## Permitting Checklist

### Phase 1
#### Pre-Work Contractor

- ✓ Understands intended use of the EVSE (i.e. personal)
- ✓ Obtain an address for the location
- ✓ Determine the ownership of the site and/or authorization to install equipment at site
- ✓ Understands intended use of the EVSE (i.e., fleet, employee, customer, visitor, etc.)
- ✓ Determine number of vehicles charging and connectors per charging station
- ✓ Determine source of power and authorization to use source
- ✓ Determine type of vehicle(s) to be charged at EVSE
- ✓ Evaluate mounting type options (i.e., bollard, pole-mount, wall-mount, ceiling-mount)
- ✓ Clarify communication requirements (i.e., Ethernet, cellular, Wi-Fi, none or other)
- ✓ Determine the NEMA Enclosure type
- ✓ Determine the physical dimensions of the space(s)
- ✓ Inspect the type of circuit breaker panel board intended for the installation

### Phase 2
#### Pre-Work Customer

- ✓ Identify incentives or rate structures through the utility
- ✓ Determine size of electrical service at the site
- ✓ Identify and contact applicable local permit office(s) to identify specific requirements, including local fire, environmental, construction, building, concealment and engineering requirements
- ✓ Identify incentives available through local, state or federal programs
- ✓ Contact insurance company to acquire additional insurance or separate coverage as needed
- ✓ Hire the contractor and verify credentials with all subcontractors; ensure electrical contractor’s license for electrical work is current

### Phase 3
#### On-Site Evaluation

- ✓ Verify EVSE meets UL requirements and is listed by UL or another nationally recognized testing laboratory
- ✓ Verify EVSE has an appropriate NEMA rated enclosure (NEC 110.28) based on environment and customer needs, such as weatherization or greater levels of resistance to water and corrosive agents
- ✓ Determine the level or charger meets customer’s PEV requirements (most vehicles require the maximum of a 240V/32A (40A breaker)
- ✓ Based on proposed EVSE location, determine if cord length will reach a vehicle’s charging inlet without excessive slack and does not need to be more than 25’ in length (NEC 625.17)
- ✓ Cord management methodologies have been considered to reduce the risk of tripping hazards and accidental damage to the connector
- ✓ Mounting type selection based on requirements to meet site guidelines
- ✓ Determine whether EVSE communication options are beneficial to customer and/or local utility

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<p>| <strong>Phase 4</strong>&lt;br&gt;<strong>On-Site Survey</strong> | ✓ Ensure overhead doors and vehicle parking spot do not conflict with EVSE location  &lt;br&gt;✓ Place EVSE in a location convenient to charging port on vehicle and typical orientation of the vehicle in garage (i.e., backed in or head-first)  &lt;br&gt;✓ Ensure functionality of lighting in the garage to meet NEC code 210-70 | ✓ Space(s) should be visible to drivers and pedestrians  &lt;br&gt;✓ Determine proximity to building entrance (could be considered an incentive for PEV use)  &lt;br&gt;✓ Select spaces proximate to existing transformer or panel with sufficient electrical capacity  &lt;br&gt;✓ EVSE installation should maintain a minimum parking space length to comply with local zoning requirements  &lt;br&gt;✓ If available, use wider spaces to reduce the risk of cord damage and minimize the intersection of cords with walking paths  &lt;br&gt;✓ Ensure sufficient lighting at proposed space(s) to reduce the risk of tripping and damage to charging station from vehicle impact or vandalism; light levels above two foot candles are recommended  &lt;br&gt;✓ Address accessibility requirements (refer to the Plug-In Electric Vehicle Infrastructure and Equipment Accessibility section of the Guidebook for more information)  &lt;br&gt;✓ Determine availability of space for informative signing  &lt;br&gt;✓ EVSE with multiple cords should be placed to avoid crossing other parking spaces  &lt;br&gt;✓ All available charging station mounting options should be considered and optimized for the space  &lt;br&gt;✓ Determine if hazardous materials were located at the site  &lt;br&gt;<strong>PARKING DECKS</strong>  &lt;br&gt;✓ Place EVSE towards the interior of a parking deck to avoid weather-related impacts on equipment  &lt;br&gt;<strong>PARKING LOTS</strong>  &lt;br&gt;✓ Avoid existing infrastructure and landscaping to mitigate costs, potential hazards and other negative impacts  &lt;br&gt;<strong>ON-STREET</strong>  &lt;br&gt;✓ Install on streets with high foot and vehicle traffic to mitigate vandalism  &lt;br&gt;✓ Avoid existing infrastructure to mitigate costs, potential hazards and other negative impacts  &lt;br&gt;✓ Address accessibility requirements (refer to the Plug-In Electric Vehicle Infrastructure and Equipment Accessibility section of the Guidebook for more information)  &lt;br&gt;✓ For pull-in spaces, EVSE should be placed in front of the space and either centered on the space if placed between two spaces (if two connectors are available); EVSE with more than two connectors should not be used in on-street applications  &lt;br&gt;✓ For parallel parking locations, the charging station should be installed at the front third of the parked vehicle and based on the direction of traffic flow; EVSE with a single connector is recommended to reduce potential trip hazards |</p>
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<thead>
<tr>
<th>Phase 4</th>
<th>On-Site Survey</th>
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<tbody>
<tr>
<td>✓ Mount the connector at a height between 36” and 48” from the ground (NEC 625.29) unless otherwise indicated by the manufacturer</td>
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<tr>
<td>✓ Install wall or pole-mount stations and enclosures at a height between 36” and 48”</td>
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<td>✓ Ensure sufficient space exists around electrical equipment for safe operation and maintenance (NEC 110.26); recommended space is 30” wide, 3’ deep and 6’6” high</td>
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<td>✓ Minimize tripping hazards and utilize cord management technologies when possible</td>
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<tr>
<td>✓ Equipment operating above 50 volts must be protected against physical damage (NEC 110.27); ensure the vehicle is out of the line of vehicle travel and use wheel stops or other protective measures</td>
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<td>✓ EVSE must be located such that ADA routes maintain a pathway of 36” at all times</td>
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<tr>
<th>Phase 4</th>
<th>Contractor Installation Preparation</th>
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<tr>
<td>✓ Price quote submitted to customer and approved including utility upgrades</td>
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<td>✓ Order equipment</td>
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<td>✓ Provide stamped engineering calculations as needed</td>
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<td>✓ Provide site plan modification with diagrams as necessary</td>
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<td>✓ Complete all necessary service upgrades and/or new service assessments</td>
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<td>✓ Complete permit applications as required by local permitting department</td>
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<td>✓ Ensure permit is approved and collected</td>
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<tr>
<td>✓ Schedule all necessary contract work (i.e., boring, concrete and/or paving restoration) and utility work (i.e., utility marking, service upgrade, new service and/or meter pull)</td>
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<tr>
<td>✓ Ensure utility marking of existing power lines, gas lines or other infrastructure is completed and utilize “call before you dig” services</td>
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<th>Phase 5</th>
<th>Installation</th>
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<tr>
<td>✓ Residential garages may permit the use of nonmetallic-sheathed cable in lieu of conduit</td>
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<td>✓ Run conduit from power source to station location</td>
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<td>✓ For EVSE greater than 60 amperes, a separate disconnect is required (NEC 625.23) and should be installed concurrently with conduit and visible from the EVSE</td>
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<td>✓ Post permit at site in visible location</td>
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<tr>
<td>✓ Remove material to run conduit and/or wiring (i.e., drywall, insulation, pavers, concrete, pavement, earth, etc.</td>
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<td>✓ Contractors are encouraged to examine requirement for installation sites and types of wiring in Chapter 3 of the NEC</td>
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<td>✓ Pull wiring; charging stations require a neutral line and a ground line and equipment is considered to be a continuous load</td>
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<td>✓ Conductors should be sized to support 125% of the rated equipment load (NEC 625.21)</td>
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<td>✓ Preparing mounting surface and install per equipment manufacturer instructions</td>
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<td>✓ Floor-mount: typically requires a concrete foundation with J-bolts on station base; place with space to allow conductors to enter through the base</td>
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<td>✓ Wall/pole/ceiling-mount: install brackets for mounting of the equipment</td>
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<td>✓ Install bollard(s) and/or wheel stop(s) as needed</td>
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<td>✓ Install informative signage to identify the EVSE and potential trip hazards</td>
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<td>✓ Install additional electrical panels or subpanels as needed</td>
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<tr>
<td>✓ Install service upgrades, new service and/or new meter as needed; utility may also pull a meter to allow for charging station wires to be connected to a panel</td>
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### Phase 6 Inspection

- An initial electrical inspection by applicable building, fire, environmental and electrical authorities should occur after conduit has been run and prior to connecting equipment and running wires; if necessary, contractor should correct any issues and schedule a second rough inspection.
- If required, the inspector will perform a final inspection to ensure compliance with NEC and other codes adopted within the jurisdiction by inspecting wiring, connections, mounting and finish work.
- Contractor should verify EVSE functionality.

### Additional Resources

- National Codes and Standards
- American National Standards Institute (ANSI)
- National Fire Protection Association (NFPA)
- Underwriters Laboratories, Inc. (UL)
- International Association of Electrical Inspectors (IAEI)
- International Code Council (ICC)
- NECA-NEIS Standards
- NECA and NFPA Webinars
- Electrical Vehicle Infrastructure Training Program (EVITP) Installer Training Course/Certification