment roll-up doors</td>
<td>The exterior paint finish of the compartment roll up doors will be warranted against blistering, peeling, bubbling, lack of adhesion or any other manufacturing or material defect for a period of <strong>six (6) years</strong>. The roll up doors will also be warranted against corrosion perforation for a period of <strong>ten (10) years</strong>.</td>
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<td>Lamination Warranty</td>
<td>The manufacturer will guarantee all applied graphics for <strong>three (3) years</strong> against defects in material and workmanship. A copy of the fire apparatus manufacturer’s warranty will be included with the bid.</td>
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<td>Some or all of the items requested in this bid may require a <strong>delayed warranty start date</strong>. All warranties will commence on the date that the completed unit is placed into service at the City of Palo Alto. The appropriate warranty delay forms will be delivered with the vehicle(s).</td>
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<td>To prevent problems associated with “divided responsibility”, the successful contractor will coordinate and submit all warranty claims on behalf of the City. As</td>
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<td>part of the bid the contractor will include an outline of how warranty claims and service issues will be coordinated and handled after the apparatus has been delivered.</td>
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<td>Contractor will also coordinate future product recalls and upgrades (if any) to the existing apparatus. This includes coordinating repairs between the original manufacturer of the component and filing of warranty claims on behalf of the City.</td>
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<td>Any additional warranty conditions or coverage will be disclosed in proposal.</td>
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<td>10.14</td>
<td>Customer Service Internet Site</td>
<td>The City of Palo Alto places a high priority on customer service. In order to provide efficient service and support during the life of the apparatus, it will be required that the successful contractor provides, maintains and frequently updates a customer service website where information can be accessed by the City of Palo Alto. The website will include the following features:</td>
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<td><strong>Apparatus Detail:</strong></td>
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<td>- Engine, transmission, axle, pump, water tank serial numbers</td>
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<td>- Vehicle weight with and without water at time of delivery</td>
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<td>- Paint code information</td>
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<td>- Drawings, Photos</td>
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<td><strong>Parts Lists:</strong></td>
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<td>- Truck specific parts catalog</td>
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<td>- Exploded parts diagrams</td>
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<td>- On-line ordering system</td>
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<td>- Online order status tracking</td>
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<td><strong>Warranties:</strong></td>
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<td>- PDF copies of all applicable warranties</td>
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<td>- Expiration dates of all applicable warranties</td>
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<td></td>
<td>- Online warranty claim submittal</td>
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<td>- Online warranty tracking system</td>
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<td><strong>Technical Support:</strong></td>
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<td>- Training Manuals</td>
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<td>- Equipment publications</td>
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<td>- Product bulletins</td>
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<td>- Operator manuals</td>
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<td>The website will also feature electronic search tools to assist in locating information quickly.</td>
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| Nr  | Item                  | Requirements                                                                                                                                                                                                 | Complies? | List Deviations
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<tr>
<td>11.0</td>
<td>Additional Items</td>
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<tr>
<td>11.1</td>
<td>Burnover Protection</td>
<td>Furnish and install lagging materials manufactured by Storm King Mountain™ Technologies on all brake lines, fuel lines, hydraulic lines and electrical harnesses that could be immediately impacted in a burnover situation (i.e., those exposed at frame level and below).</td>
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<td>Bidders will describe the protection they intend to provide in their bid response.</td>
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| Nr  | Item                  | Requirements                                                                                                                                                                                                 | Complies? | List Deviations
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<td>11.2</td>
<td>Flashlights</td>
<td>Furnish and install one (1) Pelican® Fire Vulcan® #3715 LED in the cab area.</td>
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<td></td>
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<td>- Flashlight will include a 12VDC charger</td>
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<td></td>
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<td>- Body color will be yellow</td>
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<td>- Exact mounting location will be determined at pre-construction conference.</td>
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<td>Furnish and install one (1) Pelican® #9415 LED rechargeable flashlight.</td>
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<td>- Flashlight will include a 12VDC charger.</td>
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<td>- Body color will be yellow</td>
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<td>- Exact mounting location(s) will be determined at pre-construction conference.</td>
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| Nr  | Item                  | Requirements                                                                                                                                                                                                 | Complies? | List Deviations
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<td>11.3</td>
<td>Firefighting Equipment</td>
<td>Ladders:</td>
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<td>- One (1) Duo-Safety series 900A, 24 foot channel rail extension ladder.</td>
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<td>- One (1) Duo-Safety series 775A, 14 foot roof ladder.</td>
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<td>- One (1) Duo-Safety series 585A, 10 foot folding ladder</td>
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<td>11.4</td>
<td>Fuel Can</td>
<td>Provide one (1) Justrite safety can (1 gallon) Justrite UNJUS10368 for each unit.</td>
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| Nr  | Item                  | Requirements                                                                                                                                                                                                 | Complies? | List Deviations
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<td>11.5</td>
<td>Oxygen Bottle Holder</td>
<td>Fabricate and install an oxygen bottle holder to be mounted in the rearmost curbside compartment.</td>
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<td>Holder will be made of 2 cylindrical aluminum tubes, with the diameter of each tube just large enough to fit &quot;D&quot; sized cylinders.</td>
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<td>11.6</td>
<td>Key Hooks</td>
<td>Furnish and install three (3) heavy-duty key hooks in the officer’s seating area. Hooks will be mounted on the dashboard. Exact location to be determined during pre-construction conference.</td>
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<td>11.7</td>
<td>Trash Container</td>
<td>Fabricate an aluminum trash container to fit in the lower curbside cab compartment. Container will fit within the compartment, but will be removable for cleaning purposes. Size will be approximately 11” D by 11” W by 8” H.</td>
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<td>11.8</td>
<td>T-Card Holder</td>
<td>An aluminum pocket to hold a “T-Card” will be fabricated and installed on the officer side seat riser. The pocket will be 3.50” wide x 7.00” high x .50” deep and paint matched to interior paint color. Final placement to be determined during pre-construction conference.</td>
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<td>11.9</td>
<td>Binder Holder</td>
<td>Fabricate and install holder for operator’s binder in operator’s compartment, frontmost curbside, underneath middle shelf. Holder will hold standard binder and be fabricated from aluminum. Size will be approximately 12” long by 12” deep by 3 ½” thick. Final placement to be determined during pre-construction conference.</td>
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<td>11.10</td>
<td>Flare holder</td>
<td>Fabricate and install tray to hold flares/fuses in frontmost streetside, underneath middle shelf. Compartment. Holder will be fabricated from aluminum. Size will be 18” long by 12” deep by 3 ½” thick. Final placement to be determined during pre-construction conference.</td>
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<td>11.11</td>
<td>Map Book Holders</td>
<td>Fabricate and install two separate map book/binder holders. Both holders will be fabricated from sheet metal and painted to match cab interior color. Front map book holder: To be mounted in between driver and officer seating positions on top of engine cover. Size will be approximately 13” wide by 7” tall by 27” long. Map book holder will consist of five angles slots. Four of equal thickness and the fifth will be ¾” thick. This fifth slot will be for folding the Operator’s clipboard. Rear map book holder: To be mounted in rear of cab on rear wall, in between 4th firefighter’s seat (driver’s side) and fifth middle seat. Size will be approximately 13” wide by 6” deep by 24” tall. Holder will consist of four equal</td>
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| 11.12 | Rear Vision System | Furnish and install a Safety Vision® model color rear vision system. System shall include one (1) SV-LCD70BA 7" Color LCD and one (1) SV-620A Color camera.  
The system will consist of a 6.8" TFT LCD monitor with three (3) camera inputs,  
1/3" color CCD camera with built-in infra-red illuminators and microphone, and a  
65' video cable.  
The LCD monitor will be mounted overhead, within easy view of the driver. The  
camera will be flush mounted at the rear of the vehicle, below the hose bed area.  
The final configuration of the rear vision system will be determined at the pre-
construction conference. |           |                                       |
AGENDA DESCRIPTION:

Consideration and possible action to award a standard General Services contract to the lowest responsible bidder, Sierra School Equipment Company, for the Council Chambers Theater Seating Refinishing Project. Project No.: PW 15-29A. (Fiscal Impact: $38,178.00)

RECOMMENDED COUNCIL ACTION:

1. Authorize the City Manager to execute a standard General Services Agreement, in a form as approved by the City Attorney, with Sierra School Equipment Company, in the amount of $28,178.00;
2. Authorize additional funding for carpet materials and installation; or
3. Alternatively, discuss and take other action related to this item.

ATTACHED SUPPORTING DOCUMENTS:

FISCAL IMPACT: Budget Adjustment Required

Amount Budgeted: $0
Additional Appropriation: Yes $38,178.00
Account Number(s): 405-400-0000-6215 (Building Maintenance Fund)

ORIGINATED BY: Cheryl Ebert, Senior Civil Engineer
REVIEWED BY: Stephanie Katsouleas, Public Works Director
APPROVED BY: Greg Carpenter, City Manager

BACKGROUND AND DISCUSSION:

The City’s Council Chamber audience chairs have outlived their useful life and are in serious need of refurbishment or replacement. Staff considered both options and determined that refinishing the existing seating is the more desirable option given price, quality and preservation opportunity. Refurbishing entails overall stripping and refinishing the metal framing, reupholstering the fabric, replacement of seat cushions and seat backs, and sanding and re-staining the wooden armrests. Staff also recommends that during the removal and replacement process of the chairs, other facility upgrades be completed to capitalize on access and savings opportunities. This include carpet replacement and painting of the Council Chamber interior. The carpet is worn and could be replaced with a new selection consistent with the type and pattern used throughout City Hall and other City facilities. The interior brick could be painted to create an entirely new ambiance in the Council Chamber, one that is light and refreshing when compared to its current look. Please note that several walls of City Hall already have painted brick, and this proposal would be consistent with that look. The carpet and seat color palette is shown below, as well as examples of the lighter brick look.
The scope of work for this project requires both a General Services Agreement for the seating refurbishment and a Public Works Agreement for the carpet replacement and painting. As called for in the Purchasing section of the Municipal Code, staff advertised and received bids for the seating refurbishment. On January 11, 2016, the City Clerk received and opened four (4) bids as follows:

1. Rivera Bus & Coach Upholstery $23,560.00
2. Sierra School Equipment Company $28,178.00
3. Quality Custom Upholstery $36,500.00
4. A.J. Fistes Corporation $40,640.00

Staff reviewed the bid package submitted by the apparent lowest bidder, Rivera Bus & Coach Upholstery, and determined that it did not follow the bidding instructions or the addendum calling for line item bid amounts. In the interim, staff learned that the lead time for the chair fabric is 6-8 weeks, which means the cost of the fabric must be backed out of the bid amount and paid for separately by the city to make its installation deadline. It is not possible to do this with the low bidder because its rates were not itemized according to the instructions. However, the second low bidder, Sierra School Equipment Company, met the bidding requirements and its references were checked and found to be satisfactory. Please note that the carpet replacement and painting work bidding will be performed utilizing the Alternative Bidding procedures due to their low expected costs (estimated at less than 8,000 for both). Therefore, staff recommends that City Council:

1) Award the General Services Agreement to Sierra School Equipment Company in the amount of $28,178 for refurbishment of 62 theater style Council Chamber chairs.
2) Allocate an additional $10,000 to cover the cost of carpet replacement and painting of the Council Chamber auditorium as well as provide for additional contingencies.
3) Authorize a transfer from the General Fund to the Building Maintenance Account (405 Fund) to cover the cost of the project.
As planned, the entire project will take place between March 17, 2016 and April 3, 2016, which provides the contractors a three-week window between council meetings.
AGENDA DESCRIPTION:

Consideration and possible action to: 1) Introduce an ordinance to amend section 1-4-2 of the El Segundo Municipal Code ("ESMC") relating to the selection of the mayor and mayor pro tem; 2) Adopt a resolution amending City Council Resolution 4945 calling for the April 12, 2016 General Municipal Election, to amend the language in Section 1 to read "Vote for no more than three." (Fiscal Impact: None)

RECOMMENDED COUNCIL ACTION:

1. Introduce and waive the first reading of the ordinance;
2. Adopt the resolution
3. Alternatively discuss and take other action related to this item.

ATTACHED SUPPORTING DOCUMENTS:

1. Proposed ordinance
2. Proposed resolution

FISCAL IMPACT: N/A

ORIGINATED BY: Tracy Weaver, City Clerk

REVIEWED BY: City Attorney’s Office

APPROVED BY: Greg Carpenter, City Manager

BACKGROUND AND DISCUSSION:

Ordinance

The City’s municipal code currently requires the City Council to meet on the Tuesday after the City’s general municipal election and choose the mayor and mayor pro tem. Due to recent changes in state law, the results of the City’s general municipal election will not be certified in time to seat the newly elected Council Members the Tuesday following the election.

The recent changes in state law include:

1) Senate Bill No. 29 (Correa) now requires the City Clerk’s office to accept any vote by mail ballot up to three (3) days after Election Day, provided that the ballot was postmarked or signed by the voter on or before Election Day.

2) Assembly Bill No. 477 (Mullin) allows voters who failed to sign their Vote-By-Mail ballot envelope to turn in an “Unsigned Ballot Statement” or sign the envelope at the office of the City Clerk before 5pm up to eight (8) days after the election.
Amending the City's Municipal Code to allow for more time in calling the election is consistent with state law, which allows the City Council to meet no later than the fourth Friday after the election to declare the results (Elec. Code § 10263(b)). Accordingly, the City Clerk is requesting the City Council amend the Municipal Code to allow more flexibility in the scheduling of the meeting declaring the results of the election and choosing the mayor and mayor pro tem, to conform to state law.

Resolution

On November 17, 2015, the City Council adopted Resolution No. 4945, which called for a general municipal election to be held in the City of El Segundo on Tuesday, April 12, 2016, for the purpose of electing three members of the City Council to four year terms, one City Treasurer to a four year term and one City Clerk to a four year term. Section 1 of the resolution provided the exact form of the question to be voted on at the election and as it should appear on the ballot.

If adopted, the resolution will amend the form of the question, to make clear that voters may vote for up to three candidates for City Council. Accordingly the language is amended to appear as it should on the ballot to read as follows:

“FOR MEMBER OF THE CITY COUNCIL – Vote for no more than three.”

RECOMMENDATION:

For the foregoing reasons, staff recommends the City Council introduce the ordinance for first reading and adopt the resolution.
ORDINANCE NO.

AN ORDINANCE AMENDING SECTION 1-4-2 OF THE EL SEGUNDO MUNICIPAL CODE RELATING TO THE SELECTION OF THE CITY’S MAYOR AND MAYOR PRO TEM.

The City Council for the city of El Segundo does ordain as follows:

SECTION 1: The City Council finds and declares that:

A. The City’s code currently requires the City Council to meet on the Tuesday after the City’s general municipal election and choose the mayor and mayor pro tem;

B. Due to recent changes in state law, the results of the City’s general municipal election will not be certified in time to seat the newly elected council members on the Tuesday following the election; Senate Bill No. 29 (Correa) now requires the City Clerk’s office to accept any vote by mail ballot up to 3 days after election day, provided that the ballot was postmarked or signed by the voter on or before election day; Assembly Bill No. 477 (Mullin) allows voters who failed to sign their Vote-By-Mail ballot envelope to turn in an “Unsigned Ballot Statement” or sign the envelope at the office of the City Clerk up to 8 days after the election;

C. State law allows the City Council to meet no later than the fourth Friday after the election to declare the results (Elec. Code § 10263(b));

D. The City Council desires to amend the Code to allow more flexibility in the scheduling of the meeting declaring the results of the election and choosing the mayor and mayor pro tem, to conform to state law.

SECTION 2: Environmental Findings. Pursuant to the authority and criteria of the California Environmental Quality Act (CEQA), it can be seen with certainty that this project does not have the potential to cause significant effects on the environment and, therefore, the project is exempt from CEQA pursuant to 14 Cal. Code Regs. §15061(b)(3).

SECTION 3: Section 1-4-2 of the El Segundo Municipal Code is amended as follows:

1-4-2: SELECTION OF MAYOR AND MAYOR PRO TEM:

The city council shall meet on the Tuesday after the general municipal election. After the election results are certified by the City Clerk, the newly seated City Council shall meet and choose one of its number members as mayor, and one of its number members as mayor pro tem.
ORDINANCE NO.
PAGE 2 of 2

SECTION 4: If any part of this Ordinance or its application is deemed invalid by a court of competent jurisdiction, the city council intends that such invalidity will not affect the effectiveness of the remaining provisions or applications and, to this end, the provisions of this Ordinance are severable.

SECTION 5: The City Clerk is directed to certify the passage and adoption of this Ordinance; cause it to be entered into the City of El Segundo’s book of original ordinances; make a note of the passage and adoption in the records of this meeting; and, within fifteen (15) days after the passage and adoption of this Ordinance, cause it to be published or posted in accordance with California law.

SECTION 6: This Ordinance will become effective on the thirty-first (31st) day following its passage and adoption.

PASSED, APPROVED, AND ADOPTED this ___ day of ______________, 2016.

Suzanne Fuentes, Mayor

ATTEST:

Tracy Weaver, City Clerk

I HEREBY CERTIFY that the above and foregoing ordinance was duly passed and adopted by the El Segundo City Council at its regular meeting held on ______________, 2016 by the following vote, to wit:

AYES:
NOES:
ABSENT:
ABSTAIN:

APPROVED AS TO FORM:

Mark D. Hensley, City Attorney
RESOLUTION NO. _____

A RESOLUTION AMENDING RESOLUTION NO. 4945 REGARDING THE
APRIL 12, 2016 GENERAL MUNICIPAL ELECTION

The City Council of the city of El Segundo resolves as follows:

SECTION 1: On November 17, 2015, the City Council adopted Resolution No. 4945, which
called for a general municipal election to be held in the City of El Segundo on Tuesday, April
12, 2016, for the purpose of electing three members of the City Council to a four year terms,
one City Treasurer to a four year term and one City Clerk to a four year term. Section 1 of the
Resolution provided the exact form of the question to be voted on at the election and as it
should appear on the ballot.

SECTION 2: The City Council desires to amend the form of the question, to make clear that
voters may vote for up to three candidates for City Council. Accordingly, the language as it
should appear on the ballot is amended to read as follows:

"FOR MEMBER OF THE CITY COUNCIL- Vote for no more than three"

"FOR CITY TREASURER – Vote for one"

"FOR CITY CLERK – Vote for one"

SECTION 3: Except as modified by this Resolution, Resolution No. 4945 remains the same
and in effect.

SECTION 4: The City Clerk is authorized, instructed and directed to provide a copy of this
resolution to the Los Angeles County Registrar-Recorder’s office.

SECTION 5: This Resolution will become effective immediately upon adoption.

PASSED AND ADOPTED this _____ day of January, 2016.

Suzanne Fuentes, Mayor

ATTEST:

Tracy Weaver, City Clerk

APPROVED AS TO FORM:

Mark D. Hensley, City Attorney