SCOPE OF WORK

EV Charging Hub at Perry Street Lot

345 Perry Street
Trenton, Mercer County, NJ

Project No. A1413-00

STATE OF NEW JERSEY

Honorable Philip D. Murphy, Governor
Honorable Tahesha L. Way, Lt. Governor

DEPARTMENT OF THE TREASURY

Elizabeth Maher Muoio, Treasurer

DIVISION OF PROPERTY MANAGEMENT AND CONSTRUCTION

Christopher Chianese, Director

Date: August 19, 2024

Document Format Revision 8-1-2022

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I. OBJECTIVE

The objective of this project is to construct sixty-nine (69) dual head level 2 charging stations and two (2) dual head level 3 charging stations at the 345 Perry St. parking lot in Trenton. A feasibility study prepared by Mott Macdonald, dated June 2023, will be made available to the consultant.

II. CONSULTANT QUALIFICATIONS

A. CONSULTANT & SUB-CONSULTANT PRE-QUALIFICATIONS

The Consultant shall be a firm pre-qualified with the Division of Property Management & Construction (DPMC) in the following discipline(s):

- **P002 Electrical Engineering**

The Consultant shall also have in-house capabilities or Sub-Consultants pre-qualified with DPMC in:

- **P003 Civil Engineering**
- **P011 Environmental Engineering**
- **P025 Estimating/Cost Analysis**

As well as, **any and all** other Architectural, Engineering and Specialty Disciplines necessary to complete the project as described in this Scope of Work (SOW).

III. PROJECT BUDGET

A. CONSTRUCTION COST ESTIMATE (CCE)

The initial Construction Cost Estimate (CCE) for this project is $1,637,642.

The Consultant shall review this Scope of Work and provide a narrative evaluation and analysis of the accuracy of the proposed project CCE in its technical proposal based on its professional experience and opinion.

B. CURRENT WORKING ESTIMATE (CWE)

The Current Working Estimate (CWE) for this project is $2,235,381.

The CWE includes the construction cost estimate and all consulting, permitting and administrative fees.

The CWE is the client agency's financial budget based on this project Scope of Work and shall not be exceeded during the design and construction phases of the project unless DPMC approves the change in Scope of Work through a Contract amendment.

C. CONSULTANT'S FEES

The construction cost estimate for this project ***shall not*** be used as a basis for the Consultant's design and construction administration fees. The Consultant's fees shall be based on the information contained in this Scope of Work document and the observations made and/or the additional information received during the pre-proposal meeting.

IV. PROJECT SCHEDULE

A. SCOPE OF WORK DESIGN & CONSTRUCTION SCHEDULE

The following schedule identifies the estimated design and construction phases for this project and the estimated durations.

PROJECT PHASE	ESTIMATED DURATION (Calendar Days)
1. Site Access Approvals & Schedule Design Kick-off Meeting	**14**
2. Investigation Phase	**28**
• *Project Team & DPMC Plan/Code Unit Review & Comment*	14
3. Design Development Phase	**42**
• *Project Team & DPMC Plan/Code Unit Review & Comment*	14
4. Final Design Phase	**42**
• *Project Team & DPMC Plan/Code Unit Review & Approval*	14
5. Final Design Re-Submission to Address Comments	**7**
• *Project Team & DPMC Plan/Code Unit Review & Approval*	14
6. DCA Submission Plan Review	**30**
7. Permit Application Phase	**7**
• *Issue Plan Release*	

8. Bid Phase	**42**
9. Award Phase	**28**
10. Construction Phase	**450***
11. Project Close Out Phase	**30**

B. CONSULTANT'S PROPOSED DESIGN & CONSTRUCTION SCHEDULE

*Equipment lead times, such as transformers and panel boards, are expected to be 12 to 15 months. Construction phase duration to be adjusted accordingly dependent upon equipment lead times.

The Consultant shall submit a project design and construction schedule with its technical proposal that is similar in format and detail to the schedule depicted in **Exhibit 'A'**. The schedule developed by the Consultant shall reflect its recommended project phases, phase activities, activity durations.

A written narrative shall also be included with the technical proposal explaining the schedule submitted and the reasons why and how it can be completed in the time frame proposed by the Consultant.

This schedule and narrative will be reviewed by the Consultant Selection Committee as part of the evaluation process and will be assigned a score commensurate with clarity and comprehensiveness of the submission.

V. PROJECT SITE LOCATION & TEAM MEMBERS

A. PROJECT SITE ADDRESS

The location of the project site is:

Perry Street Parking Area 50
345 Perry Street
Trenton, NJ 08618

See **Exhibit 'B'** for the project site location map.

B. PROJECT TEAM MEMBER DIRECTORY

The following are the names, addresses, and phone numbers of the Project Team members.

1. DPMC Representative:

Name: William Golubinski, Manager
Energy Initiatives Unit
Address: Division of Property Management & Construction
20 West State Street, 3rd Floor
P.O. Box 235
Trenton, NJ 08625
Phone No: (609) 306-9854
E-Mail: william.golubinski@treas.nj.gov

2. Department of Treasury Representative:

Name: Amanda Truppa, Director, Division of Administration
Department of Treasury
Address: Division of Administration
P.O. Box 211
Trenton, NJ 08625-0211
Phone No: (609)633-2826
E-Mail: Amanda.Truppa@treas.nj.gov

VI. PROJECT DEFINITION

A. BACKGROUND

On January 17, 2020, Governor Phil Murphy signed comprehensive legislation (S2252) that establishes goals and incentives for the increased use of plug-in electric vehicles and infrastructure in New Jersey. NJ law will require 25% of state-owned non-emergency light duty vehicles to be plug in electric vehicles by 2025 and for 100% of vehicles to be plug in EV's by 2035. To meet these requirements, the State of New Jersey has initiated several projects to install EV chargers at various locations. One of those locations is at the Perry Street Lot (Parking Area 50) at 345 Perry Street in Trenton, New Jersey.

The NJ Department of Property Management and Construction procured the services of Mott MacDonald to provide a feasibility study to add EV charging stations to the site. The study by Mott MacDonald is shown in **Exhibit 'C'**.

The Division of Purchase and Property (DPP), under the State of New Jersey Treasury Department, has a working contract for the purchase of equipment with associated service contracts. Term Contract T3138 Electric Vehicle Service Equipment – Statewide is the title of the contract. The service agreement as part of the term contract with DPP enables the sharing of data even if a state vehicle uses a commercial charger (like the ones by eVgo or Chargepoint located throughout the State). Chargers shall be networked. "Dumb" chargers with no network capabilities will not be used. Chargepoint equipment will be the basis of design.

B. FUNCTIONAL DESCRIPTION OF THE SITE

1. Perry Street Parking Lot:

The Perry Street Parking Lot has a total of 580 parking spaces, 16 of which are reserved for ADA parking.

There is a utility pole with available medium voltage power located on Allen Street behind the building. The pole number is 67709TN. The utility in this area is PSE&G.

This project will be eligible for multiple EV incentives under programs by the utility company (PSEG) and NJ DEP.

At least 5% of the charging parking spaces to receive a level 2 charger shall be made accessible for people with disabilities. One of the level 3 charging spots shall be accessible. See the following link for guidelines.

https://dep.nj.gov/wp-content/uploads/drivegreen/ippi/accessibilityguidelines.pdf

2. Historic Fill:

The Department of Environmental Protection indicates that there is historic fill onsite. The consultant shall determine to what extent this will impact the project. Soil shall be tested in areas impacted by the project and clean fill brought in if necessary. Since the extent of any contamination from historic fill is unknown, the testing, design and construction administration for this will be managed through an allowance. See the following link.

https://njogis-newjersey.opendata.arcgis.com/datasets/3fb0f185db114e26abd05dcff79760d7_22/explore

3. Isles, Incorporated:

The State is leasing the southwest corner of the Perry Street Parking Lot to a non-profit known as Isles, Inc. to support an electric car ride share system for the City of Trenton. Design drawings

and a survey of the property were completed for this project and will be made available to the consultant for background. The Isles project should have no impact on this project.

VII. CONSULTANT DESIGN RESPONSIBILITIES

A. DESIGN REQUIREMENTS

The Consultant shall review the feasibility study by Mott MacDonald shown in **Exhibit 'C'** as a guide and provide design, specification, permit, bid/award and construction administration services to install sixty-nine (69) dual head level 2 charging stations and two (2) dual head level 3 charging stations in the Perry Street Lot. This is expected to include a 1000kVA utility transformer, 150kVA step-up transformer, distribution switchgear and four (4) branch circuit panel boards.

The Consultant shall be responsible for the following:

Coordination with utility company for new services as required.
Load calculations for use in designing load center, switchgear, distribution equipment etc.
Pedestal details to support charging stations.
Restriping of parking spaces as necessary.
Appropriate signage indicating EV charging spaces.
Restoration details.
Bollard design for charger protection.
Design of fencing repairs/modifications for isolation of pedestrian walkways and security.

At least five percent (5%) of the parking spaces served by the new EV chargers shall be accessible for people with disabilities. The spaces used for the level-3 chargers must be accessible.

B. ENVIRONMENTAL ALLOWANCE

The Consultant shall estimate the costs associated with the potential requirement to test the soil in areas impacted by the project and provide design and construction administration services that address remedial actions necessary and enter that amount in their fee proposal line item entitled **"Environmental Allowance".**

Any funds remaining in the allowance account will be returned to the State at the close of the project.

C. DESIGN MEETINGS & PRESENTATIONS

1. Design Meetings:

Conduct the appropriate number of review meetings with the Project Team members during each design phase of the project so they may determine if the project meets their requirements, question any aspect of the contract deliverables, and make changes where appropriate. The Consultant shall describe the philosophy and process used in the development of the design criteria and the various alternatives considered to meet the project objectives. Selected studies, sketches, cost estimates, schedules, and other relevant information shall be presented to support the design solutions proposed. Special considerations shall also be addressed such as: Contractor site access limitations, utility shutdowns and switchover coordination, phased construction and schedule requirements, security restrictions, available swing space, material and equipment delivery dates, etc.

It shall also be the responsibility of the Consultant to arrange and require all critical Sub-Consultants to be in attendance at the design review meetings.

Record the minutes of each design meeting and distribute within three (3) calendar days to all attendees and those persons specified to be on the distribution list by the Project Manager.

2. Design Presentations:

The minimum number of design presentations required for each phase of this project is identified below for reference:

Investigation Phase: One (1) oral presentation at phase completion.

Design Development Phase: One (1) oral presentation at phase completion.

Final Design Phase: One (1) oral presentation at phase completion.

D. EXISTING DOCUMENTATION

Copies of the following documents will be provided to each Consulting firm at the pre-proposal meeting to assist in the bidding process.

- DPMC Project A0562-01: Perry Street Parking Lot, As-Built 11/15/89
- Various Documents from Isles of Trenton EV Project.

Review these documents and any additional information that may be provided at a later date such as reports, studies, surveys, equipment manuals, as-built drawings, etc. The State does not attest to the accuracy of the information provided and accepts no responsibility for the consequences of

errors by the use of any information and material contained in the documentation provided. It shall be the responsibility of the Consultant to verify the contents and assume full responsibility for any determination or conclusion drawn from the material used. If the information provided is insufficient, the Consultant shall take the appropriate actions necessary to obtain the additional information required.

All original documentation shall be returned to the provider at the completion of the project.

VIII. PERMITS & APPROVALS

A. NJ UNIFORM CONSTRUCTION CODE PLAN REVIEW AND PERMIT

The project construction documents must comply with the latest adopted edition of the NJ Uniform Construction Code (NJUCC).

The latest NJUCC Adopted Codes and Standards can be found at:

http://www.state.nj.us/dca/divisions/codes/codreg/

1. NJ Uniform Construction Code (NJUCC) Plan Review

Consultant shall estimate the cost of the NJUCC Plan Review by DCA and include that amount in their fee proposal line item entitled **"Plan Review and Permit Fee Allowance"**, refer to paragraph X.A.

Upon approval of the Final Design Phase Submission by DPMC, the Consultant shall submit the construction documents to the Department of Community Affairs (DCA), Bureau of Construction Project Review to secure a complete plan release.

As of July 25, 2022, the Department of Community Affairs (DCA) is only accepting digital signatures and seals issued from a third party certificate authority.

Procedures for submission to the DCA Plan Review Unit can be found at:

https://www.state.nj.us/dca/divisions/codes/forms/pdf_bcpr/pr_app_guide.pdf

Consultant shall complete the "Project Review Application" and include the following on Block 5 as the "Owner's Designated Agent Name":

Joyce Spitale, DPMC
PO Box 235
Trenton, NJ 08625-0235
Joyce.Spitale@treas.nj.gov 609-943-5193

The Consultant shall complete the NJUCC "Plan Review Fee Schedule", determine the fee due and pay the NJUCC Plan Review fees, refer to Paragraph X.A.

The NJUCC "Plan Review Fee Schedule" can be found at:

http://www.state.nj.us/dca/divisions/codes/forms/pdf_bcpr/pr_fees.pdf

2. NJ Uniform Construction Code Permit

Upon receipt of a complete plan release from the DCA Bureau of Construction Project Review, the Consultant shall complete the NJUCC permit application and all applicable technical sub-code sections. The "Agent Section" of the application and certification section of the building sub-code section shall be signed. These documents, with **six (6) sets of DCA approved, signed and sealed construction documents** shall be forwarded to the DPMC Project Manager.

The Consultant may obtain copies of all NJUCC permit applications at the following website:

https://www.nj.gov/dca/divisions/codes/resources/constructionpermitforms.html

All other required project permits shall be obtained and paid for by the Consultant in accordance with the procedures described in Paragraph VIII.B.

3. Prior Approval Certification Letters:

The issuance of a construction permit for this project may be contingent upon acquiring various "prior approvals" as defined by N.J.A.C. 5:23-1.4. It is the Consultant's responsibility to determine which prior approvals, if any, are required. The Consultant shall submit a general certification letter to the DPMC Plan & Code Review Unit Manager during the Permit Phase of this project that certifies all required prior approvals have been obtained.

In addition to the general certification letter discussed above, the following specific prior approval certification letters, where applicable, shall be submitted by the Consultant to the DPMC Plan & Code Review Unit Manager: Soil Erosion & Sediment Control, Water & Sewer Treatment Works Approval, Coastal Areas Facilities Review, Compliance of Underground Storage Tank Systems with N.J.A.C. 7:14B, Pinelands Commission, Highlands Council, Well Construction and Maintenance; Sealing of Abandoned Wells with N.J.A.C. 7:9D, Certification that all utilities have been disconnected from structures to be demolished, Board of Health Approval for Potable Water Wells, Health Department Approval for Septic Systems. It shall be

noted that in accordance with N.J.A.C. 5:23-2.15(a)5, a permit cannot be issued until the letter(s) of certification is received.

4. Multi-building or Multi-site Permits:

A project that involves many buildings and/or sites requires that a separate permit shall be issued for each building or site. The Consultant must determine the construction cost estimate for *each* building and/or site location and submit that amount where indicated on the permit application.

5. Special Inspections:

In accordance with the requirements of the New Jersey Uniform Construction Code N.J.A.C. 5:23-2.20(b), Bulletin 03-5 and Chapter 17 of the International Building Code, the Consultant shall be responsible for the coordination of all special inspections during the construction phase of the project.

Bulletin 03-5 can be found at:

http://www.state.nj.us/dca/divisions/codes/publications/pdf_bulletins/b_03_5.pdf

a. Definition:

Special inspections are defined as an independent verification by a certified special inspector for **Class I buildings and smoke control systems in any class building**. The special inspector is to be independent from the Contractor and responsible to the Consultant so that there is no possible conflict of interest.

Special inspectors shall be certified in accordance with the requirements in the New Jersey Uniform Construction Code.

b. Responsibilities:

The Consultant shall submit with the permit application, a list of special inspections and the agencies or special inspectors that will be responsible to carry out the inspections required for the project. The list shall be a separate document, on letter head, signed and sealed.

B. OTHER REGULATORY AGENCY PERMITS, CERTIFICATES AND APPROVALS

The Consultant shall identify and obtain all other State Regulatory Agency permits, certificates, and approvals that will govern and affect the work described in this Scope of Work. An itemized list of these permits, certificates, and approvals shall be included with the Consultant's Technical

Proposal and the total amount of the application fees should be entered in the Fee Proposal line item entitled, **"Plan Review and Permit Fee Allowance."**

The Consultant may refer to the Division of Property Management and Construction "Procedures for Architects and Engineers Manual", Paragraph "**9. REGULATORY AGENCY APPROVALS"** which presents a compendium of State permits, certificates, and approvals that may be required for this project.

The Consultant shall determine the appropriate phase of the project to submit the permit application(s) in order to meet the approved project milestone dates.

Where reference to an established industry standard is made, it shall be understood to mean the most recent edition of the standard unless otherwise noted. If an industry standard is found to be revoked, or should the standard have undergone substantial change or revision from the time that the Scope of Work was developed, the Consultant shall comply with the most recent edition of the standard.

IX. ENERGY REBATE AND INCENTIVE PROGRAMS

The Consultant shall review any and all programs on the State and Federal level to determine if any proposed upgrades to the mechanical and/or electrical equipment and systems for this project qualify for approved rebates and incentives.

The Consultant shall review the programs available on the "New Jersey's Clean Energy Program" website at: http://www.njcleanenergy.com as well as federal websites and New Jersey electric and gas utility websites to determine if and how they can be applied to this project.

The Consultant shall identify all applicable rebates and incentives in their technical proposal and throughout the design phase.

The Consultant shall be responsible to complete the appropriate registration forms and applications, provide any applicable worksheets, manufacturer's specification sheets, calculations, attend meetings, and participate in all activities with designated representatives of the programs and utility companies to obtain the entitled financial incentives and rebates for this project.

All costs associated with this work shall be estimated by the Consultant and the amount included in the base bid of its fee proposal.

X. ALLOWANCES

A. PLAN REVIEW AND PERMIT FEE ALLOWANCE

The Consultant shall obtain and pay for all of the project permits in accordance with the guidelines identified below.

1. Permits:

The Consultant shall determine the various permits, certificates, and approvals required to complete this project.

2. Permit Costs:

The Consultant shall estimate the application fee costs for all of the required project permits, certificates, and approvals (excluding the NJ Uniform Construction Code permit) and include that amount in its fee proposal line item entitled **"Plan Review and Permit Fee Allowance"**. A breakdown of each permit and application fee shall be attached to the fee proposal for reference.

NOTE: The NJ Uniform Construction Code permit is excluded since it will be paid for by the State.

3. Applications:

The Consultant shall complete and submit all permit applications to the appropriate permitting authorities and the costs shall be paid from the Consultant's permit fee allowance. A copy of the application(s) and the original permit(s) obtained by the Consultant shall be given to the DPMC Project Manager for distribution during construction.

4. Consultant Fee:

The Consultant shall determine what is required to complete and submit the permit applications, obtain supporting documentation, attend meetings, etc., and include the total cost in the base bid of its fee proposal under the "Permit Phase" column.

Any funds remaining in the permit allowance will be returned to the State at the close of the project.

B. ENVIRONMENTAL ALLOWANCE

The Consultant shall estimate the costs associated with the potential requirement to test the soil in areas impacted by the project and provide design and construction administration services that

address remedial actions necessary and enter that amount in their fee proposal line item entitled **"Environmental Allowance".**

Any funds remaining in the allowance account will be returned to the State at the close of the project.

XI. SOW SIGNATURE APPROVAL SHEET

This Scope of Work shall not be considered a valid document unless all signatures appear in each designated area below.

The client agency approval signature on this page indicates that they have reviewed the design criteria and construction schedule described in this project Scope of Work (including the subsequent contract deliverables and exhibits) and verifies that the work will not conflict with the existing or future construction activities of other projects at the site.

SOW APPROVED BY: James Wright 8/19/2024

JAMES WRIGHT, MANAGER DATE
DPMC PROJECT PLANNING & INITIATION

SOW APPROVED BY: 8/29/2024

WILLIAM GOLUBINSKI, PROJECT MANAGER DATE
DPMC PROJECT MANAGEMENT GROUP

SOW APPROVED BY: 9/19/24

AMANDA TRUPPA, DIRECTOR DATE
DEPARTMENT OF TREASURY

SOW APPROVED BY: Jeanette M Barnard 9.19.24

JEANETTE BARNARD, DEPUTY DIRECTOR DATE
DIV PROPERTY MGT & CONSTRUCTION

XII. CONTRACT DELIVERABLES

The following are checklists listing the Contract Deliverables that are required at the completion of each phase of this project. The Consultant shall refer to the DPMC publication entitled "Procedures for Architects and Engineers," 3.0 Edition, dated September 2022 available at https://www.nj.gov/treasury/dpmc/Assets/Files/ProceduresforArchitectsandEngineers.pdf for a detailed description of the deliverables required for each submission item listed. References to the applicable paragraphs of the "Procedures for Architects and Engineers" are provided.

Note that the Deliverables Checklist may include submission items that are "S.O.W. Specific Requirements". These requirements will be defined in the project specific scope of work and included on the deliverables checklist.

This project includes the following phases with the deliverables noted as "Required by S.O.W" on the Deliverables Checklist:

- **INVESTIGATION PHASE**
- **DESIGN DEVELOPMENT PHASE**
- **FINAL DESIGN PHASE**
- **PERMIT APPLICATION PHASE**
- **BIDDING AND CONTRACT AWARD**
- **CONSTRUCTION PHASE**
- **PROJECT CLOSE-OUT PHASE**

XIII. EXHIBITS

A. SAMPLE PROJECT SCHEDULE FORMAT
B. PROJECT SITE LOCATION MAP
C. FEASIBILITY STUDY

END OF SCOPE OF WORK

DPMC Project No.: A1413-00

Deliverables Checklist
Investigation Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Included	
		Yes	No	Yes	No	Yes	No
11.5.1.	A/E Statement of Site Visit						
11.5.2	Narrative Description of Project						
11.5.3.	Space Analysis						
11.5.4.	Special Features						
11.5.5.	Site Evaluation						
11.5.6.	Subsurface Investigation						
11.5.7.	Surveys						
11.5.8.	Arts Inclusion						
11.5.9.	Design Rendering						
11.5.10.	Regulatory Approvals						
11.5.11.	Utility Availability						
11.5.12.	Diagrammatic Sketches/Drawings (6 Sets)						
11.5.13.	Specifications (6 Sets)						
11.5.14.	Current Working Estimate/Cost Analysis						
11.5.15.	Project Schedule						
11.5.16.	Formal Presentation						
11.5.17.	Scope of Work Compliance Statement						
11.5.18.	Investigation Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

DPMC Project No.: A1413-00

Deliverables Checklist
Design Development Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
14.4.1.	A/E Statement of Site Visit						
14.4.2.	Narrative Description of Project						
14.4.3.	Building Code Information Questionnaire						
14.4.4.	Space Analysis						
14.4.5.	Special Features						
14.4.6.	Catalog Cuts						
14.4.7.	Site Evaluation						
14.4.8.	Subsurface Investigation						
14.4.9.	Surveys						
14.4.10.	Arts Inclusion						
14.4.11.	Design Rendering						
14.4.12.	Regulatory Approvals						
14.4.13.	Utility Availability						
14.4.14.	Drawings (6 Sets)						
14.4.15.	Specifications (6 Sets)						
14.4.16.	Current Working Estimate/Cost Analysis						
14.4.17.	Project Schedule						
14.4.18.	Formal Presentation						
14.4.19.	Plan Review/Scope of Work Compliance Statement						
14.4.20.	Design development Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

DPMC Project No.: A1413-00

Deliverables Checklist
Final Design Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
15.4.1.	A/E Statement of Site Visit						
15.4.2.	Narrative Description of Project						
15.4.3.	Building Code Information Questionnaire						
15.4.4.	Space Analysis						
15.4.5.	Special Features						
15.4.6.	Catalog Cuts						
15.4.7.	Site Evaluation						
15.4.8.	Subsurface Investigation						
15.4.9.	Surveys						
15.4.10.	Arts Inclusion						
15.4.11.	Design Rendering						
15.4.12.	Regulatory Approvals						
15.4.13.	Utility Availability						
15.4.14.	Drawings (6 Sets)						
15.4.15.	Specifications (6 Sets)						
15.4.16.	Current Working Estimate/Cost Analysis						
15.4.17.	Project Schedule						
15.4.18.	Formal Presentation						
15.4.19.	Plan Review/Scope of Work Compliance Statement						
15.4.20.	Final Design Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

DPMC Project No.: A1413-00

Deliverables Checklist
Permit Application Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
16.1.	N.J. UCC Permit Application						
16.4.	Drawings, Signed and Sealed (6 Sets)						
16.5.	Specifications, Signed and Sealed (6 Sets)						
16.6.	Current Working Estimate/Cost Analysis						
16.7.	Project Schedule						
16.8.	Plan Review/Scope of Work Compliance Statement						
16.9.	Permit Application Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC Project Manager the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

DPMC Project No.: A1413-00

Deliverables Checklist
Bidding and Contract Award Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
17.1.1.	Notice of Advertising						
17.1.2.	Bid Proposal Form						
17.1.3.	Bid Clearance Form						
17.1.4.	Drawings (6 Sets)						
17.1.5.	Specifications (6 Sets)						
17.1.6.	Construction Schedule						
17.3	Pre-Bid Conference/Mandatory Site Visit						
17.3.1.	Meeting Minutes						
17.4	Bulletins						
17.5	Post Bid Meeting						
17.6.	Contract Award "Letter of Recommendation"						
17.8.	Bid Protests - Hearings						
17.9.	Bidding and Contract Award Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

DPMC Project No.: A1413-00

Deliverables Checklist
Construction Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
18.2.	Pre-Construction Meeting						
18.3.	Submittal Log						
18.4.	Construction Schedule						
18.5.	Project Progress Meetings						
18.7.	Contractor's Invoicing and Payment Process						
18.8.	Contractor Submittals						
18.10.	Testing						
18.11.	Shop Drawings (6 Sets)						
18.12.	As-Built & Record Set Drawings (6 Sets)						
18.13.	Change Orders						
18.14.	Construction Photographs						
18.15.	Field Observations						
18.17.	Construction Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

DPMC Project No.: A1413-00

Deliverables Checklist
Project Close-Out Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
19.3.	Development of Punch List and Inspection Reports						
19.5.	Determination of Substantial Completion						
19.6.	Correction/Completion of Punch List						
19.7.	Submission of Close-Out Documentation						
19.7.1.	As-Built and Record Sets of Drawing (6 Sets)						
19.8.	Final Payment						
19.9.1.	Contractors Final Payment						
19.9.2.	A/E's Final Payment						
19.10.	Project Close-Out Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

February 7, 1997
Rev.: January 29, 2002

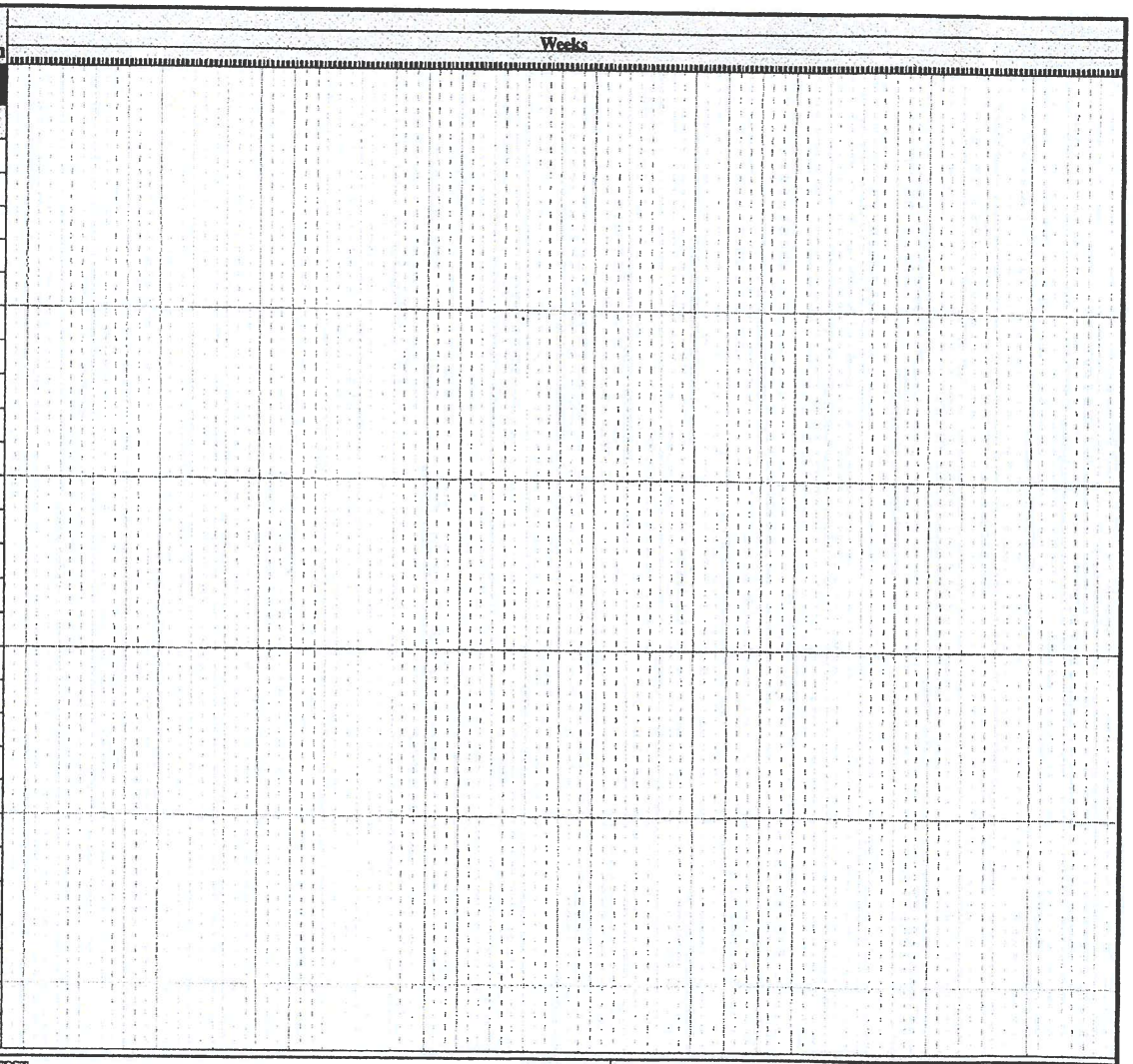
Responsible Group Code Table

The codes below are used in the schedule field "GRP" that identifies the group responsible for the activity. The table consists of groups in the Division of Property Management & Construction (DPMC), as well as groups outside of the DPMC that have responsibility for specific activities on a project that could delay the project if not completed in the time specified. For reporting purposes, the groups within the DPMC have been defined to the supervisory level of management (i.e., third level of management, the level below the Associate Director) to identify the "functional group" responsible for the activity.

CODE	DESCRIPTION	REPORTS TO ASSOCIATE DIRECTOR OF:
CM	Contract Management Group	Contract Management
CA	Client Agency	N/A
CSP	Consultant Selection and Prequalification Group	Technical Services
A/E	Architect/Engineer	N/A
PR	Plan Review Group	Technical Services
CP	Construction Procurement	Planning & Administration
CON	Construction Contractor	N/A
FM	Financial Management Group	Planning & Administration
OEU	Office of Energy and Utility Management	N/A
PD	Project Development Group	Planning & Administration

EXHIBIT 'A'

Activity ID	Description	Rspn
<PROJ>		
Design		
CV3001	Schedule/Conduct Predesign/Project Kick-Off Mtg.	CM
CV3020	Prepare Program Phase Submittal	AE
CV3021	Distribute Program Submittal for Review	CM
CV3027	Prepare & Submit Project Cost Analysis (DPMC-38)	CM
CV3022	Review & Approve Program Submittal	CA
CV3023	Review & Approve Program Submittal	PR
CV3024	Review & Approve Program Submittal	CM
CV3025	Consolidate & Return Program Submittal Comments	CM
CV3030	Prepare Schematic Phase Submittal	AE
CV3031	Distribute Schematic Submittal for Review	CM
CV3037	Prepare & Submit Project Cost Analysis (DPMC-38)	CM
CV3032	Review & Approve Schematic Submittal	CA
CV3033	Review & Approve Schematic Submittal	PR
CV3034	Review & Approve Schematic Submittal	CM
CV3035	Consolidate & Return Schematic Submittal Comment	CM
CV3040	Prepare Design Development Phase Submittal	AE
CV3041	Distribute D. D. Submittal for Review	CM
CV3047	Prepare & Submit Project Cost Analysis (DPMC-38)	CM
CV3042	Review & Approve Design Development Submittal	CA
CV3043	Review & Approve Design Development Submittal	PR
CV3044	Review & Approve Design Development Submittal	CM
CV3045	Consolidate & Return D.D. Submittal Comments	CM
CV3050	Prepare Final Design Phase Submittal	AE
CV3051	Distribute Final Design Submittal for Review	CM
CV3052	Review & Approve Final Design Submittal	CA
CV3053	Review & Approve Final Design Submittal	PR
CV3054	Review Final Design Submitl for Constructability	OCS



NOTE:
Refer to section "IV Project Schedule" of the Scope of Work for contract phase durations.

DBCA - TEST

Sheet 1 of 3

Bureau of Design & Construction Services

EXHIBIT 'A'

Activity ID	Description	Rspn	Weeks
CV3055	Review & Approve Final Design Submittal	CM	
CV3056	Consolidate & Return Final Design Comments	CM	
CV3060	Prepare & Submit Permit Application Documents	AE	
CV3068	Prepare & Submit Bidding Cost Analysis (DPMC-38)	CM	
Plan Review-Permit Acquisition			
CV4001	Review Constr. Documents & Secure UCC Permit	PR	
CV4010	Provide Funding for Construction Contracts	CA	
CV4020	Secure Bid Clearance	CM	
Advertise-Bid-Award			
CV5001	Advertise Project & Bid Construction Contracts	CP	
CV5010	Open Construction Bids	CP	
CV5011	Evaluate Bids & Prep. Recommendation for Award	CM	
CV5012	Evaluate Bids & Prep. Recommendation for Award	AE	
CV5014	Complete Recommendation for Award	CP	
CV5020	Award Construction Contracts/Issue NTP	CP	
Construction			
CV6000	Project Construction Start/Issue NTP	CM	
CV6001	Contract Start/Contract Work (25%) Complete	CON	
CV6002	Preconstruction Meeting	CM	
CV6003	Begin Preconstruction Submittals	CON	
CV6004	Longest Lead Procurement Item Ordered	CON	
CV6005	Lead Time for Longest Lead Procurement Item	CON	
CV6006	Prepare & Submit Shop Drawings	CON	
CV6007	Complete Construction Submittals	CON	
CV6011	Roughing Work Start	CON	
CV6012	Perform Roughing Work	CON	
CV6010	Contract Work (50%+) Complete	CON	
CV6013	Longest Lead Procurement Item Delivered	CON	
CV6020	Contract Work (75%) Complete	CON	

NOTE:
Refer to section "IV Project Schedule" of the Scope of Work for contract phase durations.

DBCA - TEST

Sheet 2 of 3

Bureau of Design & Construction Services

EXHIBIT 'A'

Activity ID	Description	Rspn	Weeks
CV6014	Roughing Work Complete	CON	
CV6021	Interior Finishes Start	CON	
CV6022	Install Interior Finishes	CON	
CV6030	Contract Work to Substantial Completion	CON	
CV6031	Substantial Completion Declared	CM	
CV6075	Complete Deferred Punch List/Seasonal Activities	CON	
CV6079	Project Construction Complete	CM	
CV6080	Close Out Construction Contracts	CM	
CV6089	Construction Contracts Complete	CM	
CV6090	Close Out A/E Contract	CM	
CV6092	Project Completion Declared	CM	

NOTE:
Refer to section "IV Project Schedule" of the Scope of Work for contract phase durations.

DBCA - TEST

Sheet 3 of 3

Bureau of Design & Construction Services

EXHIBIT 'A'

Project Site Location Map

Perry Street Parking Lot

EXHIBIT ‘B’

MOTT MACDONALD

DPMC EV Charging Stations Feasibility Study

345 Perry St.
Trenton, NJ 08618

June 2023

EXHIBIT 'C'

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EXHIBIT 'C'

Mott MacDonald
111 Wood Avenue South
Iselin
NJ 08830-4112
United States of America

T +1 (800) 832 3272
mottmac.com

Department of Project Management and Construction
33 W State St., Trenton, NJ 08608

DPMC EV Charging Stations Feasibility Study

345 Perry St.
Trenton, NJ 08618

June 2023

EXHIBIT 'C'

Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
0	4/24/2023	E.Conticchio	I.Bondar	I.Bondar	Draft Submission
1	6/2/2023	E.Conticchio	I.Bondar	I.Bondar	Final Submission

Document reference: 507100963-018 |

Information class: Standard

Contents

EXHIBIT 'C'

Executive summary

The New Jersey Department of Property Management and Construction has contracted Mott MacDonald to conduct a feasibility study for the installation of Electric Vehicle (EV) charging stations at 345 Perry St. in Trenton, NJ. A site visit survey was conducted by Mott MacDonald and PSEG on April 6, 2023 at the site and electrical information was collected at that time. The following report outlines existing conditions, design discussion, and recommendations for the installation of sixty-nine Level 2 EV Charging stations and two Level 3 EV Charging stations. This report is not to be used for construction purposes.

EXHIBIT 'C'

1 Design Requirements and Assumptions

1.1 Applicable Codes

2020 NFPA 70 National Electrical Code

2021 International Green Construction Code

1.2 Existing Conditions

352 Perry St. has a total of 580 parking spaces, 16 of which are reserved for ADA parking. There is a utility pole with available medium voltage power located on Allen St. behind the building. The pole number is 67709TN. The utility in this area is PSE&G.

1.3 Basis of Design

Mott MacDonald has selected Chargepoint as the manufacturer for the basis of design. Chargepoint offers Level 2 and Level 3 electric vehicle chargers as required by DPMC. Both chargers offer a 2 port design and various electrical input options.

Left – Chargepoint CT4000 Level 2 Charger, Right – Chargepoint Express 250 Level 3 Charger

EXHIBIT 'C'

In the case of the CT4000, we would select the standard electrical input for dual port design, table shown below. This option requires two 40A, 2 Pole circuit breakers drawing 30A for each circuit.

Electrical Input	Single Port (AC Voltage 208/240V AC)			Dual Port (AC Voltage 208/240V AC)		
	Input Current	Input Power Connection	Required Service Panel Breaker	input Current	Input Power Connection	Required Service Panel Breaker
Standard	30A	One 40A branch circuit	40A dual pole (non-GFCI type)	30A x 2	Two independent 40A branch circuits	40A dual pole (non-GFCI type) x 2
Standard Power Share	n/a	n/a	n/a	32A	One 40A branch circuit	40A dual pole (non-GFCI type)
Power Select 24A	24A	One 30A branch circuit	30A dual pole (non-GFCI type)	24A x 2	Two independent 30A branch circuits	30A dual pole (non-GFCI type) x 2
Power Select 24A Power Share	n/a	n/a	n/a	24A	One 30A branch circuit	30A dual pole (non-GFCI type)
Power Select 16A	16A	One 20A branch circuit	20A dual pole (non-GFCI type)	16A x 2	Two independent 20A branch circuits	20A dual pole (non-GFCI type) x 2
Power Select 16A Power Share	n/a	n/a	n/a	16A	One 20A branch circuit	20A dual pole (non-GFCI type)
Service Panel GFCI	Do not provide external GFCI as it may conflict with internal GFCI (CCID)					
Wiring - Standard	3-wire (L1, L2, Earth)			5-wire (L1, L1, L2, L2, Earth)		
Wiring - Power Share	n/a			3-wire (L1, L2, Earth)		
Station Power	8 W typical (standby), 15 W maximum (operation)					

The Express 250 only has one viable option of 480V, 3 Phase power drawing 80A.

Station Electrical Input

Input Rating	400V AC, 3-phase, 96A, 50 Hz 480Y/277V AC, 3-phase, 80A, 60 Hz
Wiring	L1, L2, L3, Neutral & Earth

1.4 Electrical Load

Using the chargers listed under section 2.2, sixty-nine Level 2 Chargers will draw approximately 860kVA whereas two Level 3 Charger will draw approximately 133kVA, both conditions under full load. A worst case scenario situation puts the full electrical load at approximately 993kVA.

Assumption 1: The Level 2 chargers will be fully utilized overnight to recharge all vehicles returned at close of business.

Assumption 2: The Level 3 chargers will only be used during the day for quick charges. This will become our Level 3 Charger demand factor for business hours.

Assumption 3: - A percentage of Level 2 chargers will be utilized during the day for vehicles not in use during business hours. This will not equal the load under assumption 1.

Under these assumptions, the highest demand will be during close of business where the electrical load for Level 2 charging will be 860kVA and level 3 Charging will be 0kVA equating to 860kVA total demand load.

EXHIBIT 'C'

2 Design Approach Options

2.1 Option 1 – No Phasing

With the loads determined in section 2.3, a load letter has been submitted to PSE&G indicating the total calculated demand load, utility pole number, and cross street information. An overhead service will be requested from Allen St. to the center of the parking lot as indicated in the attached sketch. Refer to appendix A for sketches.

Electrical equipment will be installed at the center of the parking lot including a 1MVA utility transformer, utility meters, switchgear, and distribution equipment. A New utility pole will be erected at the east end of Allen St., along the fence line. In addition, the existing pole in the center of the parking lot will be slightly relocated to accommodate the transformer. New medium voltage wiring will be provided to the utility transformer, and new low voltage (208/120V) wiring will be provided to the switchgear and distribution equipment. As the Level 3 chargers require a higher voltage, a step-up 150kVA transformer and separate distribution equipment will be provided to accommodate the required 480V, 3 phase power. There will be two utility meters installed, one for the level 2 chargers and one for the level 3 chargers. This area will be protected with bollards. Refer to Appendix B for sketches.

2.2 Option 2 – Phased Approach

This option will have the same distribution equipment stated in section 3.1. However, the following infrastructure will be installed during phase 1:

- Utility Poles
- Utility Transformer
- Electrical Distribution Switchboard (Including circuit breaker provisions for phase 2)
- Bollards
- Vertical Spine Electrical Branch Circuit Equipment
- Level 2 Chargers for Vertical Spine
- Associated underground conduit and wiring for vertical spine

The following infrastructure will be installed during phase 2:

- Step-Up Transformer
- Horizontal Spine Electrical Branch Circuit Equipment
- Level 2 and Level 3 Chargers for Horizontal Spine
- Associated underground conduit and wiring for horizontal spine

2.3 EV Incentives

This project will be eligible for multiple EV incentives under programs by the utility company (PSEG) and NJ DEP.

PSEG offers both customer make ready and utility upgrade incentives based on the types of chargers installed. On the customer make ready side, PSEG offers a $7,500 per level 2 charger and $25,000 per level 3 charger for up to 4 chargers in both cases. On the utility upgrade side, PSEG offers a deposit discount of $10,000 for level 2 charger installation and $50,000 for level 3 charger installation. Total customer make ready side incentive equals $30,000 for level 2 chargers and $50,000 for level chargers, for a total of $80,000 back on

construction costs to prepare the customer site ready for EV use. Total utility upgrade deposit rebate equals $60,000 for the installation of the service and transformer by the utility company.

NJ DEP offers, in the case of this project, $4,000 towards the purchase of each fleet level 2 charger and $50,000 towards the purchase of each level 3 charger. They also offer up to $5,000 towards make-ready for each fleet level 2 charger and $50,000 towards make-ready for each level 3 charger. NJ DEP bases their caps on population of the municipality served. The population of Trenton (approximately 90,000) puts this project at the highest cap of eight level 2 chargers. For level 3 chargers, the cap is set at four level 3 chargers. In total, this project would be eligible for $32,000 back on the purchase of eight level 2 chargers and $100,000 back on two level 3 chargers. This project would also be eligible for $40,000 back on make-ready for eight level 2 chargers and $100,000 back on level 3 chargers.

A. Cost Estimate

EXHIBIT 'C'

Date:4/21/23

COST ESTIMATE

Client: DPMC
Project: EV Charging Feasibility Study
Discipline : **Electrical**

Description: 352 Perry St. EV Charging
Prepared By: IB, EJC

Item #	Description	Quantity		Unit Price $		Total $		Total
		Amt	Unit	Material	Labor	Material	Labor	
1	PSE&G Deposit	1	LS	$ -	$ 48,180	$ -	$ 48,180	$ 48,180
2	Utility Pole	1	EA	$ 500	$ 750	$ 500	$ 750	$ 1,250
3	Relocate Existing Utility Pole	1	EA	$ -	$ 1,200	$ -	$ 1,200	$ 1,200
4	Utility Transformer - 1000kVA	1	EA	$ 100,000	$ 6,000	$ 100,000	$ 6,000	$ 106,000
5	Step-up Transformer - 150kVA	1	EA	$ 20,000	$ 2,400	$ 20,000	$ 2,400	$ 22,400
6	Distribution Switchgear	1	EA	$ 10,000	$ 2,400	$ 10,000	$ 2,400	$ 12,400
7	Branch Circuit Panelboard	4	EA	$ 2,400	$ 1,200	$ 9,600	$ 4,800	$ 14,400
8	Level 2 Charger	69	EA	$ 11,000	$ 1,200	$ 759,000	$ 82,800	$ 841,800
9	Level 3 Charger	2	EA	$ 52,000	$ 2,400	$ 104,000	$ 4,800	$ 108,800
10	Excavation and Backfill	1000	LF	$ 4	$ 30	$ 4,000	$ 30,000	$ 34,000
11	Pavement Restoration	1000	LF	$ 8	$ 15	$ 8,000	$ 15,000	$ 23,000
12	3/4" Conduit	3500	LF	$ 5	$ 9	$ 17,500	$ 31,500	$ 49,000
13	2" Conduit	500	LF	$ 11	$ 14	$ 5,500	$ 7,000	$ 12,500
14	4" Conduit	150	LF	$ 15	$ 25	$ 2,250	$ 3,750	$ 6,000
15	Wires #10AWG	105	CLF	$ 30	$ 50	$ 3,150	$ 5,250	$ 8,400
16	Wires #4AWG	5	CLF	$ 120	$ 100	$ 600	$ 500	$ 1,100
17	Wires #1/0KCMIL	2	CLF	$ 300	$ 175	$ 600	$ 350	$ 950
18	Wires #250KCMIL	15	CLF	$ 750	$ 350	$ 11,250	$ 5,250	$ 16,500
19	Wires #500KCMIL	6	CLF	$ 1,450	$ 450	$ 8,700	$ 2,700	$ 11,400
20	Ground Rod	4	Ea.	$ 41	$ 75	$ 164	$ 300	$ 464
21	#2AWG Bare Copper	1	CLF	$ 115	$ 63	$ 115	$ 63	$ 178
22	Concrete Pad	3	CY	$ 1,800	$ 1,850	$ 5,400	$ 5,550	$ 10,950
23	Bollards	13	Ea.	$ 110	$ 600	$ 1,430	$ 7,800	$ 9,230
24	Miscellaneous Supplies	1	LS	$ 15,000	$ 1,200	$ 15,000	$ 1,200	$ 16,200
25	Testing	1	LS	$ -	$ 6,000	$ -	$ 6,000	$ 6,000
26	Programming	1	LS	$ -	$ 2,400	$ -	$ 2,400	$ 2,400
	SUB-TOTAL				**$ 79,136**		**$ 277,943**	**$ 1,364,702**
							Overhead and Profit (20%)	$ 272,940
							BUDGETARY COST	**$ 1,637,642**

EXHIBIT 'C'

B. Sketches

EXHIBIT 'C'


Electrical Branch Circuit Equipment
Electrical Branch Circuit Equipment
Electrical Distribution Equipment, Refer to Enlarged Plan
Overhead Conductors
Electrical Branch Circuit Equipment
Pole 67709TN
Proposed Pole 1
Relocate existing pole 13657
Holland Ave
Delaware and Raritan Canal State Park Trail
Allen St
Allen Pl
Trenton Firehouse
Trenton Fire Department
Trenton N.J. Firemen FCU
EXHIBIT 'C'

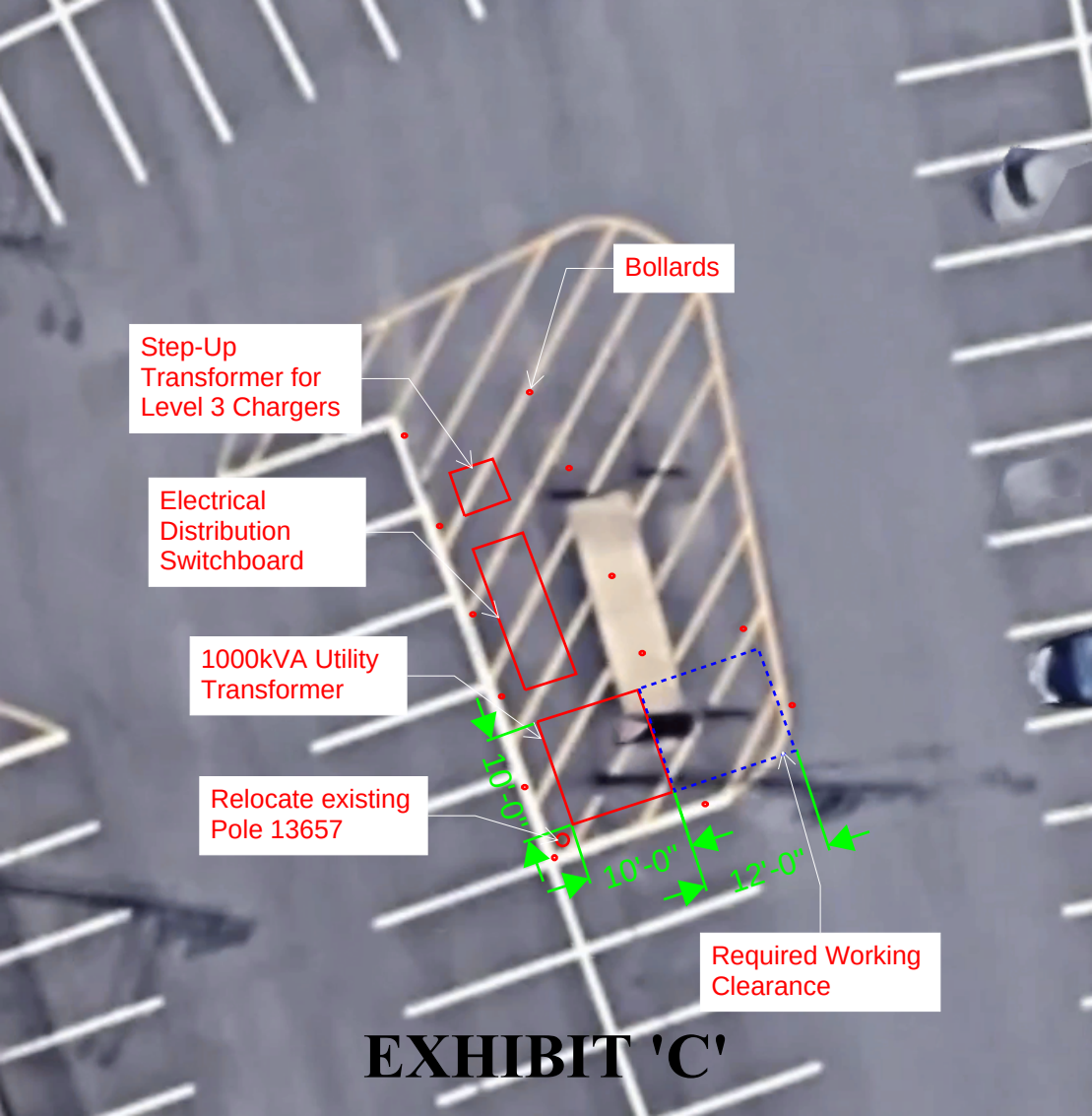

Bollards
Step-Up Transformer for Level 3 Chargers
Electrical Distribution Switchboard
1000kVA Utility Transformer
Relocate existing Pole 13657
10'-0"
10'-0"
12'-0"
Required Working Clearance

EXHIBIT 'C'

C. Cut Sheets

EXHIBIT 'C'

CT4000 Level 2 Commercial Charging Station

Specifications and Ordering Information

Ordering Information

Specify model number followed by the applicable code(s). The order code sequence is: **Model-Options**. **Software**, **Services** and **Misc** are ordered as separate line items.

Hardware

Description		Order Code
Model	1830 mm (6 ft) Single Port Bollard Mount 1830 mm (6 ft) Dual Port Bollard Mount	CT4011-GW1 CT4021-GW1
	1830 mm (6 ft) Single Port Wall Mount 1830 mm (6 ft) Dual Port Wall Mount	CT4013-GW1 CT4023-GW1
	2440 mm (8 ft) Dual Port Bollard Mount 2440 mm (8 ft) Dual Port Wall Mount	CT4025-GW1 CT4027-GW1
Included	Integral Modem - North America	-GW1
Misc	Power Management Kit Bollard Concrete Mounting Kit	CT4000-PMGMT CT4001-CCM

Note: All CT4000 stations include Intergral Modem -GW1.

Software & Services

Description	Order Code
ChargePoint Commercial Service Plan	CPCLD-COMMERCIAL-*n**
ChargePoint Enterprise Plan	CPCLD-ENTERPRISE-*n**
ChargePoint Assure	CT4000-ASSURE*n**
Station Activation and Configuration	CPSUPPORT-ACTIVE
ChargePoint Station Installation and Validation	CT4000-INSTALLVALID

Note: All CT4000 stations require a network service plan per port.

*Substitute *n* for desired years (1, 2, 3, 4, or 5 years).

Order Code Examples

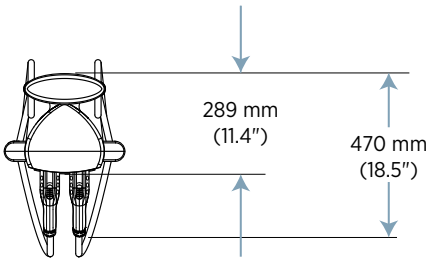
If ordering this	the order code is
1830 mm (6 ft) Dual Port Bollard Networked Station with Concrete Mounting Kit	CT4021-GW1 CT4001-CCM
ChargePoint Commercial Service Plan, 3 Year Subscription	CPCLD-COMMERCIAL-5
ChargePoint Station Installation and Validation	CT4000-INSTALLVALID
3 Years of Assure Coverage	CT4000-ASSURE5
1830 mm (6 ft) Single Port Wall Mount Networked Station	CT4013-GW1
ChargePoint Commercial Service Plan, 5 Year Subscription	CPCLD-COMMERCIAL-5
5 Years of Assure Coverage	CT4000-ASSURE5
Station Activation and Configuration	CPSUPPORT-ACTIVE

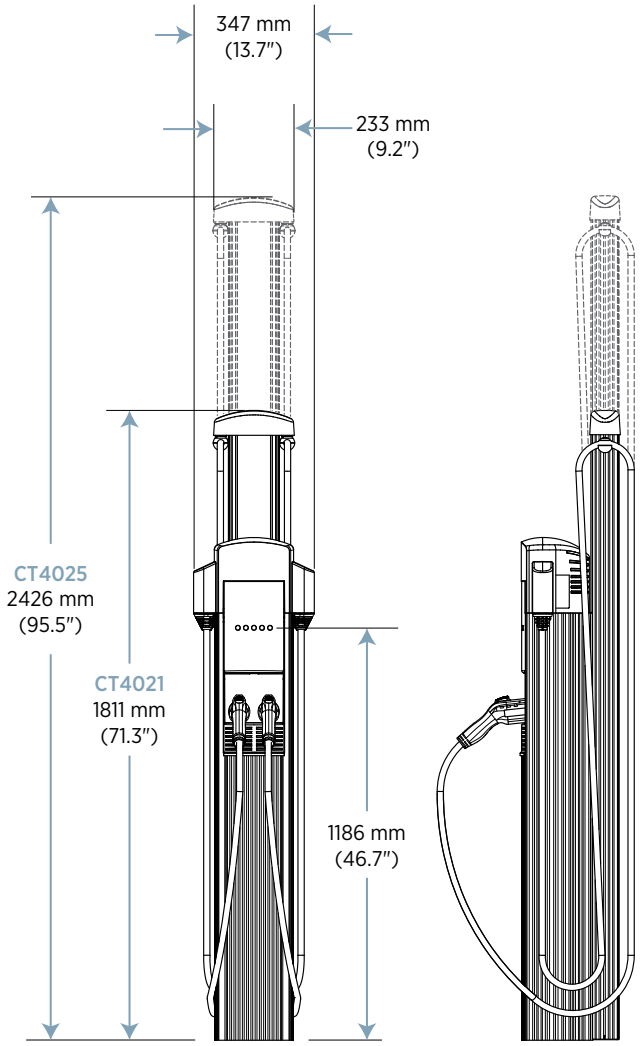
CT4021

The First **ENERGY STAR®** Certified EV Charger

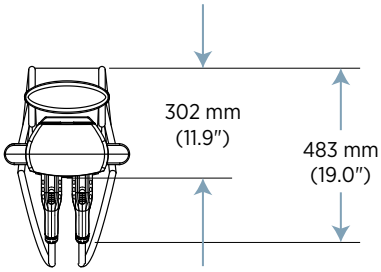
EXHIBIT 'C'

CT4021 1830 mm (6′)
CT4025 2440 mm (8′)
Bollard





CT4023 1830 mm (6′)
CT4027 2440 mm (8′)
Wall Mount



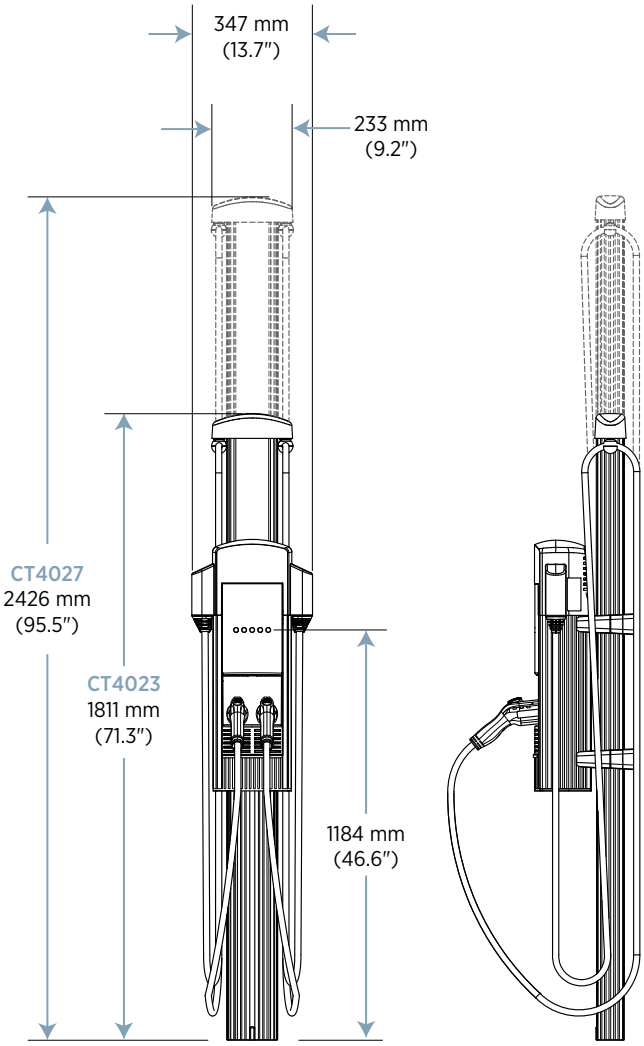


EXHIBIT 'C'

CT4000 Family Specifications

Electrical Input

	Single Port (AC Voltage 208/240V AC)			Dual Port (AC Voltage 208/240V AC)		
	Input Current	Input Power Connection	Required Service Panel Breaker	input Current	Input Power Connection	Required Service Panel Breaker
Standard	30A	One 40A branch circuit	40A dual pole (non-GFCI type)	30A x 2	Two independent 40A branch circuits	40A dual pole (non-GFCI type) x 2
Standard Power Share	n/a	n/a	n/a	32A	One 40A branch circuit	40A dual pole (non-GFCI type)
Power Select 24A	24A	One 30A branch circuit	30A dual pole (non-GFCI type)	24A x 2	Two independent 30A branch circuits	30A dual pole (non-GFCI type) x 2
Power Select 24A Power Share	n/a	n/a	n/a	24A	One 30A branch circuit	30A dual pole (non-GFCI type)
Power Select 16A	16A	One 20A branch circuit	20A dual pole (non-GFCI type)	16A x 2	Two independent 20A branch circuits	20A dual pole (non-GFCI type) x 2
Power Select 16A Power Share	n/a	n/a	n/a	16A	One 20A branch circuit	20A dual pole (non-GFCI type)
Service Panel GFCI	Do not provide external GFCI as it may conflict with internal GFCI (CCID)					
Wiring - Standard	3-wire (L1, L2, Earth)			5-wire (L1, L1, L2, L2, Earth)		
Wiring - Power Share	n/a			3-wire (L1, L2, Earth)		
Station Power	8 W typical (standby), 15 W maximum (operation)					

Electrical Output

Standard	7.2 kW (240V AC @ 30A)	7.2 kW (240V AC @ 30A) x 2
Standard Power Share	n/a	7.2 kW (240V AC @ 30A) x 1 **or** 3.8 kW (240V AC @ 16A) x 2
Power Select 24A	5.8 kW (240V AC @ 24A)	5.8 kW (240V AC @ 24A) x 2
Power Select 24A Power Share	n/a	5.8 kW (240V AC @ 24A) x 1 **or** 2.9 kW (240V AC @ 12A) x 2
Power Select 16A	3.8 kW (240V AC @ 16A)	3.8 kW (240V AC @ 16A) x 2
Power Select 24A Power Share	n/a	3.8 kW (240V AC @ 16A) x 1 **or** 1.9 kW (240V AC @ 8A) x 2

Functional Interfaces

Connector(s) Type	SAE J1772™	SAE J1772™ x 2
Cable Length - 1830 mm (6 ft) Cable Management	5.5 m (18 ft)	5.5 m (18 ft) x 2
Cable Length - 2440 mm (8 ft) Cable Management	n/a	7 m (23 ft)
Overhead Cable Management System	Yes	
LCD Display	145 mm (5.7 in) full color, 640 x 480, 30 fps full motion video, active matrix, UV protected	
Card Reader	ISO 15693, ISO 14443, NFC	
Locking Holster	Yes	Yes x 2

EXHIBIT 'C'

Safety and Connectivity Features

Ground Fault Detection	20 mA CCID with auto retry
Open Safety Ground Detection	Continuously monitors presence of safety (green wire) ground connection
Plug-Out Detection	Power terminated per SAE J1772™ specifications
Power Measurement Accuracy	+/- 2% from 2% to full scale (30A)
Power Report/Store Interval	15 minute, aligned to hour
Local Area Network	2.4 GHz WiFi (802.11 b/g/n)
Wide Area Network	LTE Category 4

Safety and Operational Ratings

Enclosure Rating	Type 3R per UL 50E
Safety Compliance	UL listed and cUL certified; complies with UL 2594, UL 2231-1, UL 2231-2, and NEC Article 625
Surge Protection	6 kV @ 3,000A. In geographic areas subject to frequent thunder storms, supplemental surge protection at the service panel is recommended.
EMC Compliance	FCC Part 15 Class A
Operating Temperature	-40°C to 50°C (-40°F to 122°F)
Storage Temperature	-40°C to 60°C (-40°F to 140°F)
Non-Operating Temperature	-40°C to 60°C (-40°F to 140°F)
Operating Humidity	Up to 85% @ 50°C (122°F) non-condensing
Non-Operating Humidity	Up to 95% @ 50°C (122°F) non-condensing
Terminal Block Temperature Rating	105°C (221°F)
Network	All stations include integral LTE modem and will be automatically configured to operate as gateway or non-gateway as needed

ChargePoint, Inc. reserves the right to alter product offerings and specifications at any time without notice, and is not responsible for typographical or graphical errors that may appear in this document.

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Listed by Underwriters Laboratories Inc.

EXHIBIT 'C'

Express 250

Specifications and Ordering Information

High Power in a Small Footprint

EXHIBIT 'C'

Ordering Information

The order codes below represent specific product configurations. Other product options are available. Please contact ChargePoint Sales for information and order codes.

Hardware

Description		Order Code
Model	Express 250 Station includes 2x Power Modules, 1x CCS1 cable, 1x CHAdeMO cable (NA)	CPE250C-625-CCS1-CHD
	Express 250 Station includes 2x Power Modules, 1x CCS2 cable, 1x CHAdeMO cable (EU)	CPE250C-625-CCS2-CHD
Connector Options	Cable connectors available include CCS1, CCS2, and/or CHAdeMO. Cables can be ordered with a single connector or a combination.	Please contact ChargePoint Sales
Buy America	The Express 250 is compliant with the Federal Transportation Authority (FTA) and Federal Highway Administration (FHWA) Buy America Options.	Please contact ChargePoint Sales

Software & Services

Description	Order Code
ChargePoint Enterprise Cloud Plan *Note: Station activation is included in this plan.*	CPCLD-ENTERPRISE-DC-n*
ChargePoint Assure® — Prepaid Assure Plan for one Express 250 station. Includes Parts and Labor Warranty, Remote Technical Support, On-Site Repairs when needed, Unlimited Configuration Changes, and Reporting.	CPE250-ASSURE-n*
ChargePoint Assure® — Assure Plan for one Express 250 and invoiced annually. Includes Parts and Labor Warranty, Remote Technical Support, On-Site Repairs when needed, Unlimited Configuration Changes, and Reporting.	CPE250-ASSURE-n-COMMIT*

Commissioning Service: includes on-site validation and inspection of electrical, mechanical, installation, wiring and civil parameters for the Express 250 station.	CPE250-COMMISSIONING
Commissioning Service: includes both the installation and commissioning of the Express 250 station.	CPE250-INSTALL-COMMISSIONING

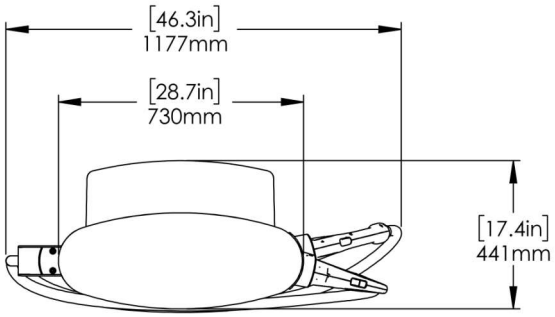
Note: All Express 250 stations require a cloud plan.

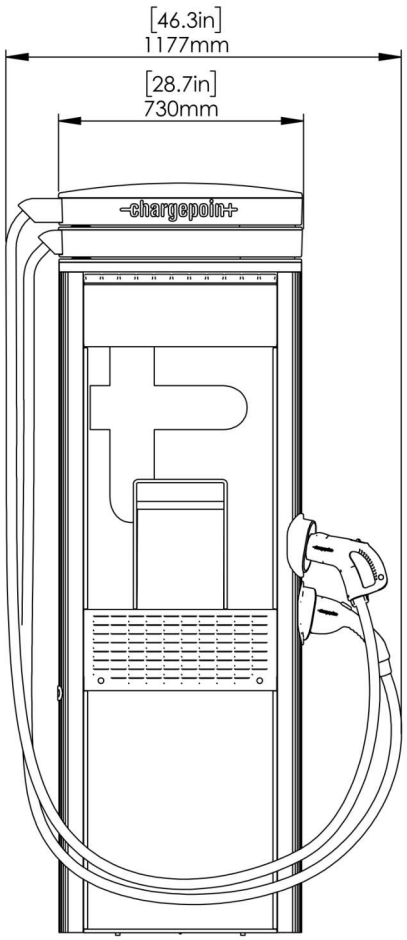
*Substitute *n* for desired years of service (1, 2, 3, 4 or 5 years).

Order Code Information

If ordering this…	…the order code is
Express 250 Station includes 2x Power Modules, 1x CCS1 cable, 1x CHAdeMO cable (NA)	CPE250C-625-CCS1-CHD

Architectural Drawings (Dimensions)





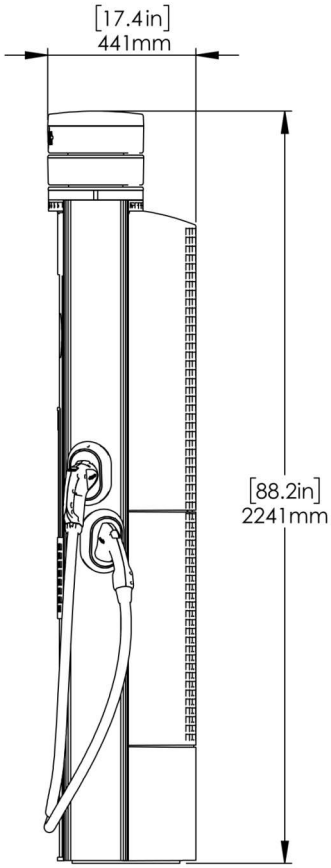


EXHIBIT 'C'

General Specifications

Station Electrical Input

Input Rating	400V AC, 3-phase, 96A, 50 Hz 480Y/277V AC, 3-phase, 80A, 60 Hz
Wiring	L1, L2, L3, Neutral & Earth

Station Electrical Output

Max Output Power	62.5 kW
Output Voltage, Charging	200–1,000V DC
Max Output Current	156A
Max Modules per Station	2

Paired Station Electrical Output

Paired Max Output Power	125 kW
Paired Max Output Current	CCS1: 174A or 200A CCS2: 200A CHAdeMO; US: 140A, EU: 125A

Power Module

Max Output Power	31.25 kW
Max Output Current	78 A
Power Conversion Efficiency	> 95%
Power Factor	0.99 at full load
Harmonics	iTHD < 5% (Complies with IEEE 519 Requirements)
Power Module Cooling	Liquid Cooling Technology

Functional Interfaces

Max Connector Types per Station	Up to two different connector types per station
Supported Connector Types	CHAdeMO, CCS1 (SAE J1772™ Combo), CCS2 (IEC 61851-23)
Cable Length with Swing Arm*	Full Horizontal Reach: 4.27m (14')
LCD Display	Full-color 254 mm (10 in) display for driver interaction
Top Display	Full-color 508 mm (20 in) LED display for notifications
Authentication	RFID: ISO 15693, ISO 14443, NEMA EVSE 1.2-2015 (UR) Tap to Charge (NFC on Apple & Android): 15118-2 (EIM) Remote: Mobile and in vehicle (if supported by vehicle)

*Horizontal reach to typical vehicle charging port: 3.76 (12'4")

Connectivity Features

Vehicle Safety Communication	CHAdeMO – JEVS G104 over CAN, CCS1 – SAE J1772 over PLC and CCS2 — IEC 61851-23
Plug-Out Detection	Power terminated per JEVS G104 (CHAdeMO), SAE J2931 (CCS1) and IEC 61851-23 (CCS2)
Local Area Network	2.4 GHz and 5 GHz WiFi (802.11 b/g/n)
Wide Area Network	4G LTE (fall back to 3G GSM)
Supported Communication Protocols	OCPP
Service and Maintenance	Remote system monitoring, diagnostic, and proactive maintenance

Safety and Operational Ratings

Station Enclosure Rating	Type 3R, IP54
Station Impact Rating	IK10
Safety and Compliance	UL and cUL listed: complies with UL 2202, UL 2231-1, UL 2231-2, CSA 107.1 CE marking: complies with IEC 62196, IEC 61851

EXHIBIT 'C'

Station Surge Protection	Tested to IEC 6100-4-5, Level 5 (6 kV @ 3,000A). In geographic areas subject to frequent thunder storms, supplemental surge protection at the service panel is recommended.
EMC Compliance	U.S.: FCC part 15 Class A; EU: EN55011, EN55022 and IEC61000-4
Storage Temperature	-40°C to 50°C (-40°F to 122°F)
Operating Temperature	-40°C to 50°C (-40°F to 122°F)
Operational Altitude	<3,000 m (<9,800 ft)
Operating Humidity	Up to 95% @ 50°C (122°F) non-condensing

Generic Specifications

Station Enclosure Dimensions	2,241 mm H x 730 mm W x 441 mm D (7'4" x 2'5" x 1'5")
Power Module Dimensions	760 mm H x 430 mm W x 130 mm D (2'6" x 1'5" x 5")
Station Weight (without Power Modules)	250 kg (551 lb)
Power Module Weight	45 kg (98.5 lb)

Energy Management Features

Dynamic Power Management	Allows a fixed maximum power output per station or lets the system dynamically manage the power distribution per station
Remote Energy Management	Manage output power via the ChargePoint Admin Portal, API, and Open ADR 2.0b VEN

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