

Department of Public Works  
Engineering Division

December 26, 2025

**CITY OF BERKELEY**  
SANITARY SEWER REHABILITATION AND REPLACEMENT PROJECT  
ADELINE STREET, WOOLSEY STREET, BENVENUE AVENUE, ET AL.  
SPECIFICATION NO. 26-11758-C  
**ADDENDUM NO. 1**

Dear Bidder:

The City of Berkeley has revised the Specifications of Specification No. 26-11758-C, Sanitary Sewer Rehabilitation and Replacement Project – Adeline Street, Woolsey Street, Benvenue Avenue, et al. The following items in the Contract Specifications have revisions:

**Table of Contents, Part B – Special Provisions, Page T3**

Revised Part B - Special Provisions sheet index

Revised Page T3 is included as Attachment 1 of this Addendum.

**Appendices, Page T8**

Revised Appendix 7 STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) – ENCROACHMENT PERMIT requirements.

Added Appendix 13 Monument Referencing for a list of City monuments the Contractor shall reference. See Part B Special Provisions Bid Item No. 6 revisions for monument referencing specifications.

Revised Page T8 is included as Attachment 2 of this Addendum.

**Bidder's Proposal, Pages A9-A14**

Revised Bid Item No. 6 to include Monument Referencing

Revised Bid Item No. 34b to be Revocable. Quantity and Unit revised to be Lump Sum (LS). The City's allowance of \$100,000 shall be used in the Bidder's Proposal.

Revised Bid Item No. 34c to be Revocable. The City's allowance of \$300,000 shall be used in the Bidder's Proposal.

Added Bid Item No. 35 Poly-Wrap Sanitary Sewer Line as Lump Sum (LS)

Revised Pages A9-A14 are included as Attachment 3 of this Addendum.

**Part B Special Provisions, Pages B1-45**

Revised Bid Item No. 6 specifications for Construction Staking and also added specifications for Monument Referencing.

Revised Bid Item No. 34 specifications for Pressure Testing Sanitary Sewer Line. All bypass systems and/or traffic control necessary to carry out Bid Item No. 34b and 34c shall be paid from those bid items and not from Bid Item No. 28 Sewer Bypass (For Sewer Mains 15” and Larger) and Bid Item No. 2 Traffic Control Plan and Provisions, respectively.

Revised Bid Item No. 34a payment clause to remove As-Built submittals. As-Built submittals will now be paid for under Bid Item No. 34c.

Revised Bid Item No. 34b payment clause to be paid in Lump Sum (LS). This bid item is now a revocable item and shall be paid for on a time and material basis.

Revised Bid Item No. 34c payment clause to now be a revocable item and shall be paid for on a time and material basis. Item shall include all work necessary to perform repairs including but not limited to demolition, sawcutting, disposal of materials, bedding, backfill, surface restoration, and final pressure test of the entire sewer main (MH to MH), including lower laterals. If the entire segment does not pass the pressure test after repairs have been made, the Contractor shall perform further investigation and repairs at their own expense.

Revised Bid Item No. 34c to remove poly-wrapping of exposed pipe. Added poly-wrap as new Bid Item No. 35 measured and paid as Lump Sum (LS).

Revised Pages B1-B45 are included as Attachment 4 of this Addendum.

**Appendix 7 STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) – ENCROACHMENT PERMIT**

Revised Appendix 7 is included as Attachment 5 of this Addendum.

**Appendix 13 MONUMENT REFERENCING**

Added Appendix 13 is included as Attachment 6 of this Addendum.

All other provisions of the contract documents shall remain the same. **Bidders shall submit a signed copy of Addendum No. 1 along with their Bidder’s Proposal. Failure to do so may result in bid rejection.**

Sincerely,



Ricardo Salcedo, Supervising Civil Engineer

**BIDDER’S ACKNOWLEDGEMENT:**

Name of Company: \_\_\_\_\_

Address, City, State, Zip: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Print Name: \_\_\_\_\_

Date: \_\_\_\_\_

Attachments: Revised Contract Specifications  
Attachment 1, Amended Page T3 of Table of Contents  
Attachment 2, Amended Page T8 of Appendices  
Attachment 3, Amended Pages A9-A14 of Bidder's Proposal  
Attachment 4, Amended Pages B1-B45 of Part B Special Provisions  
Attachment 5, Amended Appendix 7  
Attachment 6, Added Appendix 13

**ATTACHMENT 1: Specification (Select Pages)**

**BID ADDENDUM 1**

**SANITARY SEWER REHABILITATION AND  
REPLACEMENT PROJECT -  
ADELINE STREET, WOOLSEY STREET,  
BENVENUE AVENUE, ET AL  
SPECIFICATION 25-11758-C**

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**ATTACHMENT 2: Specification (Select Pages)**

**BID ADDENDUM 1**

**SANITARY SEWER REHABILITATION AND**

**REPLACEMENT PROJECT -**

**ADELINE STREET, WOOLSEY STREET,**

**BENVENUE AVENUE, ET AL**

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SANITARY SEWER REHABILITATION AND  
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**BIDDER'S PROPOSAL**

| ITEM NO. | DESCRIPTION   | ESTIMATED QUANTITY | UNIT | UNIT COST | TOTAL COST |
|----------|---|--------------------|------|-----------|------------|
| 1.       | Mobilization/Demobilization   | 1                  | LS   | \$        | \$         |
| 2.       | Traffic Control Plan and Provisions   | 1                  | LS   | \$        | \$         |
| 3.       | Lighted Message Board   | 4                  | EA   | \$        | \$         |
| 4.       | Pre-construction audio/video survey and distribution of public notices  | 1                  | LS   | \$        | \$         |
| 5.       | Pre-construction closed circuit television inspection and location of active sewer laterals                                 | 7,131              | LF   | \$        | \$         |
| 6.       | Construction staking and eutsheets <b><u>Monument Referencing</u></b>   | 1                  | LS   | \$        | \$         |
| 7.       | Rehabilitate existing maintenance hole or junction box  | 64                 | EA   | \$        | \$         |
| 8.       | Construct Std. MH and drop MH, including lining, eccentric cones, drop tees, all depths                                     | Not Used           |      |           |            |
| 9a.      | Remove existing structures and construct std. MH, drop MH, shallow MH, junction box, eccentric cones, drop tees, all depths | 8                  | EA   | \$        | \$         |
| 9b.      | Remove existing structure and construct lamphole or two-way cleanout, all depths  | 1                  | EA   | \$        | \$         |
| 9c.      | Remove existing structures and construct 36" HDPE MH, including drop tees, all depths                                       | 3                  | EA   | \$        | \$         |

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**BIDDER'S PROPOSAL**  
**(continued)**

| ITEM NO. | DESCRIPTION   | ESTIMATED QUANTITY | UNIT | UNIT COST | TOTAL COST |
|----------|---|--------------------|------|-----------|------------|
| 10.      | Rehabilitation by Method "A" CIPP for maintaining pipe size from 18 to 18-inch pipe; includes point repair to correct sags  | Not Used           | LF   |           |            |
| 11a.     | Rehabilitation by Method "B" Pipe Splitting or Other Comparable Method for Increasing Pipe Size From 4-inch to 4-inch, or 4-inch to 6-inch Diameter; Includes Point Repairs to Correct Sags                   | Not Used           |      |           |            |
| 11b.     | Rehabilitation by Method "B" Pipe Splitting or Other Comparable Method for Increasing Pipe Size From 6-inch to 6-inch, 6-inch to 8-inch, or 8-inch to 8-inch Diameter; Includes Point Repairs to Correct Sags | 2,513              | LF   | \$        | \$         |
| 11c.     | Rehabilitation by Method "B" pipe splitting, reaming, or other comparable method for increasing pipe size from 15 to 18, or 18-inch to 18-inch Diameter; Includes Point Repair to Correct Sags                | 28                 | LF   | \$        | \$         |
| 11d.     | Rehabilitation by Method "B" pipe splitting, reaming, or other comparable method for increasing pipe size from 18 to 20, or 20-inch to 20-inch Diameter; Includes Point Repair to Correct Sags                | 26                 | LF   | \$        | \$         |
| 12a.     | Sewer construction and replacement by Method "C" Traditional Open Trench Method for Increasing Pipe Size from 4-inch to 6-inch or 6-inch to 6-inch Diameter; Includes Point Repair of Sags                    | Not Used           |      |           |            |

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**BIDDER'S PROPOSAL**  
**(continued)**

| ITEM NO. | DESCRIPTION   | ESTIMATED QUANTITY | UNIT | UNIT COST | TOTAL COST |
|----------|---|--------------------|------|-----------|------------|
| 12b.     | Sewer construction and replacement by Method "C" Traditional Open Trench Method for Increasing Pipe Size from 6-inch to 8-inch or 8-inch to 8-inch; Includes Point Repair of Sags           | 102                | LF   | \$        | \$         |
| 12c.     | Sewer construction and replacement by Method "C" Traditional Open Trench Method for increasing pipe size from 8 to 10-inch diameter, or 10-inch to 10-inch; Includes Point Repair for Sags  | 18                 | LF   | \$        | \$         |
| 12d.     | Sewer construction and replacement by Method "C" Traditional Open Trench Method for increasing pipe size from 10 to 12-inch diameter, or 12-inch to 14-inch; Includes Point Repair for Sags | 309                | LF   | \$        | \$         |
| 12e.     | Sewer construction and replacement by Method "C" Traditional Open Trench Method for increasing pipe size from 18 to 20-inch diameter, or 20-inch to 20-inch; Includes Point Repair for Sags | 261                | LF   | \$        | \$         |
| 12f.     | Sewer construction and replacement by Method "C" Traditional Open Trench Method for increasing pipe size from 21 to 24-inch diameter, or 24-inch to 24-inch; Includes Point Repair for Sags | 1,418              | LF   | \$        | \$         |

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**BIDDER'S PROPOSAL**  
**(continued)**

| ITEM NO. | DESCRIPTION   | ESTIMATED QUANTITY | UNIT | UNIT COST | TOTAL COST |
|----------|---|--------------------|------|-----------|------------|
| 13.      | Lower lateral reconstruction (typically 4-inch and 6-inch laterals)                       | 2,250              | LF   | \$        | \$         |
| 14.      | Installation of two-way cleanouts and lateral risers                                      | 87                 | EA   | \$        | \$         |
| 15.      | Connection of active laterals to new or rehabilitated sewer main or MH                    | 125                | EA   | \$        | \$         |
| 16.      | Post-construction closed circuit television inspection and construction As-Built Drawings | 7,131              | LF   | \$        | \$         |
| 17.      | Remove existing and construct standard curb and gutter                                    | Not Used           |      |           |            |
| 18.      | Remove existing, and construct standard sidewalk and driveway                             | Not Used           |      |           |            |

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**BIDDER'S PROPOSAL**  
 (continued)

| ITEM NO. | DESCRIPTION   | ESTIMATED QUANTITY | UNIT | UNIT COST  | TOTAL COST |
|----------|---|--------------------|------|------------|------------|
| 19.      | Utility x-ings not shown and/or identified on the plans and not marked on street, length of x-ing <25 feet, 1/2-6 inch diameter (Revocable) | 25                 | EA   | \$         | \$         |
| 20.      | Utility x-ings not shown and/or identified on the plans and not marked on street, length of x-ing <25 feet, 6-24 inch diameter (Revocable)  | 10                 | EA   | \$         | \$         |
| 21.      | Rock excavation (Revocable)   | 20                 | CY   | \$         | \$         |
| 22.      | Reconstruction/Replacement of City monuments (Revocable)  | 3                  | EA   | \$         | \$         |
| 23.      | Supplemental Work   | 1                  | LS   | \$ 400,000 | \$ 400,000 |
| 24.      | BART District Permit to Enter   | Not Used           |      |            |            |
| 25.      | Caltrans Encroachment Permit/Authorization to work (Revocable)  | 1                  | LS   | \$         | \$         |
| 26.      | EBRPD Permit - Additional provisions and insurance requirements.  | Not Used           |      |            |            |
| 27.      | Stormwater Pollution Control and Sewage Spill Prevention and Response Requirements  | 1                  | LS   | \$         | \$         |
| 28.      | Sewer Bypass (for Sewer Mains 15" and Larger)   | 1                  | LS   | \$         | \$         |
| 29.      | Investigate other existing sewer mains, structures, and laterals.   | 1                  | LS   | \$         | \$         |

**BIDDER'S PROPOSAL**  
**(continued)**

| ITEM NO. | DESCRIPTION  | ESTIMATED QUANTITY | UNIT         | UNIT COST         | TOTAL COST        |
|----------|--|--------------------|--------------|-------------------|-------------------|
| 30.      | California Dept of Fish and Wildlife, Creek Permit - Additional Requirements For Work Adjacent to City's Creek | Not Used           |              |                   |                   |
| 31.      | Point (Spot) Repair  | 4                  | EA           | \$                | \$                |
| 32.      | Plug and abandon existing sewer mains, sewer structure and laterals  | 1                  | LS           | \$                | \$                |
| 33.      | Cold Plane 0.2' Incl. HMA Type A (Revocable)   | 25,865             | SF           | \$                | \$                |
| 34a.     | Pressure Testing Sanitary Sewer line   | 20                 | EA           | \$                | \$                |
| 34b.     | Isolate Leak (Allowance) <b>(Revocable)</b>  | <b>20 1</b>        | <b>EA LS</b> | \$ <b>100,000</b> | \$ <b>100,000</b> |
| 34c.     | Sewer Rehabilitation (Allowance) <b>(Revocable)</b>  | 1                  | LS           | \$ <b>300,000</b> | \$ <b>300,000</b> |
| 35.      | Poly-Wrap Sanitary Sewer Line  | 1                  | LS           | \$                | \$                |

**TOTAL BID PRICE IN WORDS AND IN FIGURES:**

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**DOLLARS AND CENTS/(\$ )**

**Note:**

- \* **Refer to Project Plans and/or Description of Bid Items section in Technical Provisions section of specifications for description of work included in bid items.**
- \*\* **Bid Item 23 - Supplemental Work is in addition to the Project's scope of work. This additional work may or may not be authorized to be performed by the Contractor as part of this Contract.**

**ATTACHMENT 4: Specification (Select Pages)**  
**BID ADDENDUM 1**  
SANITARY SEWER REHABILITATION AND  
REPLACEMENT PROJECT -  
ADELINE STREET, WOOLSEY STREET,  
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**PART B**  
**SPECIAL PROVISIONS**

SPECIFICATIONS

FOR

**SANITARY SEWER REHABILITATION**  
**SANITARY SEWER REHABILITATION AND REPLACEMENT -**  
**ADELINE STREET, WOOLSEY STREET , BENVENUE AVENUE, ET AL.**

SPECIFICATION NO. 26-11758-C

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### **DESCRIPTION OF BID ITEMS**

Description of Bid Items including their respective measurement for payment are listed below:

#### **BID ITEM NO. 1: MOBILIZATION AND DEMOBILIZATION**

Mobilization shall include obtaining insurance and bonds, moving all materials and equipment onto the site, obtaining and paying for all permits by other agencies if applicable, furnishing temporary construction utilities, installing construction signs (see Special Conditions of the Special Provisions for details), and installing any temporary buildings, spaces and facilities for the Resident, Project Representative and inspectors, and other construction facilities all as required for the proper performance and completion of the work.

Demobilization shall include final cleaning and restoration of the job site, removal of all temporary facilities and equipment from the work area, disconnection of the temporary construction utilities and turnover of project to the City.

Measurement for payment shall be as Lump Sum (LS). For the purpose of payment, mobilization will be assumed to be 60 percent of the total amount bid for this item. Payment for mobilization will be according to the following schedule.

- A. When the monthly partial payment estimate of the amount earned, not including the amount earned for mobilization, is 5 percent or more the original contract amount, 50 percent of the contract item price for mobilization will be included in said estimate for payment.
- B. When the monthly partial payment estimate of the amount earned, not including the amount earned for mobilization, is 10 percent or more of the original contract amount, the total amount earned for mobilization shall be 75 percent of the contract item price for mobilization, and said amount will be included in said estimate for payment.
- C. When the monthly partial payment estimate of the amount earned, not including the amount earned for mobilization, is 20 percent or more of the original contract amount, the total amount earned for mobilization shall be 100 percent of the contract item price for mobilization, and said amount will be included in said estimate for payment.

#### **BID ITEM NO. 2: TRAFFIC CONTROL PLAN AND PROVISIONS**

This item shall include all labor, materials, and equipment as needed to provide traffic control as described under Special Condition No. 24 of the specifications. Contractor shall submit a proposed traffic control plan, no later than two (2) weeks after the award of the project by the Berkeley City Council, for review and approval by the City's traffic engineer. The plan shall be prepared under the direction of a licensed traffic engineer or civil engineer, who must stamp and sign the plan.

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Contractor shall be aware that bicycle and pedestrian convenience and safety takes precedence over motor vehicle convenience. Contractor shall prepare traffic control plans such that closures or detours have little to no impact to pedestrian and bicyclist path of travel.

This item shall include, but not limited to, traffic control for sewer rehabilitation, sewer point (spot) repairs, sewer bypass, and pavement restoration in project work zones.

Measurement for payment shall be as Lump Sum (LS). The contractor shall be paid on the basis of work completed as noted on the monthly submission of progress payment.

**BID ITEM NO. 3: LIGHTED MESSAGE BOARD**

This item is to provide compensation for additional notification near the work area. The Contractor shall provide portable changeable message boards for use on the project at the City's request. Each portable message sign unit shall consist of a controller unit, a power supply, and a structural support system, all mounted on a trailer, per Caltrans Standard Specification Section 12-3.32. Message boards shall be installed as directed by the Engineer at least one (1) week prior to start of construction and shall be relocated to the next street location as job progresses or as directed by the Engineer. Board shall be maintained to the satisfaction of the Engineer.

Measurement for payment shall be as Each (EA).

**BID ITEM NO. 4: PRE-CONSTRUCTION AUDIO/VIDEO SURVEY, AND  
DISTRIBUTION OF PUBLIC NOTICES**

This item shall include all labor, materials, and equipment, including, but not limited to, recording devices, video cameras, cameras, and other equipment as required to perform a pre-construction survey to document existing conditions at the project site, staging areas, and other areas affected by the work. The contractor shall submit written records, photographs, and videos to the City prior to commencing work. The documentation of pre-construction conditions for the areas affected by the work is to facilitate restoration of the areas to existing conditions or better.

This item shall also include all labor and materials associated with the distribution of Public Notices to residences, businesses, and other properties affected by the work. The first Public Notice will be prepared and distributed by the City. The second Public Notice (Door Hanger) shall be distributed by the Contractor at least 72 hours prior to construction. The Contractor shall submit the "Door Hanger" for approval by the City prior to distribution to the residences, businesses, and other properties affected by the work.

Measurement for payment shall be as Lump Sum (LS). The Contractor shall be paid on the basis of work completed as noted on the monthly submission of progress payment.

**BID ITEM NO. 5: PRE-CONSTRUCTION CLOSED CIRCUIT TELEVISION (CCTV)  
INSPECTION AND LOCATION OF ACTIVE SEWER LATERALS**

This item shall include coordination with and notification of the public; locating, identifying, marking and recording all active laterals; and documenting the pre-construction condition of existing sewer mains. This item shall include labor, materials, utility marking devices, CCTV equipment, video devices, and other CCTV related materials for clear documentation of deficiencies in the existing sewer pipes and location of laterals. Flow control, diversion and/or bypass pumping required in order to facilitate the pre-construction CCTV shall be included.

Documentation shall follow the National Association of Sewer Service Companies (NASSCO) pipeline assessment certification program (PACP) coding standards for all defects and consist of a color, DVD-format video, log sheets, and a written report detailing the pre-construction condition of the pipeline and lateral connection/openings. The report shall note the time and date of video inspection, street name, upstream and downstream maintenance hole, direction of view, direction of flow, surface material, pipe size, pipe material, lateral connections, video tape number, counter number, and a detailed logging of defects encountered. The report shall be prepared by an operator or worker who holds current PACP certification and shall be done using POSM format.

The camera shall be lowered into the upstream maintenance hole (or access point) and placed into the pipe. The camera cable shall be retracted to remove slack to ensure an accurate distance reading. The cable distance-counter shall be reset to the distance between the centerline of the maintenance hole and the front lens of the camera. The camera shall provide a view of the inside of the insertion maintenance hole, then move through the pipeline in a downstream direction whenever possible, stopping at the center of the next maintenance hole and provide a view of the inside of the end structure. The cable distance counter shall measure the distance between each inspection segment – centerline to centerline. The camera shall stop at all significant observations to ensure a clear and focused view of the pipe condition. Observations shall include, but not be limited to: Laterals – Standard, Laterals – Protruding, Cracks, Offset Joints, Open Joints, Sags, Line Deviations, Siphons, Missing Sections, Mortar, Infiltration, Debris, Grease, and Roots. If the quality of the video is deemed unacceptable by the Engineer, the pipeline shall be re-televised at no additional cost to the City.

Contractor shall identify all defects in the existing pipe requiring corrective action prior to pipe rehabilitation and identify any areas that require additional corrective actions that are above and beyond allowance for point repairs included in the bid items for pipe rehabilitation. Any areas that may require additional corrective actions shall be documented and provided to the Engineer for immediate review and direction. CCTV shall be provided to the City's Engineer within 2 weeks of notice to proceed.

Measurement for payment shall be in Linear Foot (LF) of pre-construction video inspection of pipe inspected (regardless of pipe size) and submittal of video and report to the City. Any time or materials expended on investigating inactive laterals shall be included in the unit cost of locating active laterals. Work on this bid item shall be in accordance with Sub-section 500-

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NO. 26-11758-C

1 of the Technical Provisions.

**BID ITEM NO. 6: CONSTRUCTION STAKING AND CUT SHEETS MONUMENT REFERENCING**

~~This item shall include all labor, materials, and equipment for the setting of construction stakes or markers as necessary to establish the lines and grade required for the execution and completion of the work specified in the plans and specifications. Included in this bid item is the preparation of cut/fill sheets to be submitted to the Engineer for approval prior to staking. The Contractor shall be responsible for any errors made in the sewer flow line and grade of the finished work and shall remedy the defective work with no extra cost to the City.~~

~~Measurement for payment shall be as Lump Sum (LS). For additional information, see Special Conditions of the specifications.~~

**CONSTRUCTION STAKING**

**This section specifies the work for construction staking which consists of providing all labor, tools, equipment, materials and incidentals necessary to locate by staking all improvements, to the line and grade shown on the Plans and as indicated in Section 19, "Lines and Grades" in the Special Provisions.**

**Contractor shall furnish all land surveys, establish all base lines and benchmarks and make sufficient detailed surveys needed for working points, lines and elevations. The Contractor shall develop all slope stakes and batter boards. Contractor shall also develop all additional working points, lines and elevations as he or she may desire to facilitate his or her methods and sequence of construction.**

**All work shall be staked in order to meet the lines and grades shown on the Plans. Copies of all survey cut sheets shall be provided to the City Engineer two (2) working days before the planned work begins.**

**Finished grade elevations, pipe flowlines, and walls shall be within minus five hundredths (-0.05) foot of elevation and plan location.**

**Prior to concrete pouring, formwork and survey staking shall be reviewed and approved by the City Engineer.**

**MONUMENT REFERENCING**

**The Contractor shall be responsible for the preservation of existing survey monuments. Refer to Appendix 4 for monument referencing guidelines. Refer to Appendix 13 for a list of survey monuments to be referenced within the project area.**

**Pre-Construction Monument Referencing:**

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All City of Berkeley Survey Monuments noted in Appendix 13 must be referenced, prior to work commencing, by a land surveyor licensed in the State of California pursuant to the requirements of State of California Streets and Highways Code Sections 732.5, 1492.5 and 1810.5 and Business and Professions Code Section 8771. Corner Records of this work must be submitted for filing to both the County Surveyor of Alameda County, and the City of Berkeley, Public Works Department, Engineering Division, Survey Section.

The Contractor shall file the applicable Corner Records. Corner Records MUST BE COMPLETED PRIOR TO MOBILIZATION ON SITE.

Should the Contractor, during the course of construction, encounter a survey monument or benchmark, they shall promptly notify the Engineer, in writing, so that the monument or benchmark may be properly referenced, preserved and/or restored.

The Contractor's surveyor shall search the project area to confirm the location of the monuments. The Contractor and Engineer shall meet to review the locations to define the following:

1. A monument that could be disturbed and a corner record shall be completed and filed.
2. A monument that will be disturbed and corner record shall be completed and monument re-set.

Whenever a monument appears to be threatened with removal or disturbance, the monument must be referenced, both horizontally and vertically, by or under the direction of a licensed land surveyor or civil engineer, hired by the Contractor, legally authorized to practice land surveying in the State of California. For each monument referenced, a minimum of four (4) reference points must be set and tagged with the appropriate license number of the land surveyor or civil engineer.

All reference points shall be durable and have a known location relative to the monument so that the monument can be accurately replaced from the references. When available, sound concrete shall be the best site for setting reference points. Brass or bronze disks, Mag Nails (or similar concrete nail) with washers, surveyor's nails & tags, etc., shall be used in those cases where the reference can be set on sound concrete curb, gutter, sidewalk, wall, etc.

If no suitable concrete is available, a metal bar or pipe, with a tagged cap or plug, shall be used provided that it is set flush in sound soil or pavement. No reference point shall be set on private property without the surveyor performing the referencing first obtaining permission from the property owner.

In the event that any non-referenced monuments or monument reference points become in danger of being disturbed due to construction, the Contractor shall cease

**the threatening activity and notify the Project Manager and City Survey Staff immediately. Response to endangered monuments or reference points is a priority and they shall be referenced in accordance with the City of Berkeley Monument Reference Guidelines (see Appendix). In no case may an unreferenced monument or monument reference point be damaged during construction.**

**Should any monument not designated for replacement be disturbed or sustain damage during construction, the Contractor shall bear the expense for rebuilding it as well as for the survey work that a Professional Land Surveyor licensed in the State of California hired by the contractor must perform in the process. In any instance where the City deems a damaged monument to be irreplaceable, whether designated or not designated for replacement, the Contractor shall be fined \$20,000 per monument.**

#### **Documentation**

**Within two (2) weeks of the completion of any monument referencing, a Corner Record for each monument referenced shall be filed with Alameda County, and copies of the signed sealed submittals of the Corner Record(s) shall be provided to the Engineer.**

#### **Corner Record Monument and Reference Point Conditions and Descriptions**

**Corner Records shall include a detailed description of the monument referenced and reference points set:**

- 1. Description of monument character and setting (2" brass disc stamped CITY OF BERKELEY UNLAWFUL TO DEFACE in monument well, 3/4" brass pin in monument well, 1" square iron bar in monument well, 1-1/2" iron pipe in soil, etc.).**
- 2. Description of monument reference point character and setting (1" brass disc stamped LS ##### in concrete, mag nail & washer stamped LS ##### in top of curb, nail & tag LS ##### in concrete walk, rebar & cap LS ##### in asphalt pavement, etc.).**
- 3. Labeled with the official City of Berkeley monument designation (B#####).**
- 4. North arrow and graphic scale.**
- 5. Note pertaining to the method used for establishing the reference point elevations.**

#### **Unacceptable Reference Points**

**In no case will lead, or any other material that may cause harm, be used in any portion of the referencing process. Sole responsibility for the removal of such products and any harm they cause will be borne by the surveyor responsible for using the product in the referencing process.**

**Cut crosses, scribed lines, permanent marker, paint, wood hubs, etc., due to their limited lifecycle, shall not be used as a reference point.**

**No reference point may be set on any fire hydrant or similarly temporary fixture.**

**Post-Construction Monument Checking:**

**After construction is complete, a surveyor's report, signed and stamped, is required. The report shall detail the post-construction findings at each monument, either verifying that the monument remains in its pre-construction location, or that the monument has indeed been disturbed.**

**Post-Construction Monument Replacement:**

**Should any monument be found disturbed, the contractor shall replace said monument and file the associated Post-Construction Corner Record with the County and provide a copy to the City**

**Measurement for payment shall be as Lump Sum (LS) and shall include full compensation for furnishing all labor, materials, tools, equipment, supervision, and incidentals and for doing all the work involved as specified in the Standard Specifications and these Specifications, and as directed by the Engineer as may be required to complete the work. For additional information, see Special Conditions of the specifications.**

**BID ITEM NO. 7: REHABILITATE EXISTING MAINTENANCE HOLE OR JUNCTION BOX, ALL DEPTHS**

Contractor shall verify that the maintenance hole or precast concrete junction box identified to be rehabilitated is a precast concrete maintenance hole or precast concrete junction box. Brick maintenance holes shall not be rehabilitated except where specifically noted. If the structure is not a precast concrete maintenance hole or junction box, Contractor shall notify the Engineer for further direction and prior to any further work on the structure. If the structure is a precast concrete maintenance hole, work shall proceed as described below.

This item shall include all labor, materials and equipment as needed for rehabilitation of existing structure. Work includes but is not limited to removal of existing concrete as required, removal of existing coating, removal of existing steps, removal and replacement of the rim, frame and cover, delivery of discarded frame and cover to the City's Corporation Yard, repair of damaged connections to structures, construction of new concrete flow channel as indicated in the plans and specifications, installation of new drop tee connection when elevation difference between the inlet and outlet is at least the distance for the required fittings and the drop is 18-inches or greater, cleaning using hydraulically propelled, high-velocity jet, or mechanically powered equipment, lining with Mainstay ML-72, Parson Environmental PARSON MH LINER, or other approved equal within interior bed of maintenance hole and to interior wall, coating of maintenance hole base and interior wall with Mainstay DS-5, Parson Environmental PARSONPOXY SEL-80, or other approved equal, vacuum testing (spark/holiday or pull testing is not an acceptable test method), removal and disposal of debris, sediment and grease, flow control, diversion or bypass pumping, dewatering, furnishing of

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concrete to raise the maintenance hole invert to the elevation shown in the Plans, and forming and reconstructing channels and base. The existing structure channel shall be removed prior to placing new pipe and concrete. If plastic pipe is laid through maintenance holes, cement water stop maintenance hole coupling shall be used at the pipe entry and exit point for all pipes, and shall be in accordance with the plans and specifications.

Listed below are the names of concrete repair and liner material for maintenance hole rehabilitation and their local distributor:

a) Mainstay by Madewell Products Corporation

Steve Hallam, Sales Manager

Telephone: (770) 856-4470

Fax: (866) 859-2961

b) Parson Environmental Products, Inc.

Telephone: (800) 356-9023

Fax: (610) 582-6064

Any similar methods submitted by the Contractor that will produce the same result of eliminating water infiltration shall be reviewed and approved by the Engineer. Rehabilitation of the maintenance hole interior surface by means of grouting only will not be accepted. Maintenance hole rehabilitation shall include the installation of an approved lining and coating material. Refer to Section 500-2.5 of Part D – Technical Provisions for lining material and epoxy coating requirements.

Measurement for payment shall be as Each (EA). The Contractor shall be paid on the basis of work completed as noted on the monthly submission of progress payment and after the delivery of the discarded frame and cover to the City's Corporation Yard. **The City reserves the right to withhold payment for work under this bid item until successful completion of required testing.**

**BID ITEM NO. 8: CONSTRUCT STD. MAINTENANCE HOLE AND DROP**  
**MAINTENANCE HOLE, INCL. LINING, ECCENTRIC CONES,**  
**ALL DEPTHS (NOT USED)**

This item shall include all labor, materials, and equipment necessary for the excavation and construction of a new standard maintenance hole or drop maintenance hole as shown in the plans and specifications, the connection to pipe, drop connection, concrete encasement, bedding, backfill, including imported backfill, aggregate base material, compaction, coating of the interior wall of the maintenance hole (see Bid Item No.7 for a list of liner and coating requirements), vacuum testing, flow control, diversion or bypass pumping, dewatering, temporary and permanent resurfacing, including asphalt or concrete pavement reconstruction to restore the existing improvements. Standard maintenance holes located in the street areas shall be TYPE A frame and cover in accordance with I/I Standard Detail, Drawing No. 14 and; maintenance hole located in the backline areas shall be TYPE B frame and cover in

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accordance with I/I Standard Detail, Drawing No. 15. Standard maintenance holes shall be as shown on Project Plans, City Standard Plan 7895 Sheet 26, including standard frame and cover. Item shall also include temporary shoring, sheeting, and bracing (which may include sheet piling) as necessary for the execution and completion of the work specified in the plans and specifications.

Measurement for payment shall be as Each (EA) regardless of depth.

Contractor shall be paid on the basis of work completed as noted on the monthly submission of progress payment. **The City reserves the right to withhold payment for work under this bid item until successful completion of required testing.**

**BID ITEM NO. 9a: REMOVE EXISTING STRUCTURE AND CONSTRUCT STD. MAINTENANCE HOLE, DROP MAINTENANCE HOLE, INCL. LINING, ECCENTRIC CONES, ALL DEPTHS**

Contractor shall verify that the structure identified to be removed is a brick maintenance hole. If the maintenance hole is not a brick maintenance hole, Contractor shall notify the Engineer for further direction and prior to any further work on the maintenance hole. If the structure called out to be removed is an existing lamphole, cleanout, or junction box, contractor shall verify that the structure called out on the plans accurately reflects field conditions. If the maintenance hole is a brick maintenance hole or other structure as called out on the plans, work shall proceed as described below.

This item shall include all labor, materials, and equipment necessary for the excavation and complete removal of existing maintenance hole, lamphole, cleanout, or junction structure, removal and replacement of the maintenance hole rim, frame and cover, delivery of discarded frame and cover to the City's Corporation Yard, removal and disposal of debris, the construction of a new standard maintenance hole, mini- maintenance hole, drop maintenance hole, or junction box as shown in the plans and specifications, the connection to pipe, drop connection, concrete encasement, bedding, backfill, including imported backfill, aggregate base material, compaction, coating of the interior wall of the maintenance hole (see Bid Item No.7 for a list of liner and coating requirements), vacuum testing, flow control, diversion or bypass pumping, dewatering, temporary and permanent resurfacing, including asphalt or concrete pavement reconstruction to restore the existing improvements. Standard maintenance holes located in the street areas shall be TYPE A frame and cover in accordance with I/I Standard Detail, Drawing No. 14 and; structures located in the backline areas shall be TYPE B frame and cover in accordance with I/I Standard Detail, Drawing No. 15. Standard maintenance holes shall be as shown on Project Plans, City Standard Plan 7895 Sheet 26, including standard frame and cover. Item shall also include temporary shoring, sheeting, and bracing (which may include sheet piling) as necessary for the execution and completion of the work specified in the plans and specifications.

Measurement for payment shall be as Each (EA) regardless of depth.

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The Contractor shall be paid on the basis of work completed as noted on the monthly submission of progress payment and after the delivery of the discarded frame and cover to the City's Corporation Yard. **The City reserves the right to withhold payment for work under this bid item until successful completion of required testing.**

**BID ITEM NO. 9b: REMOVE EXISTING STRUCTURE AND CONSTRUCT  
LAMPHOLE OR CLEANOUT, ALL DEPTHS**

Contractor shall verify that the structure identified to be removed on the plans matches field conditions. If the structure type called out on the plans does not match field conditions, Contractor shall notify the Engineer for further direction and prior to any further work on the maintenance hole. If the structure called out to be removed is verified to match field conditions, work shall proceed as described below.

This item shall include but is not limited to all labor, materials, and equipment necessary for the excavation, pipe cutting and complete removal of existing lamphole, cleanout, or junction structure, including removal of the rim, frame and cover, delivery of discarded frame and cover to the City's Corporation Yard, removal and disposal of debris, installation of a cleanout and lateral riser, cleanout fitting, couplings, riser, connection to the existing sewer, concrete collar, frame, cover, backfill including imported backfill, compaction, vacuum testing, flow control, diversion or bypass pumping, dewatering, temporary and permanent resurfacing, including asphalt or concrete pavement reconstruction to restore the existing improvements. Item shall also include temporary shoring, sheeting, and bracing (which may include sheet piling) as necessary for the execution and completion of the work specified in the plans and specifications.

This item also includes restoration of the work area to equal or better conditions including any affected landscaping, hardscapes, planters, fencing, walls, etc.

Measurement for payment shall be as Each (EA). The Contractor shall be paid on the basis of work completed as noted on the monthly submission of progress payment and after the delivery of the discarded frame and cover to the City's Corporation Yard. **The City reserves the right to withhold payment for work under this bid item until successful completion of required testing.**

**BID ITEM NO. 9c: REMOVE EXISTING STRUCTURES AND CONSTRUCT 36”  
DIAMETER HDPE MH, ALL DEPTHS**

Contractor shall verify that the structure identified to be removed on the plans matches field conditions. If the structure type called out on the plans does not match field conditions, Contractor shall notify the Engineer for further direction and prior to any further work on the maintenance hole. If the structure called out to be removed is verified to match field conditions, work shall proceed as described below.

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This item shall include but is not limited to all labor, materials, and equipment necessary for the excavation, pipe cutting and complete removal of existing lamphole, cleanout, or junction structure, including removal of the rim, frame and cover, delivery of discarded frame and cover to the City's Corporation Yard, removal and disposal of debris, installation of a 36" diameter HDPE MH, reducer, riser, connection to the existing sewer, concrete collar, frame, cover, backfill including imported backfill, compaction, vacuum testing, flow control, diversion or bypass pumping, dewatering, temporary and permanent resurfacing, including asphalt or concrete pavement reconstruction to restore the existing improvements. Item shall also include temporary shoring, sheeting, and bracing (which may include sheet piling) as necessary for the execution and completion of the work specified in the plans and specifications.

This item also includes restoration of the work area to equal or better conditions including any affected landscaping, hardscapes, planters, fencing, walls, etc.

Measurement for payment shall be as Each (EA). The Contractor shall be paid on the basis of work completed as noted on the monthly submission of progress payment and after the delivery of the discarded frame and cover to the City's Corporation Yard. **The City reserves the right to withhold payment for work under this bid item until successful completion of required testing.**

**BID ITEM NO. 10: REHABILITATION BY METHOD "A" CURED-IN-PLACE-PIPE (CIPP) LINER, INCLUDES POINT REPAIR TO CORRECT SAGS**

This method of sewer rehabilitation involves the insertion of an approved polyester, epoxy, or epoxy-vinyl ester-resin-impregnated flexible fabric tube. The material shall be compatible with and capable of carrying epoxy or epoxy-vinyl-ester resin, be able to withstand installation pressures and curing temperatures. The approved epoxy shall be compatible with the application and be able to cure in the presence of hot water or steam. Refer to Section 500-1.4 of the "Greenbook" 2015 Edition and Part D – Technical Provisions for material composition, testing and other requirements for the installation of CIPP liner. Refer to Section 500-1.2 of the "Greenbook" 2015 Edition and Part D – Technical Provisions for Pipeline Point Repair/Replacement. PVC Pipe Liner is not allowed for this project.

If specified on the plans, this method can also include the use of an approved ultraviolet (UV) light-cured resin-impregnated fiberglass tube liner (See Special Condition No. 30). The Project Engineer reserves the right to change the design from UV CIPP to flexible fabric (felt) CIPP.

**The following applies to CIPP installations in plastic host pipe:**

CIPP in plastic host pipe is more time-consuming and challenging than conventional CIPP, in part because the heating process required to cure the liner can warp the host pipe, meaning the curing process has to be slower and cooler. As such, the liner and curing method selected need to be chosen with care. Approved methods for CIPP in plastic pipe are listed below.

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- An approved epoxy-impregnated flexible fabric tube with steam or hot water-cure. If epoxy liners are proposed, Contractor shall submit verification that they have adequate experience with using epoxy liners successfully on comparable plastic host pipe projects, which might include listing of three comparable completed projects or other acceptable documentation that the contractor is skilled in this work.
- Polyester fabric liners with styrene-free vinyl ester resin may be used in conjunction with hot water cure. Steam cure may be acceptable at Engineer's sole discretion if Contractor submits verification that they have adequate experience with using the combination of styrene-free vinyl ester resin and steam cure on comparable plastic-host pipe projects. Such documentation might include listing of three comparable completed projects or other acceptable documentation that the contractor is skilled in this work.
- Alternates to the options listed above may be submitted to Engineer for approval. Submittal shall include detailed documentation that the methodology chosen is suitable for lining a plastic host pipe. Documentation shall include that that liner type/cure type has been used successfully on at least three different comparable plastic host pipe projects, and written documentation from the manufacturer that the submitted materials and methods are an appropriate choice, or other method of demonstrating expertise that is acceptable to the Engineer. Approval of any alternate is at the sole discretion of the Engineer.

**The following applies to all CIPP installations, regardless of host pipe material:**

The cured-in-place liner thickness shall be a minimum of 0.24 inches (6.0 mm) or as calculated by the Contractor, whichever is greater. Liner design calculations shall be supported by field analysis, technical assumptions, requirements of these Specifications and ASTM F 1216 X1.2.1. Calculations and product information shall be submitted in accordance with Part C, Subsection 401.12 of the Specifications prior to ordering liner.

The CIPP liner shall fit sufficiently tight within the existing pipe so as to not leak at the manholes, at the service connections or through the wall of the installed pipe. If leakage occurs at the manholes or the service connections, the Contractor shall seal these areas to stop all leakage using a material compatible with the CIPP and host pipe, resistant to sulfuric acid, and suitable for contact with sewage, as approved by the Engineer.

Contractor responsible to obtain all EBMUD permits, including but not limited to disposal or discharge of any water into an EBMUD wastewater treatment plant, as required by applicable regulations as part of the contract scope (See Appendix 8). Contractor is responsible for repair of host pipe should it become damaged during the construction process.

This item shall include all labor, materials, and equipment necessary for the execution and

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completion of this rehabilitation method, including, but not limited to surface removal and restoration of any existing improvements disturbed by construction including restoration of curb, gutter, sidewalk and asphalt, restoration of existing improvements such as landscaping, lawn, brick walkways, retaining walls, driveways, fences, all concrete joint to joint, etc. (See Special Condition No. 18), dewatering, flow control, diversion or bypass pumping (See Special Condition No. 40; Note that bypass pumping for sewer mains 15" and larger, shall be included in Bid Item No. 27), point repairs, removal of protruding laterals, removal of root intrusion (See Special Condition No. 42 and Appendix 8), excavation, backfill including imported backfill, sewer cleaning, insertion and curing of fabric tube, reinstatement of lateral connections, and pressure testing sewer pipe post liner installation.

Item shall also include the performance of point repairs needed to correct the alignment (sags, offset joints, protruding laterals, etc.) and shall be replaced in-kind, with the new pipe's dimensions and material matching the existing pipe, if such repairs are not identified in the drawings and encountered during pre-construction closed-circuit television inspections or construction. This item includes an allowance for one additional point repair (25 contiguous feet, or less) per 600 feet of total existing pipe being rehabilitated in the unit price bid. See Special Condition No. 15. Point repairs identified in the drawings are included in Bid Item No. 30.

Any damage to existing maintenance hole lining caused by the Contractor during performance of work under this bid item shall be repaired to the satisfaction of the Engineer at no cost to the City.

**Unless otherwise noted on the Plans, lower laterals connected to mains rehabilitated by Method "A", shall be rehabilitated and paid for per Bid Item No. 13.**

Obtaining construction access from property owners for work on private property shall be included in the unit bid price, see Special Condition No. 20.

The Contractor shall verify the actual dimensions and sizes of existing pipes prior to procuring CIPP materials. If the actual dimensions and sizes are outside of acceptable tolerances provided by the CIPP manufacturer and require a larger CIPP than described in the contract bid documents, a change order will be issued to adjust the cost, and the Contractor will be compensated for any increase based on the unit cost difference between the bid unit price and the actual unit price for labor and materials. If the actual dimensions and sizes are outside of acceptable tolerances provided by the CIPP manufacturer and require a smaller CIPP than described in the contract bid documents, a change order will be issued to adjust the cost, and the City will be credited for any decrease based on the unit cost difference between the bid unit price and the actual unit price for labor and materials.

Payment for traffic control plans required for work under this bid item are included in Bid Item No. 2.

Measurement for payment shall be in Linear Foot (LF). Payment shall be per host pipe

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diameter and material as follows:

**Bid Item No. 10:** Method “A”, CIPP, 18-inch diameter, non-plastic host pipe

Payment includes as-built submittals to the City. **The City reserves the right to withhold payment for work under this bid item until successful completion of required testing.**

**BID ITEM NO. 11: REHABILITATION BY METHOD "B" PIPE SPLITTING OR  
OTHER COMPARABLE METHOD, INCLUDES POINT REPAIR  
TO CORRECT SAGS**

This method involves the use of a hydraulically powered system to install a new pipe through, and in the place of, an existing pipe. This method includes the operation known as pipe splitting or bursting whereby the hydraulic powered system is used to expand and break away existing pipe and at the same time pull a new pipe into the resulting pipe space.

This method also includes the operation known as sliplining whereby a new pipe is inserted into and pulled through an existing pipe of larger diameter, and the existing pipe generally remains intact.

There are several types of pipe breaking and/or sliplining equipment now available and the Contractor shall submit to the City for review and approval the method to be used, procedures, equipment and diagrammatic sketches showing the pipe installation.

EBMUD's zone of influence for ground movement caused by pipe splitting shall be determined by the inside diameter of the existing pipe subtracted from the outside diameter of the expander head and multiplying by ten (Pipe Bursting Good Practices Guidelines, NASTT). These findings shall be provided to the City and reviewed by EBMUD prior to the start of construction.

This item shall include all labor, materials, and equipment necessary for the execution and completion of this rehabilitation method, including, but not limited to potholing of utilities, surface removal and restoration including temporary and permanent resurfacing, but not limited to surface removal and restoration of any existing improvements disturbed by construction including restoration of curb, gutter, sidewalk and asphalt, restoration of existing improvements such as landscaping, lawn, brick walkways, retaining walls, driveways, fences, all concrete joint to joint, etc. (See Special Condition No. 18), excavation of pits, dewatering, flow control, diversion or bypass pumping (See Special Condition No. 40), point repairs, excavation backfill including concrete grout where noted on the drawings and at lateral connections and other openings, imported backfill, compaction of bedding material beneath and around the location of active lateral connections and at excavation pits, pipe cleaning, pipe installation, and pressure testing of new sewer line.

Pipe bursting method shall be in accordance with Section 500-1.6 of Part E -“Regional

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Standards” June 30, 2016 Edition. Refer to Section 500-1.2 of the “Greenbook” 2015 Edition and Part D – Technical Provisions for Pipeline Point Repair/Replacement.

At no extra cost to the City, Contractor shall repair to original condition any surface damaged as a result of ground heave from method “B” rehabilitation. This includes restoration of grading, paving, sidewalks, driveways, curb, gutter, striping, landscaping, or of any other surface feature damaged by method “B” rehabilitation.

Item shall also include the performance of point repairs needed to correct the alignment (sags, offset joints, protruding laterals, etc.) and shall be replaced in-kind, with the new pipe's dimensions and material matching the existing pipe, if such repairs are not identified in the drawings and encountered during pre-construction closed-circuit television inspections or construction. This item includes an allowance for one additional point repair (25 contiguous feet, or less) per 600 feet of total existing pipe being rehabilitated in the unit price bid. See Special Condition No. 15. Point repairs identified in the drawings are included in Bid Item No. 30.

Obtaining construction access from property owners for work on private property shall be included in the unit bid price, see Special Condition No. 20).

Item shall also include temporary shoring, sheeting, and bracing (which may include sheet piling) as necessary for the execution and completion of the work specified in the plans and specifications. See Special Condition No. 19 for approximation of ground elevation and depth of excavation for backline sewers.

The Contractor shall verify the actual dimensions and sizes of existing pipes. If the actual dimensions and sizes require a larger pipe than described in the contract bid documents, a change order will be issued to adjust the cost, and the Contractor will be compensated for any increase based on the unit cost difference between the bid unit price and the actual unit price for labor and materials. If the actual dimensions and sizes require a smaller pipe than described in the contract bid documents, a change order will be issued to adjust the cost, and the City will be credited for any decrease based on the unit cost difference between the bid unit price and the actual unit price for labor and materials.

Payment for traffic control plans required for work under this bid item are included in Bid Item No. 2.

Additional pavement restoration required for pipe splitting due to paving moratorium streets shall be paid under this bid item. Pavement restoration for moratorium streets shall conform to the City of Berkeley Standard Detail, Plan No. 8136.

Measurement for payment shall be in Linear Foot (LF). Payment shall be per new pipe diameter as follows:

**Bid Item No. 11b:** Sewer main replacement maintaining pipe size at 6-inch and 8-inch diameter and increasing pipe size from 6-inch to 8-inch

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diameter using Method “B” Pipe Splitting

**Bid Item No. 11c:** Sewer main replacement maintaining pipe size at 15-inch and 18-inch diameter and increasing pipe size from 15-inch to 18-inch diameter using Method “B” Pipe Splitting

**Bid Item No. 11d:** Sewer main replacement maintaining pipe size at 20-inch diameter and increasing pipe size from 18-inch to 20-inch diameter using Method “B” Pipe Splitting

Where no upsize is specified, the inner diameter of the new pipe shall match that of the existing pipe or be an approved equivalent.

**Where shown on the Contract Plans, as an option the Contractor may select Method “C” Traditional Open Trench as a construction method substitution to Method “B” Pipe Splitting at no additional cost to the City.**

The Contractor shall be paid on the basis of work completed as noted on the monthly submission of progress payment. Payment includes As-Built submittals to the City. **The City reserves the right to withhold payment for work under this bid item until successful completion of required testing.**

**BID ITEM NO. 12: SEWER CONSTRUCTION AND REPLACEMENT BY METHOD “C” TRADITIONAL OPEN TRENCH METHOD, INCLUDES REPAIR OF SAGS**

This item shall include all labor, materials, and equipment necessary for the execution and completion of this work including, but not limited to saw cutting of existing surface, excavation, hand excavation including potholing to determine the location of existing sewer and adjacent main and service utilities before trenching, correction of conflict between new sewer and utilities, removal and disposal of abandoned utilities as required, surface removal and restoration of any existing improvements disturbed by construction including restoration of curb, gutter, sidewalk and asphalt, restoration of existing improvements such as landscaping, lawn, brick walkways, retaining walls, driveways, fences, all concrete joint to joint, etc. (see Special Condition No. 18), flow control, diversion or bypass pumping (Note: Bypass Pumping for sewer mains 15” and larger, shall be included in Bid Item No. 28), locating wire, connection to existing structures, dewatering, bypass pumping, pipe provision and installation, bedding, backfill, including imported backfill, aggregate base material, compaction of bedding material beneath and around the main and at the locations of active lateral connections, pipe cleaning, pipe installation, temporary resurfacing, permanent resurfacing including concrete pavement reconstruction, pressure testing of new sewer line, and all other work (excluding maintenance holes) necessary to install the pipe complete and in place.

This method includes the excavation of trenches large enough to remove the existing pipe and accommodate the installation of new HDPE pipe. HDPE pipe length shall be assembled in the field with butt-fused joints in accordance with ASTM D 2657 and Section 500-1.3.5 of

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the Technical Provisions.

Obtaining construction access from property owners for work on private property shall be included in the unit bid price (see Special Condition No. 20).

Item shall also include temporary shoring, hydraulic shoring, sheeting, and bracing (which may include sheet piling) as necessary for the execution and completion of the work specified in the plans and specifications. See Special Condition No. 19 for approximation of ground elevation and depth of excavation for backline sewers.

Item shall also include the performance of point repairs needed to correct the alignment (sags, offset joints, protruding laterals, etc.) and shall be replaced in-kind, with the new pipe's dimensions and material matching the existing pipe, if such repairs are not identified in the drawings and encountered during pre-construction closed-circuit television inspections or construction. This item includes an allowance for one additional point repair (25 contiguous feet, or less) per 600 feet of total existing pipe being rehabilitated in the unit price bid. See Special Condition No. 15. Point repairs identified in the drawings are included in Bid Item No. 30.

Payment for traffic control plans required for work under this bid item is included in Bid Item No. 2.

Additional pavement restoration required for traditional open trench due to paving moratorium streets shall be paid under Bid Items No. 33 and/or 34. Pavement restoration for moratorium streets shall conform to the City of Berkeley Standard Detail, Plan No. 8136. Moratorium streets and limits affected by this bid item are as follows:

|                  |                                       |
|------------------|---------------------------------------|
| Woolsey Street   | Hillegass Avenue to College Avenue    |
| Hillegass Avenue | Dwight Way to Woolsey Street          |
| Derby Street     | Telegraph Avenue to Sacramento Street |
| Dwight Way       | Piedmont Avenue to East End           |

Measurement for payment shall be in Linear Foot (LF). Payment shall be per new pipe diameter as follows:

**Bid Item No. 12b:** Sewer construction and main replacement maintaining pipe size at 8-inch diameter and increasing pipe size from 6-inch to 8-inch diameter using Method "C" Traditional Open Trench

**Bid Item No. 12c:** Sewer construction and main replacement maintaining pipe size at 10-inch diameter and increasing pipe size from 8-inch to 10-inch diameter using Method "C" Traditional Open Trench

**Bid Item No. 12d:** Sewer construction and main replacement increasing pipe size from 10-inch to 12-inch and 12-inch to 14-inch diameter using Method "C" Traditional Open Trench

**Bid Item No. 12e:** Sewer construction and main replacement maintaining pipe size

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at 20-inch diameter and increasing pipe size from 18-inch to 20-inch diameter using Method "C" Traditional Open Trench  
**Bid Item No. 12f:** Sewer construction and main replacement maintaining pipe size at 24-inch diameter and increasing pipe size from 21-inch to 24-inch diameter using Method "C" Traditional Open Trench

Where no upsize is specified, the inner diameter of the new pipe shall match that of the existing pipe or be an approved equivalent.

**Where shown on the Contract Plans, as an option the Contractor may select Method "B" Pipe Splitting as a construction method substitution to Method "C" Traditional Open Trench at no additional cost to the City.**

The Contractor shall be paid on the basis of work completed as noted on the monthly submission of progress payment. Payment includes As-Built submittals to the City. **The City reserves the right to withhold payment for work under this bid item until successful completion of required testing.**

**BID ITEM NO. 13: LOWER LATERAL RECONSTRUCTION (TYPICALLY 4-INCH AND 6-INCH LATERALS)**

This item shall include all labor, materials, and equipment necessary for notification and coordination with the public and for installation of lower lateral reconstruction, including but not limited to saw cutting of existing surfacing including concrete pavement; surface removal and restoration; excavation; dewatering; removal and disposal of existing pipe; locating wire; flow control, diversion or bypass pumping; provision and installation of high density polyethylene pipe (HDPE SDR-17) and fittings (the new lateral pipe and two-way cleanout shall match the existing size); connection to sewer main; bedding; backfill including imported backfill; compaction; mortar cement for plugging abandoned sewer main at point of disconnections; mortar cement for plugging abandoned sewer laterals at point of disconnection; demolition and removal of existing tee, lateral riser, and cleanout frame and cover for abandoned sewer laterals; testing; temporary and permanent resurfacing including asphalt or concrete pavement reconstruction to match existing improvements disturbed by construction including restoration of curb, gutter, sidewalk and asphalt, restoration of existing improvements such as landscaping, lawn, brick walkways, retaining walls, driveways, fences, all concrete joint to joint, etc. (see Special Condition No. 18); temporary sheeting, plywood, or equivalent type of cover to protect newly-poured concrete from vandalism; sidewalk and driveway repair; and all other necessary work to install the pipe complete and in place.

Item shall also include temporary shoring, sheeting, and bracing as necessary for the execution and completion of the work specified in the plans and specifications. See Special Condition No. 19 for approximation of ground elevation and depth of excavation for backline sewers.

The Contractor shall verify the actual dimensions and sizes of existing pipes. If the actual

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dimensions and sizes require a larger pipe than described in the contract bid documents, a change order will be issued to adjust the cost, and the Contractor will be compensated for any increase based on the unit cost difference between the bid unit price and the actual unit price for labor and materials. If the actual dimensions and sizes require a smaller pipe than described in the contract bid documents, a change order will be issued to adjust the cost, and the City will be credited for any decrease based on the unit cost difference between the bid unit price and the actual unit price for labor and materials.

Additional pavement restoration required for lower lateral reconstruction due to paving moratorium streets shall be paid under this bid item. Pavement restoration for moratorium streets shall conform to the City of Berkeley Standard Detail, Plan No. 8136. Moratorium streets and limits affected by this bid item are as follows:

|                  |                                       |
|------------------|---------------------------------------|
| Woolsey Street   | Hillegass Avenue to College Avenue    |
| Hillegass Avenue | Dwight Way to Woolsey Street          |
| Derby Street     | Telegraph Avenue to Sacramento Street |
| Dwight Way       | Piedmont Avenue to East End           |

Measurement for payment shall be Linear Foot (LF). Pipe shall be measured along the centerline of the pipe from downstream side of the two-way cleanout near the curb or sidewalk to the connection of the fitting at the sewer main, per Plan Detail 1 of Sheet 27. Unit prices for this bid item are for all depths. Payment includes all As-Built drawings and completion of "Sewer lateral As- Built Record" Forms. **The City reserves the right to withhold payment for work under this bid item until successful completion of required testing.**

**OPTION**- Lower lateral reconstruction using pipe rehabilitation method "B" instead of open trench method shall conform to the description of bid item – "SEWER REHABILITATION BY METHOD "B" – PIPE SPLITTING OR OTHER COMPARABLE METHOD" and Special Condition No. 15. Replacement of Concrete encased lower lateral encountered when using this method shall be removed at the Contractor's expense.

**OPTION**- Lower lateral reconstruction using pipe rehabilitation Method "A" instead of open trench method shall conform to the description of bid item – "SEWER REHABILITATION BY METHOD "A" – CURED IN PLACE PIPE (CIPP) LINER" and Special Condition No. 15. **This method for lateral rehabilitation is only acceptable where indicated on the plans.**

**BID ITEM NO. 14: INSTALLATION OF TWO-WAY CLEANOUT AND LATERAL RISER**

This item shall include all labor, materials, and equipment necessary for notification and coordination with the public and for installation of a two-way cleanout and lateral riser, including but not limited to, excavation, surface removal and restoration of any existing improvements disturbed by construction including restoration of curb, gutter, sidewalk and asphalt, restoration of existing improvements such as landscaping, lawn, brick walkways, retaining walls, driveways, fences, all concrete joint to joint, etc. (see Special Condition No.

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18); pipe cutting, cleanout fitting, couplings, riser, connection to the lateral and/or existing building sewer, concrete collar, frame, cover, backfill including imported backfill, compaction, flow control, and dewatering as required. Where a two-way cleanout is installed three feet or less from sewer main, contractor shall replace and re-connect the lateral from the cleanout to the sewer main (See Bid Item No. 13).

Measurement for payment shall be as Each (EA). Payment includes all As-Built drawings and completion of "Sewer lateral As- Built Record" Forms.

**BID ITEM NO. 15: CONNECTION OF ACTIVE LATERALS TO NEW OR REHABILITATED SANITARY SEWER MAIN OR MAINTENANCE HOLE**

Contractor is responsible for reconnecting all active sewer laterals to the new or rehabilitated sewer mains and maintenance holes. This item shall include all labor, materials and equipment necessary for preparation of maintenance hole or new sewer main for lateral connection; lateral connection including butt fusion, saddle or wye, and miscellaneous materials; use of in situ cutter, bedding, excavation, backfill including imported backfill; dewatering, flow control, diversion or bypass pumping, testing, compaction, and temporary and permanent resurfacing to match existing improvements. The contractor is responsible for locating all active sanitary sewer laterals connecting to rehabilitated sewer main or maintenance hole prior to construction. Payment for locating active sewer laterals is included as part of Bid Item No. 5.

Sanitary sewer lateral connection(s) to HDPE mains shall be in accordance with Sections 500-1.6.6 and 500-1.6.12 of the "Regional Standards", June 30, 2016 Edition. Sanitary sewer lateral connection(s) to CIPP lined mains shall be in accordance with details shown on Plans.

For laterals rehabilitated via Method "A" CIPP liner (only allowed where indicated on the plans), this item includes the installation of TopHat or approved equal at connections where shown on the Plans.

Measurement for payment shall be as Each (EA). Payment includes all As-Built drawings and completion of "Sewer lateral As- Built Record" Forms.

**BID ITEM NO. 16: POST-CONSTRUCTION CLOSED CIRCUIT TELEVISION (CCTV) INSPECTION AND CONSTRUCTION AS-BUILT DRAWINGS**

Post-construction CCTV inspection shall be performed to determine if the construction of the new pipe is in compliance with the plans and specifications. This item shall include labor, CCTV equipment, videos and other CCTV related materials for proper documentation of the newly installed sewer pipes. Flow control, diversion and/or bypass pumping required in order to facilitate the post-construction CCTV of the large diameter sewer pipe shall be included in Bid Item No. 28.

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The camera shall be lowered into the upstream maintenance hole (or access point) and placed into the pipe. The camera cable shall be retracted to remove slack to ensure an accurate distance reading. The cable distance-counter shall be reset to the distance between the centerline of the maintenance hole and the front lens of the camera. The camera shall provide a view of the inside of the insertion maintenance hole, then move through the pipeline in a downstream direction whenever possible, stopping at the center of the next maintenance hole and provide a view of the inside of the end structure. The cable distance counter shall measure the distance between each inspection segment – centerline to centerline. The camera shall stop at all significant observations to ensure a clear and focused view of the pipe condition. Observations shall include, but not be limited to: Laterals – Standard, Laterals – Protruding, Cracks, Offset Joints, Open Joints, Sags, Line Deviations, Siphons, Missing Sections, Mortar, Infiltration, Debris, Grease, and Roots. Defects encountered during the video inspection and any rejected work shall be repaired and re-televised at the Contractor's expense.

Post-construction CCTV inspection shall be documented with written reports that include a NASSCO Pipeline Assessment Certification Program (PACP) coding of all defects. The PACP coding shall be accomplished by an operator or worker who holds current PACP certification. Inspection report shall be done using POSM format. Documentation shall consist of a color, DVD-format video, log sheets, and a written report detailing the post-construction condition of the pipeline and lateral connection/openings. The report shall note the time and date of video inspection, street name, upstream and downstream maintenance hole, direction of view, direction of flow, surface material, pipe size, pipe material, lateral connections, video tape number, counter number, and a detailed logging of defects encountered. If the quality of the video is deemed unacceptable by the Engineer, the pipeline shall be re-televised at no additional cost to the City.

Measurement for payment shall be in Linear Foot (LF) of post-construction video inspection of pipe inspected (regardless of pipe size) and submittal of two (2) copies of the final video and report to the City. Payment includes all As-Built submittals to the City.

**BID ITEM NO. 17: REMOVE EXISTING AND CONSTRUCT STANDARD CURB AND GUTTER (NOT USED)**

This item is an allowance for replacement of deteriorated curb and gutter that is adjacent and outside the limit of trench excavation. Estimated cost for the restoration of curb and gutter directly under the sewer trench excavation shall be included under sewer construction. The exact location of work of this bid item will be determined and marked in the field by the Engineer. The curb and gutter damaged during the construction shall be restored at the Contractor's expense. Work shall include saw cutting, excavation, provision of temporary curb ramps for access, removal and disposal of discarded concrete, backfill material, compaction test, Portland Cement Concrete, formwork and all other work necessary to construct the curb and gutter in place.

Measurement for payment shall be in Linear Feet (LF). The Contractor shall be paid on the basis of work completed as noted on the monthly submission of progress payment.

**BID ITEM NO. 18: REMOVE EXISTING AND CONSTRUCT STANDARD SIDEWALK  
AND DRIVEWAY (NOT USED)**

This item is an allowance for all labor, materials, and equipment necessary for the replacement of deteriorated sidewalk and driveways that are adjacent and outside the limit of trench excavation. Estimated cost for the restoration of the sidewalk and driveways directly over the sewer trench excavation and full width of sidewalk to be removed and replaced shall be included under sewer construction. The exact location of work of this bid item will be determined and marked in the field by the Engineer. The sidewalk damaged during the construction shall be restored at the Contractor's expense. Work shall include saw cutting, excavating, provision of temporary curb ramps for access, removal and disposal of discarded concrete, backfill material, aggregate base material, compaction, Portland Cement Concrete, form work and all other work necessary to construct standard sidewalk and driveways complete and in place.

Measurement for payment shall be in Square Foot (SF). The Contractor shall be paid on the basis of work completed as noted on the monthly submission of progress payment.

**BID ITEM NO. 19-20: UTILITY CROSSINGS NOT SHOWN AND/OR IDENTIFIED ON  
THE PLANS AND NOT MARKED ON THE STREET  
(REVOCABLE)**

This item is to provide an allowance for all labor, materials, and equipment necessary for potholing unforeseen utility company pipes or ducts not shown and/or identified on the Plans. This excludes existing sewer laterals encountered during open excavation and construction of the sanitary sewer. Included in this item are field investigations, hand excavation, removal and disposal of abandoned utility pipes and ducts 24-inches or smaller, field investigations, hand excavation, removal and disposal of abandoned pipes in conflict where required.

The Contractor shall notify the Engineer upon encountering this unforeseen utility crossing and before continuing the trench excavation.

Measurement for payment shall be made as Each (EA) and by the actual number of potholing performed. This item is revocable if not potholing is required.

**BID ITEM NO. 21: ROCK EXCAVATION (REVOCABLE)**

This item is for all labor, materials, and equipment necessary for excavation of rock encountered during trenching that requires jackhammering, drilling, or boring type of equipment including the excavation and removal of boulders with overall dimension of 18-inches in diameter or greater. Rock excavation shall also include hauling and disposal of rock, all labor, tools, materials, and equipment.

The Contractor shall notify the Engineer upon encountering the presence of such rock

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condition before continuing trench excavations.

Measurement for payment shall be in Cubic Yard (CY). This item shall be paid by the actual cubic yards of excavation and off-haul work performed at the various project sites.

**BID ITEM NO. 22: RECONSTRUCTION/REPLACEMENT OF CITY MONUMENT  
(REVOCABLE)**

The Contractor shall be responsible for the preservation of existing survey monuments, benchmarks, reference points, and stakes. The Contractor shall replace City Monuments and reference marks removed during the performance of the work. Whenever a City Monument is designated to be removed during the performance of the work, the Contractor shall replace the monument in accordance with Standard Plan 7940, 8090, 8091 or 8179, as applicable. Monument casings (boxes and lids) shall be provided by the contractor, and dome brass markers shall be supplied by the City.

Monument replacement must be done in a neat, workman-like manner. Pavement cuts shall be accurate, with vertical cuts to exact dimensions as shown on the Standard Plan. Each replacement monument shall be constructed such that the center of the dome brass marker is set within 0.04 foot of the referenced position. Monument boxes and lids shall be placed at the proper finished grade and as detailed by Standard Plan 7940, 8090, 8091 or 8179, as applicable. Existing monument lids shall be salvaged by the Contractor and delivered to the City Survey Staff or Project Inspector.

Monument referencing shall be done by a Professional Land Surveyor licensed in the State of California hired by the contractor, and copies of the corner records for the referenced monuments shall be provided to the City prior to the start of construction. For each monument that has been removed or disturbed during construction, the replacement monument location(s) will be established by the referencing surveyor after final pavement is completed. The new dome brass marker shall not receive final punching prior to seven (7) days after completion of the monument construction.

For each monument depicted in the plan set that has not been removed, a Professional Land Surveyor licensed in the State of California hired by the contractor shall provide to the City a surveyor's report, signed and stamped, detailing the post-construction findings at each monument, either verifying that the monument remains in its pre-construction location, or that the monument has indeed been disturbed.

In the event that any non-referenced monuments or monument reference points become in danger of being disturbed due to construction, the Contractor shall cease the threatening activity and notify the Project Manager and City Survey Staff immediately. Response to endangered monuments or reference points is a priority and they shall be referenced in accordance with the City of Berkeley Monument Reference Guidelines (see Appendix). In no case may an unreferenced monument or monument reference point be damaged during construction.

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Should any monument not designated for replacement be disturbed or sustain damage during construction, the Contractor shall bear the expense for rebuilding it as well as for the survey work that a Professional Land Surveyor licensed in the State of California hired by the contractor must perform in the process. In any instance where the City deems a damaged monument to be irreplaceable, whether designated or not designated for replacement, the Contractor shall be fined \$20,000 per monument.

Measurement for payment will be as Each (EA) for each monument installed. Work under this bid item shall include all labor, material, and incidentals necessary to install the monument complete in place. The Contractor shall be paid on the basis of work completed as noted on the monthly submission of progress payment and after the delivery of the salvaged lids to the City Survey Staff or Project Inspector.

**BID ITEM NO. 23: SUPPLEMENTAL WORK**

This item is an allowance for all labor, materials, and equipment for standby construction services as the need may arise by the City for responding to urgent or emergency sanitary sewer related projects located within the City. When the standby services are necessary, the City will define the location, limits and scope of work for the project and will request a cost proposal from the Contractor. The City has the option to accept, negotiate, approve or reject at its sole discretion any cost proposals for additional work requested. The additional work may include sanitary sewer replacement/rehabilitation and related work in either backline sewer easements on private property or within street and public right of way.

The scope will be defined, and shall include all labor, material, and equipment as needed to complete the work such as mobilization, demobilization, traffic control, construction signage, public notification, and construction staking, and may include, but is not limited to, flow control, diversion and/or bypass pumping, maintenance hole rehabilitation, construction of new maintenance hole, pipe rehabilitation, locating active laterals, lower lateral reconstruction, installation of two-way cleanouts, connection of active laterals to rehabilitated sewer main, pre- and post-construction CCTV, and preparation and submission of As-Builts. The City does not have an obligation to provide or approve of any additional work under this bid item allowance.

Measurement for payment shall be as Lump Sum (LS). The Contractor shall be paid on the basis of work completed as noted on the monthly submission of progress payment.

**BID ITEM NO. 24: BAY AREA RAPID TRANSIT (BART) DISTRICT PERMIT TO ENTER (NOT USED)**

Not Used

**BID ITEM NO. 25: CALTRANS ENCROACHMENT PERMIT/WORK**

**AUTHORIZATION (REVOCABLE)**

The City has obtained an encroachment permit for project work within Ashby Avenue (Highway 13). The Contractor shall apply for and obtain a double encroachment permit from Caltrans prior to start of work.

A minimum of one week prior to start of work under the Encroachment Permit, Contractor shall give notice to, and approval of construction details, operations, public safety, and traffic control shall be obtained from State Representative listed in the Encroachment Permit. Additional time beyond the required one week minimum advanced notice may be required for obtaining traffic control approval.

The contractor shall perform work in accordance with the provisions as stated in the Caltrans Double Permit, refer to Appendix 7 for in the permit issued to the City.

Full compensation for conforming to the requirements in the encroachment permit, and work authorization, including any required fees, shall be considered as included in the bid price.

Measurement for payment shall be as Lump Sum (LS).

**BID ITEM NO. 26: CITY OF OAKLAND – ADDITIONAL PROVISIONS AND PERMIT REQUIREMENTS (NOT USED)**

Not Used

**BID ITEM NO. 27: STORMWATER POLLUTION CONTROL AND SEWAGE SPILL PREVENTION AND RESPONSE REQUIREMENTS**

Stormwater Pollution Control shall be per Specifications, Special Condition No. 22, STORMWATER POLLUTION CONTROL.

The Contractor shall be fully responsible for preventing sewage spills, containing any sewage spillage, recovery and legal disposal of any spilled sewage, any and all fines, penalties, claims, and liability arising from negligently causing a sewage spill and any violation of any law, ordinance, code, order, or regulation as a result of a sewage spill.

Prior to the start of construction, the Contractor shall develop and submit to the City's Representative, for review and approval, a written Spill Response Plan, developed to respond to any construction related sewage spill. This shall include, but is not limited to, all labor, materials and equipment necessary for the items below:

- a. Identification of all nearby waterways, channels, catch basins and entrances to underground storm drains and furnishing all of the necessary materials, supplies, tools, equipment, labor and other services.

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- b. Means and methods of monitoring the flow in the sewer bypass system.
- c. Arrangements for an emergency response unit comprised of emergency response equipment and trained personnel to be immediately dispatched to the job site in the event of sewage spill(s).
- d. An emergency notification procedure, which includes an emergency response roster with telephone numbers and arrangements for backup personnel and equipment and an emergency notification roster. The Contractor shall designate a primary and secondary representative and include their respective phone numbers, pager numbers, and cellular phone numbers. The Contractor's representatives shall be accessible and available at all times to respond immediately to any construction related emergency.

In case of sewage spill, the Contractor shall act immediately without instructions from the City's representative, to control the spill and take all appropriate steps to contain it in accordance with their Spill Response Plan. The Contractor shall immediately notify the City's representative of the spill and all actions taken. The Contractor shall, within two working days maximum from the occurrence of the spill, submit to the City's representative a written confirmation describing the following information related to the spill:

- a. the nature and volume
- b. the specific location, date and time
- c. the duration
- d. the cause
- e. the type of remedial and/or clean up measures taken and the date and time of implementation
- f. the corrective and/or preventive actions taken
- g. the water body impacted and results of any necessary monitoring

It shall be the Contractor's responsibility to assure that all field forces, including subcontractors, know and obey all safety and emergency procedures, including the Spill Response Plan.

Measurement for payment shall be as Lump Sum (LS).

**BID ITEM NO. 28: SEWER BYPASS (FOR SEWER MAINS 15" AND LARGER)**

The Contractor shall provide temporary means to maintain and handle the sewage flow in the existing sanitary sewer system as required to complete the necessary construction and rehabilitation requirements, including but not limited to pre-construction and post-construction CCTV, rehabilitation of maintenance hole, and lateral connections. The Contractor shall prepare and submit a detailed bypass plan to the City's Representative for approval before the bypass is installed. The bypass plan shall include all traffic control measures for implementing the plan. The Contractor shall size the bypass system to handle the peak flow of the system. The Contractor shall submit the bypass plan a minimum three (3) weeks advanced for City review.

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The Contractor shall provide a one-hundred percent (100%) back-up in the bypass system. The Contractor shall utilize the backup system to mitigate any additional wet weather flows, perform the necessary maintenance and repairs on the bypass system, and exercise and ensure the operability of the backup system.

Any pump, including backup pumps, shall be appropriate for sanitary sewer effluent containing solids and fibers, and be a complete unit with its own suction and discharging pumping. The backup bypass system shall be fully installed, operational, and ready for immediate use. Prior to the full operation of the bypass system, the Contractor shall demonstrate that both the primary and backup bypass systems are fully functional and adequate, and shall certify the same, in writing.

The Contractor shall provide one dedicated fuel tank for every pump/generator, if fuel/generator pumps are used. The Contractor shall provide a fuel level indicator outside each fuel tank. The Contractor shall continuously (while in use) monitor the fuel level in the tanks and ensure that the fuel level does not drop below a level equivalent to two (2) hours of continuous bypass system operation. The Contractor shall take the necessary measures to ensure the fuel supply is protected against contamination. This includes, but is not limited to fuel line water traps, fuel line filters, and protecting fuel stores from precipitation. If electric power driven pumps are used, the Contractor shall provide an emergency standby power generator.

The Contractor shall continuously (while in use) monitor the operation of the bypass system and all impacted facilities, and shall continuously monitor the flow levels downstream and upstream of the bypass to detect any possible failure that may cause a sewage backup and/or spill. The Contractor shall include the means and methods of monitoring the flow in their Spill Response Plan. The Contractor shall routinely inspect and maintain the bypass system, including the backup system. The Contractor shall maintain a log of all pertinent inspection, maintenance and repair records.

This item shall include all labor, materials, and equipment necessary for the execution and completion of this work including, but not limited to saw cutting of existing surface, excavation, hand excavation including potholing to determine the location of existing sewer and adjacent main and service utilities before trenching, correction of conflict between sewer bypass and utilities as required, removal and disposal of abandoned utilities as required, surface removal and restoration of any existing improvements disturbed by construction including restoration of curb, gutter, sidewalk, curb ramp, valley gutter and asphalt, restoration of existing improvements such as landscaping, lawn, brick walkways, retaining walls, driveways, speed tables, fences, all concrete joint to joint, etc. (see Special Condition No. 18), bypass plan, flow control, diversion or bypass pumping, dewatering, pump setup, plugging, pipe provision and installation, fuel/electricity, maintenance, monitoring water levels, bedding, backfill, including imported backfill, aggregate base material, compaction of bedding material beneath and around the bypass, temporary resurfacing, pipe removal, permanent resurfacing including concrete pavement reconstruction, restoring all existing striping and pavement markings affected by sewer replacement, testing of sewer bypass line,

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and all other work (excluding maintenance holes) necessary to install the sewer bypass complete and in place.

All labor, materials, and equipment associated with these sewer bypass requirements for sewer mains 15" and larger shall be included in this bid item. Typical flow control, diversion, and bypass pumping required to complete the necessary construction of smaller sewer mains shall be included in subsequent bid items. See bid item descriptions.

All permits and fees necessary for the sewer bypass are the responsibility of the Contractor and shall be included in this pay item at the Contractor's expense.

The Contractor shall perform all work associated with bypass pumping without causing damage to existing improvements to remain, and without causing a spill of sewage outside the sewer system. Any damage resulting from the Contractor's work shall be repaired or replaced to the satisfaction of and at no cost to the City, at the Contractor's expense. All fines, and cost associated with the cleanup of spills, shall be the responsibility of the Contractor.

Measurement for payment shall be as Lump Sum (LS). A payment of 15% will be made upon complete installation and startup of the bypass pumping system and a 10% payment will be made upon disassembly of the bypass pumping system and restoration of all disturbed areas. The remaining 75% will be paid on the basis of work completed as noted on the monthly submission of progress payment.

Sanitary sewer flow data and flow hydrograph is provided in Appendix 11. Additional data, including sewer network maps, if available, may be requested by the Contractor via email to AYemane@berkeleyca.gov. Allow three working days in advance for a response. The Contractor shall be responsible for verifying actual flows in the field and all field conditions.

**BID ITEM NO. 29: INVESTIGATE OTHER EXISTING SEWER MAINS, SEWER STRUCTURES AND LATERALS**

This item shall include all labor, CCTV equipment, utility locating equipment, pressure testing, and all other equipment and materials required for investigation, testing, and/or field location work identified on the drawings. This item does not include investigation and location work included under Bid Item No. 5.

CCTV investigation shall be in accordance with Section 312-3 of the Technical Specifications. The Contractor shall notify the City's Representative upon completion of the investigation and submit the video(s) and report(s).

Measurement for payment shall be as Lump Sum (LS). The Contractor shall be paid on the basis of work completed as noted on the monthly submission of progress payment.

**BID ITEM NO. 30: CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, CREEK PERMIT – ADDITIONAL REQUIREMENTS FOR WORK**

**ADJACENT TO CITY'S CREEK (NOT USED)**

**BID ITEM NO. 31: POINT (SPOT) REPAIRS**

This item shall apply to point (spot) repairs as shown on the drawings, regardless of pipeline or maintenance hole material. This item shall include all labor, materials, and equipment necessary for the execution and completion of this work as described on the drawings and these specifications, including excavation of trenches large enough to repair the identified defect and expose 5ft of pipe.

Obtaining construction access from property owners for work on private property shall be included in the unit bid price (see Special Condition No. 20).

Items shall include all labor, materials, and equipment necessary for the execution and completion of this work including, but not limited to saw cutting of existing surface, excavation, hand excavation including potholing to determine the location of existing sewer and adjacent main and service utilities before trenching, correction of conflict between new sewer and utilities, removal and disposal of abandoned utilities as required, surface removal and restoration of any existing improvements disturbed by construction including restoration of curb, gutter, sidewalk and asphalt, restoration of existing improvements such as landscaping, lawn, brick walkways, retaining walls, driveways, fences, all concrete joint to joint, etc. (see Special Condition No. 18), flow control, diversion or bypass pumping (Note: Bypass Pumping for sewer mains 15" and larger, shall be included in Bid Item No. 28), removal of protruding laterals, removal of root intrusion (See Special Condition No. 42), locating wire, connection to existing structures, dewatering, bypass pumping, pipe provision and installation, bedding, backfill, including imported backfill, aggregate base material, compaction of bedding material beneath and around the main and at the locations of active lateral connections, pipe cleaning, pipe installation, temporary resurfacing, permanent resurfacing including concrete pavement reconstruction, testing of new sewer line, and all other work (excluding maintenance holes) necessary to install the pipe complete and in place.

The pipe repaired under this bid item shall be replaced in-kind, with the new pipe's dimensions and material matching the existing pipe, unless otherwise specified by the City or directed by the Engineer.

Traffic control plans required for work under this bid item are included in Bid Item No. 2.

Measurement for payment shall be made as Each (EA) and paid on the basis of work completed as noted on the monthly submission of progress payment. Payment includes As-Built submittals to the City for those repaired defects.

**BID ITEM NO. 32: PLUG AND ABANDON EXISTING SEWER MAINS, SEWER STRUCTURES AND LATERALS**

This item shall include all labor, excavation equipment, and all other equipment and materials

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required for abandonment and plugging of existing sewer mains, sewer structures and laterals where noted on the drawings. Item shall also include, slurry fill, restoration of disturbed site conditions in kind or better.

Measurement for payment shall be as Lump Sum (LS). The Contractor shall be paid on the basis of work completed as noted on the monthly submission of progress payment.

**BID ITEM NO. 33: COLD PLANE 0.2' INCLUDING HMA TYPE A (REVOCABLE)**

**General**

Cold planing shall include all work necessary to remove existing asphalt and/or concrete pavement to a predetermined depth as indicated on the drawings. The work includes, but is not limited to, removal of the existing pavement adjacent to or on top of gutters, cross gutters, ends of overlays, equipment crossings, railroad crossings, and bridge approaches.

Existing pavement surface on roadways to be milled prior to pavement inlay shall be cold planed as specified herein.

This work shall also include producing and placing hot mix asphalt (HMA) surface course using modified Standard Process and placing Minor Hot Mix Asphalt using the Method Process as indicated herein.

Comply with Section 39, "Hot Mix Asphalt," of the State Standard Specifications (Non-revised Edition) except as modified in these special provisions.

HMA associated with surface restoration of trenching and excavations for sewer main, maintenance hole, and sewer lateral restoration and spot repairs is not included in this bid item. Said restoration is understood to be included as part of each sanitary sewer rehabilitation item.

**Submittals**

Submit JMF information on Form CEM-3511 and Form CEM-3512. Submit Form CEM-3513 or CEM-3514 for mixes that have been verified within last 12 months. Provide most recent CEM-3513 if mix has not been verified within the last 12 months. For unverified mixes or out of date mix tests, final acceptance will be based on production startup tests and Contractor will be paving at their own risk.

Submit Quality Control Plan that conforms to the current Caltrans Quality Control Plan Review Checklist for Hot Mix Asphalt. Allow 20 calendar days for review.

**Cold Planing**

**Equipment**

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The machine used for planing shall have performed satisfactorily on similar work and shall meet the following requirements:

The planing machine shall be specifically designed and built for the planing of bituminous pavements without the addition of heat. It shall have the ability to plane Portland cement concrete patches in the bituminous pavement, or Portland cement concrete pavements. The cutting drum shall be a minimum of 48 inches wide and shall be equipped with carbide tipped cutting teeth placed in a variable lacing pattern to produce the desired finish.

The machine shall be capable of being operated at speeds of zero to forty feet per minute, self-propelled, and have the capability of spraying water at the cutting drum to minimize dust. The machine shall be operated in such a way so that no fumes or smoke will be produced. The machine shall be capable of removing the paving material next to curbs or gutters and be designed such that the operator thereof can at all times observe the planing operation without leaving the controls. The machine shall be adjustable for slope and depth and shall be equipped with sonic sensing devices for controlling depth.

### Construction

Limits of cold planing will be marked in the field by the Engineer prior to construction. The depths and dimensions of the cold planing are designated on the plans.

**Cold planing may require removal of existing asphalt concrete above gutter lips, in addition to the required depth below the gutter lip, due to prior overlays.** Concrete gutter pans under may be present under the existing pavement at various locations throughout the project sites. The Contractor shall remove pavement with cold plane equipment, or by other means as necessary, to the required depths, or to the top of gutter pan, whichever is less. If gutter pans are encountered within the specified cold plane depth, coordinate HMA placement with the Engineer

Pavement to be cold planed may contain pavement fabric.

Cold planing operation will not commence until a sweeper is on site.

### Lowering Utility Covers

Prior to cold planing on streets to have a uniform depth of the existing surface removed, all utility covers shall be lowered such that the cutting teeth of the planing machine passes over the adjusted lid without causing damage to the lid or frame. Contractor shall be responsible for maintaining any temporary asphalt fill material over these facilities until the final paving surface is installed. The Contractor shall clearly mark or reference lowered sanitary sewer and water valves in case emergency access is required by the agency responsible for operation of the sewer and water system.

### Pavement Removal

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All pavement areas called out for removal and replacement shall be cold planed to the dimensions indicated on the plans, or as directed by the Engineer. Pavement against curb faces shall be removed to the full depth designated for that particular section of roadway. If pavement against curb faces cannot be removed by the planing machine, the Contractor shall use other means to remove this material. Any damage to the adjoining improvements proposed to remain shall be repaired by the Contractor to the satisfaction of the Engineer at no cost to the City.

Schedule

The Contractor shall schedule the work such that HMA surface course paving is completed within 5 working days after milling. Milled pavement surface shall not be opened to traffic and all traffic lanes shall be open for traffic outside the approved working hours, unless authorized otherwise in writing by the Engineer.

**Failure to comply with these provisions shall subject the Contractor to \$1,500 per street per calendar day in liquidated damages. Multiple occurrences of liquidated damages per calendar day are not restricted.**

Temporary Striping

Streets to be milled shall be temporarily striped after completion of cold planing prior to pavement resurfacing work. Temporary striping shall consist of temporary tab markers and reflective traffic striping tape by 3M (or equal) and shall be continuously maintained by the Contractor until resurfacing work is performed. Temporary striping will be placed to match existing conditions, delineate lane lines, center lines, crosswalks, and other traffic striping legends.

Tolerances

The pavement surface after cold planing shall be uniformly rough. The grade shall not deviate from a suitable straight edge more than 1/4 inch at any point. When multiple passes are required to create the cold planed surface, the maximum variation from a stringline or straight edge shall be 1/4 inch high to 1/2 inch low. High points out of tolerance shall be replaned to fall within tolerance. Low areas shall be filled with asphalt concrete as specified herein to meet tolerances. The cost of such correction of low areas shall be entirely borne by the Contractor.

Removal and Disposal of Material

During the cold planing operation, the Contractor shall sweep the roadway with mechanical equipment and remove all loosened material from the project site until completion of the removal work.

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All material removed shall be considered the property of the Contractor and shall be removed and disposed of at the Contractor's expense.

In addition to removing the cold planed asphalt concrete, the Contractor shall remove any asphalt concrete which is adhered to the top of the adjacent gutter, cross gutter, or apron.

### Air Pollution Control

The Contractor shall take all necessary measures to avoid the dispersion of dust. Attention is directed to Subsection 14-9.02 of the Standard Specifications.

### Temporary Transitions

The Contractor shall construct temporary pavement transitions prior to allowing traffic onto cold planed pavement areas. Such transitions shall have a maximum slope of 20:1 and be constructed on kraft paper or other suitable bond breaker such that upon removal of the transition a clean notch remains. Temporary transitions are required along all planed edges at existing or new curb ramps. Temporary transitions shall also be provided along all planed edges with a drop off greater than 1 inch in depth at all paving conforms, cross gutters, and commercial and residential driveways.

### Correction of Tear Out Areas

If tear-out to the remaining, underlying layers occurs during the cold planing operation, the Contractor shall adjust his operation to minimize tear-out. Corrections shall include changing operation speed and replacing cutting teeth. Changes in cold planing depth shall only be made with approval of the Engineer.

Areas torn out by lack of diligence on the Contractor's part shall be corrected by placement of asphalt concrete conforming to the requirements of these Technical Provisions. Areas torn out due to pre-existing adhesion problems in the existing asphalt concrete shall be corrected at the City's expense as directed by the Engineer.

### Asphalt Concrete

Asphalt concrete surfacing and the placing thereof shall conform to the requirements of the Section 39, "Asphalt Concrete", of the State Standard Specifications and per Section 16 of the City of Berkeley Improvement Standards. Asphalt concrete shall be produced at an established commercial mixing plant.

### Submittals

Submit JMF information on Form CEM-3511 and Form CEM-3512. Submit Form CEM-3513 or CEM-3514 for mixes that have been verified within last 12 months. Provide most recent CEM-3513 if mix has not been verified within the last 12 months. For unverified

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mixes or out of date mix tests, final acceptance will be based on production startup tests and Contractor will be paving at their own risk.

Submit Quality Control Plan that conforms to the current Caltrans Quality Control Plan Review Checklist for Hot Mix Asphalt. Allow 20 calendar days for review.

Material Delivery Tickets shall be submitted daily.

Contractor shall submit all quality control field test results daily and laboratory test results within 5 calendar days of sampling.

Materials

Aggregate

The hot mix asphalt to be used will be as follows unless modified by the Engineer:

|                       |                  |
|-----------------------|------------------|
| Base Courses:         | 3/4-inch, Type A |
| Intermediate Courses: | 1/2-inch, Type A |
| Surface Courses:      | 1/2-inch, Type A |

Asphalt Binder

The grade of asphalt binder mixed with aggregate for HMA (Type A) shall be as follows:

|                      |          |
|----------------------|----------|
| Base Course:         | PG 64-10 |
| Intermediate Course: | PG 64-10 |
| Surface Course:      | PG 64-10 |

Mix Properties

Mix voids shall be targeted at 3.5%.

The allowable production range for mix voids shall be 2.0% to 5.0%.

The mix shall include 0.5% of liquid anti-strip. No Warm Mix Additive shall be allowed.

Delivery Tickets

Material delivery tickets shall be submitted daily. Each delivery ticket shall include information on the material type, binder type, oil content, and the mix design number. Material delivered to the project without such annotations shall be subject to rejection. The Contractor shall provide, as each truck reaches the project, State certificates of weight and measure to the Engineer. The Contractor shall provide the Engineer with a tabulation, upon completion of the project, which shows gross, tare, and net weights for each truck load

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delivered to the project.

Construction

General

The paving shall be performed so no longitudinal paving joints remain at the end of each day's paving operation.

Surface Preparation

The work shall consist of preparing the existing street surfaces prior to the commencement of paving. Such work shall include removing raised pavement markers, removing thermoplastic traffic markings and legends, controlling nuisance water, sweeping, watering, and removing loose and broken pavement and foreign material as specified in the Standard Specifications and these Technical Provisions, and as directed by the Engineer.

All vertical edges to be paved shall be tack coated. These include, but are not limited to, curb faces, gutter lips, swale edges, cross gutter edges, and pavement edges.

Tack coat shall be utilized and shall be either emulsified asphalt Grade RS-1, RS-1h, SS-1, or SS-1h conforming to Section 94, "Asphaltic Emulsions," or paving grade asphalt conforming to Section 92, "Asphalts Binder."

The asphalt tack coat shall be placed with a calibrated distributor truck per Subsection 93-1.03C of the Standard Specifications, unless otherwise specified by the Engineer. The application temperature of the asphalt emulsion shall be 300 degrees Fahrenheit minimum and 375 degrees Fahrenheit maximum.

All cold joints, both longitudinal and transverse, shall be heated with a torch immediately prior to paving. Cold joints include previous passes placed more than three hours prior. All cold joints shall be tack coated.

Leveling, Transitions, and Hot Mix Asphalt Fills

A leveling course of variable thickness shall be placed and compacted prior to placing the surface course at locations where directed by the Engineer. The leveling course will be used to correct pavement irregularities such as rutting, variable cross slope, or variable longitudinal slope. Where two overlays of different thickness abut at a longitudinal joint, the Contractor shall add to the thinner section to match the thicker lift and provide a smooth transition and uniform cross-fall. Cold planing ridges or other rises in the pavement surface may be required by the Engineer. The Engineer will determine the exact limits and thickness of the leveling courses, hot mix asphalt fills, and transitions.

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The Contractor shall construct temporary pavement transitions at all transverse paving joints greater than 1 inch prior to allowing traffic onto the paved surface. Temporary pavement transitions shall have a maximum slope of 20:1 or as approved by the engineer and be constructed on Kraft paper or other suitable bond breaker such that upon removal of the temporary pavement transition, a clean notch remains. The temporary transitions may be constructed of either cold mix or hot mix. Temporary transition shall be required at driveways where drop off is more than 1 inch.

The Contractor shall continuously maintain the temporary pavement until final paving. Each temporary transition shall be inspected by the Contractor and repaired as necessary to comply with these provisions at the end of each day including weekends and holidays.

**Failure to comply with these provisions will result in a liquidated damage of \$250 per day per transition and/or the cost of City crews making the repairs if necessary to correct for public safety.**

Layout

The Contractor shall layout and mark the location of the edges of the paving passes of the surface course to match the new layout of the lane lines. The layout shall be made at least 24 hours prior to paving. The layout shall be approved by the Engineer prior to paving.

If the striping is to remain unchanged, the edges of the paving passes shall conform to existing lane edges.

In all cases where practical, each lane shall be paved in a single pass. In tapered transition areas, the shoulder areas shall be paved first, then the through lane shall be paved immediately after the shoulder paving.

For paving which incorporates new quarterpoints or gradebreaks due to keycuts or other conditions, the Contractor shall provide equipment capable of adjusting to the new surface profile at the appropriate locations. The profile adjustments shall be within twelve inches of the actual gradebreak or quarterpoint.

The Contractor shall take sufficient measurements during laydown to ensure that the full design hot mix asphalt layer depth is provided at each quarterpoint, gradebreak, or transition. Failure to provide the design depth at these areas will result in rejection of the work. Correction of this rejected work will include milling out the new hot mix asphalt from the road edge to the centerline or nearest inside lane line and repaving. The minimum length of the milled and corrected area shall be fifty feet.

Tolerances

The finished hot mix asphalt surface shall be flush with, to 1/4 inch (0.20 feet or 6 mm) above, the gutter lips. The finished pavement surface shall not be lower than the gutter

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lips.

The average pavement thickness shall be equal to the specified thickness for the project.

For total pavement thicknesses of less than four inches, the minimum allowable thickness will be 1/4 inch less than that specified.

For total pavement thicknesses of four inches or more, the minimum allowable thickness will be 1/2 inch less than that specified.

Automatic Screed Controls

For all main line street or roadway paving with single lane length exceeding 300 feet, automatic screed controls shall be required. Automatic screed controls shall not be required for the paving of parking lots, intersections, cul-de-sacs, alleyways or other irregular areas.

In addition to the requirements in Section 39-1.10 and 39-1.11 of the Standard Specifications, hot mix asphalt shall be placed with spreading equipment equipped with fully automatic screed and grade sensing controls which shall control the longitudinal grade of the screed. Automatic controls shall conform to and be operated in accordance with the provisions herein.

Unless approved otherwise, ski-type devices with a minimum length of 30 feet shall be used to provide a reference for the grade sensor. Skis shall be constructed and installed in such a manner that a reference to the average elevation of the existing pavement, along the length of the ski, is maintained at the sensor point. When placing surfacing adjacent to surfacing previously placed in conformance with these provisions, a joint matching shoe of adequate size and type to properly sense the grade of the previously placed mat may be used in lieu of the 30-foot ski.

The ski shall be mounted at a location which will provide an accurate reference for the surfacing being placed. This may require the ski to be mounted ahead of and inside the outer limits of the screed. Automatic cross slope control may be accomplished by use of a ski and grade sensor on each side of the paving machine.

Automatic screed controls shall be installed in such a manner that the occasional manual adjustments necessary to maintain the attitude of the screed parallel to the underlying pavement are readily accomplished. Automatic screed controls shall be installed so that with little or no delay, use of the automatic controls can be discontinued and the screed controlled by manual methods.

If it is determined by the Engineer that the existing grade and cross slope are too irregular for the automatic controls to provide the quality of work required, the use of the automatic controls shall be discontinued and the spreading equipment adjusted by manual methods.

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Use of automatic controls shall resume when the Engineer has determined that it is again practical and so orders.

Compacting

Rolling shall be performed as indicated in the referenced Caltrans specifications.

The roller water shall contain a soap type compound to prevent sticking of the HMA material to the rollers. The soap type compound shall not damage the HMA or impede the bonding of layers.

The number of rollers required for each paving operation shall be such that all rolling for density can be completed before the temperature of the hot mix asphalt mixture drops below 240 degrees Fahrenheit.

Breakdown rolling shall commence when the hot mix asphalt is placed. Rolling shall be accomplished with the drive wheel forward and with the advance and return passes in the same line.

For leveling courses, breakdown rolling shall consist of three coverages with an 8 to 12-ton pneumatic roller followed by a finishing coverage with a steel wheel roller. The rolling may begin with a single pass of a steel wheel roller until the pneumatic has sufficient opportunity to warm up to avoid tracking and picking up material from the mat. The pneumatic roller tires shall be treated with a non-petroleum based product to prevent pickup. Failure to successfully provide for breakdown rolling with the pneumatic roller after a reasonable warm up time will be cause for termination of paving activities until the Contractor can provide equipment which will perform without pickup.

The Contractor shall have hand-compaction equipment immediately available for compacting all areas inaccessible to rollers. Hand-compaction shall be performed concurrently with breakdown rolling. If for any reason hand-compaction falls behind breakdown rolling, further placement of hot mix asphalt shall be suspended until hand-compaction is caught up. Hand-compaction includes vibraplates and hand tampers. Hand torches shall be available for rework of areas which have cooled.

After compaction, the surface texture of all hand work areas shall match the surface texture of the machine placed mat. Any coarse or segregated areas shall be corrected immediately upon discovery. Failure to immediately address these areas shall cause suspension of hot mix asphalt placement until the areas are satisfactorily addressed, unless otherwise allowed by the Engineer.

Contractor Quality Control

The HMA shall be verified by the engineer prior to placement on the jobsite. If agreed to by the Contractor and the Engineer, the production start-up may be used for verification.

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If the production start-up is used for verification the Engineer may require removal and replacement of the HMA, at his discretion, in the event of verification failure.

Contractor quality control testing is optional. However, if the contractor fails to submit quality control results to the engineer within 72 hours of HMA placement, the contractor waives all rights to dispute the Engineer's results. In the event of asphalt binder or Hamburg wheel track testing by the Engineer, the contractor has 5 days to submit their test results from the time the Engineer informs the contractor that he is performing testing or the contractor waives the right to dispute the Engineer's results.

The Engineer shall test for conformance with aggregate quality characteristics at the beginning of the project.

The Engineer shall test air void content, Hveem stability, and voids in mineral aggregate (VMA) a minimum of once per day.

The Engineer may sample the hot mix asphalt from truck beds at the plant, from the hopper of the paving machine, or from the mat behind the paver at the discretion of the Engineer. The Contractor shall facilitate the sampling process.

Engineer's Acceptance

The City shall be notified 48-hours prior to scheduling pavement placement so that Quality Assurance personnel can be scheduled.

1. Materials Acceptance

Modify 39-3.02A Testing as follows:

Add the following footnote:

- h. Contractor can perform independent quality control testing continuously during paving using nuclear or non-nuclear methods.
- i. For minor HMA placement, the Engineer will monitor the contractor's work for conformance to the Method Process. In addition, the Engineer will collect HMA samples and verify the mix.

The Engineer may withhold acceptance in the event of any failing test result until the Contractor has addressed the failing material to the Engineer's satisfaction.

2. Compaction Acceptance

Sublots to determine compaction testing shall be based on the following:

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- a. Each 750 tons, or part thereof, placed on an individual street in a paving day. If over 750 tons are placed in a single paving day on an individual street, up to 150 tons over 750 tons can be moved in to the previous 750 ton subplot.
- b. If multiple streets are paved in a day, each street will be considered its own subplot with multiple sublots on streets where greater than 750 tons are placed.

The in-place density shall be between 92.0 percent and 97.0 percent of maximum theoretical unit weight using a nuclear gauge. Gauge compaction testing shall be performed in accordance with CTM 375. Final compaction is based on the average nuclear gauge results for the subplot. The nuclear gauge will be core correlated the first day of paving.

If nuclear gauge compaction testing results are failing, the contractor can request coring to verify the results. Three cores will be sampled for each subplot and the average of the three cores for each subplot will determine the in-place density. The core locations will be determined using random sampling charts in CTM 375. The engineer will mark the core locations.

Cores may be taken up to 5 calendar days after placement and may be 4 or 6 inches in diameter. The engineer will provide results within 3 working days of receiving the cores.

Passing cores shall be paid for by the owner. Failing cores will be paid for by the contractor. If the core testing produces both passing and failing cores, the cost will be prorated between the contractor and the owner.

Contractor shall core the full depth of the new overlay and existing asphalt layers and backfill the cores holes with rapid set concrete. The cores shall be sawcut at the new overlay line prior to testing. **Failure to backfill the core holes on the same day as the coring is performed will subject the Contractor to liquidated damages in the amount of \$250 per day per location.**

For the percent of maximum theoretical density, the following table shall apply to deductions for average compaction of a subplot:

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**Reduced Payment Factors for % of Max. Theoretical Density**

| HMA (Type A)<br>Percent of Maximum<br>Theoretical Density | Reduced Payment<br>Factor | HMA (Type A)<br>Percent of Maximum<br>Theoretical Density | Reduced Payment<br>Factor |
|---|---------------------------|---|---------------------------|
| 92.0  | 0.0000                    | 97.0  | 0.0000                    |
| 91.9  | 0.0125                    | 97.1  | 0.0125                    |
| 91.8  | 0.0250                    | 97.2  | 0.0250                    |
| 91.7  | 0.0375                    | 97.3  | 0.0375                    |
| 91.6  | 0.0500                    | 97.4  | 0.0500                    |
| 91.5  | 0.0625                    | 97.5  | 0.0625                    |
| 91.4  | 0.0750                    | 97.6  | 0.0750                    |
| 91.3  | 0.0875                    | 97.7  | 0.0875                    |
| 91.2  | 0.1000                    | 97.8  | 0.1000                    |
| 91.1  | 0.1125                    | 97.9  | 0.1125                    |
| 91.0  | 0.1250                    | 98.0  | 0.1250                    |
| 90.9  | 0.1375                    | 98.1  | 0.1375                    |
| 90.8  | 0.1500                    | 98.2  | 0.1500                    |
| 90.7  | 0.1625                    | 98.3  | 0.1625                    |
| 90.6  | 0.1750                    | 98.4  | 0.1750                    |
| 90.5  | 0.1875                    | 98.5  | 0.1875                    |
| 90.4  | 0.2000                    | 98.6  | 0.2000                    |
| 90.3  | 0.2125                    | 98.7  | 0.2125                    |
| 90.2  | 0.2250                    | 98.8  | 0.2250                    |
| 90.1  | 0.2375                    | 98.9  | 0.2375                    |
| 90.0  | 0.2500                    | 99.0  | 0.2500                    |
| < 90.0  | Remove and Replace        | > 99.0  | Remove and Replace        |

**Measurement and Payment**

The contract price paid per Square Foot (SF) for “**Cold Plane 0.2’ Including HMA Type A (Revocable)**” is a revocable item. The contract price paid per square foot shall include full compensation for furnishing all the labor, materials, tools, equipment, incidentals, and for doing all the work necessary to demolish and remove all existing pavement by cold planing, removal, off haul, and disposal of existing asphalt concrete above the lip of gutter and within gutter pans, to the depths required, lowering and re-setting utilities, and place all the asphalt concrete, complete and in place, including surface preparation, tack coat, furnishing, placing and compaction, all as specified in City of Berkeley Standards, these special provisions, and as directed by the Engineer, and no additional compensation will be allowed. This item shall be paid by the actual square footage of work performed at moratorium sites. Pavement restoration in the non-moratorium sites resulting from sewer rehabilitation will be covered

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under Bid Item No. 11, Bid Item No. 12 and Bid Item No. 31.

**BID ITEM NO. 34: PRESSURE TESTING SANITARY SEWER LINE**

**General**

~~Gravity sewer lines, laterals and appurtenances shall be substantially watertight. All precautions shall be taken by the Contractor to secure watertightness throughout the component parts of the system. All jointing of pipe shall be subject to rigorous inspection by the Engineer or his representative. In addition, before the acceptance of the work and prior to the admission of any sewage into the system, the Contractor shall perform the tests herein specified and otherwise demonstrate to the satisfaction of the Engineer the watertightness of the sewer lines, including lower laterals and appurtenances. All leakage in excess of the maximum allowable amount hereinafter stipulated shall be corrected (ie remove and replaced, rehabilitated, or as approved by the engineer).~~

**Contractor shall conduct pressure testing of existing sewer mains where indicated on the Plans.** The test shall be conducted to include existing sewer mains **(MH to MH)** and house connecting sewer lower laterals.

**Execution**

Where an existing sewer main is to be pressure tested, plug ends at maintenance hole with pneumatic plugs. The design of the plugs shall be such that they will hold against the test pressure without requiring external blocking or bracing. One of the plugs shall have three air hose connections: one for inflation of the plug, one for reading the air pressure in the sealed line, and one for introducing air into the sealed line.

Prior to testing, the inside of each completed piping system shall be thoroughly flushed and cleaned of all dirt, loose scale, sand and other foreign material. Cleaning shall be by sweeping, flushing with water or blowing with compressed air, as appropriate for the size and type of pipe. Accumulated material shall be removed at each maintenance hole and no material shall be allowed to enter the existing sewer system. The Contractor shall install temporary strainers, temporarily disconnect equipment, or take other appropriate measures to protect equipment while cleaning piping. Prior to testing existing sewer mains, Contractor shall perform pre-testing CCTV of sewer mains and lower laterals conforming to the requirements of Bid Item No. 5: Pre-Construction Closed Circuit Television (CCTV) Inspection and Location of Active Sewer Laterals.

If a City cleanout cannot be located for any lateral identified during the pre-testing CCTV, Contractor shall notify the Engineer and the pipe shall be omitted from testing **until installation of City cleanout is completed.** Contractor shall notify the Engineer of any suspected storm drain cross connections to the sanitary sewer main.

All lower laterals shall be plugged at the cleanout and tested together with the sewer main.

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Low pressure air shall then be introduced into the sealed line until the internal air pressure reaches 4.0 psig greater than the average back pressure resulting from any ground water that may be over the pipe. At least two minutes shall elapse to allow the pressure to stabilize. The pressure shall be at least 4 psig at the beginning of the test.

All low-pressure air tests shall be 1.0 psig drop tests using the times specified in Table 1 of Uni-B-6-98 "Recommended Practice for Low-Pressure Air Testing of Installed Sewer Pipe." (See Appendix 12). If any pipe (MH to MH) does not pass the low-pressure air test, contractor shall isolate sections of the pipe and retest until the location of failure can be determined within five (5) feet.

### **Measurement & Payment**

Measurement for payment shall be made as Each (EA) for "**Pressure Testing Sanitary Sewer Line**" and paid for by **Bid Item 34a** ~~on the basis of work completed as noted on the monthly submission of progress payment.~~ **Payment includes As-Built submittals to the City for those repaired defects.** The Contractor shall furnish all facilities, including labor, materials, equipment, and tools necessary to conduct the **initial pressure test of each existing sanitary sewer main (MH to MH) identified in the Plans for testing tests and cleaning operations.** The cost of testing and cleaning sewers **main and laterals** shall be included in the unit bid price, and no additional allowance will be made therefor.

~~Measurement for payment shall be made as Each (EA)~~ **The contract price paid in Lump Sum (LS) for "Isolate Leak (Allowance) (Revocable)" is a revocable item** and paid for by **Bid Item 34b on a time and materials basis.** ~~on the basis of work completed as noted on the monthly submission of progress payment.~~ This **revocable** item is an allowance for furnishing all facilities, including labor, materials, equipment, and tools necessary to conduct additional tests to identify and isolate the leaks within the pipe. The cost of **maintaining testing, bypass systems and traffic control during additional testing** shall be included in **payments under this allowance** ~~the unit bid price,~~ and no additional allowance **payment** will be made therefor.

Measurement for payment shall be **The contract price paid** in Lump Sum (LS) for "**Sewer Rehabilitation (Allowance) (Revocable)" is a revocable item** and paid for by **Bid Item 34c on a time and materials basis** ~~on the basis of work completed as noted on the monthly submission of progress payment.~~ **Payment includes As-Built submittals to the City for those repaired defects.** This **revocable** item is an allowance for furnishing all facilities, including labor, materials, equipment, and tools necessary to perform spot repairs, rehabilitate and/or replace the pipes where leaks are identified, **including but not limited to saw cutting of existing surface, excavation, hand excavation including potholing to determine the location of existing sewer and adjacent main and service utilities before trenching, correction of conflict between new sewer and utilities, removal and disposal of abandoned utilities as required, surface removal and restoration of any existing improvements disturbed by construction including restoration of curb, gutter, sidewalk**

SANITARY SEWER REHABILITATION AND REPLACEMENT PROJECT SPECIFICATION  
NO. 26-11758-C

**and asphalt, restoration of existing improvements such as landscaping, lawn, brick walkways, retaining walls, driveways, fences, all concrete joint to joint, etc. (see Special Condition No. 18), flow control, diversion or bypass pumping, locating wire, connection to existing structures, dewatering, bypass pumping, pipe provision and installation, bedding, backfill, including imported backfill, aggregate base material, compaction of bedding material beneath and around the main and at the locations of active lateral connections, pipe cleaning, pipe installation, temporary resurfacing, permanent resurfacing including concrete pavement reconstruction, pressure testing of entire sewer main (MH to MH) and laterals inclusive of repairs, and all other work (excluding maintenance holes) necessary to install the pipe complete and in place. The cost of maintaining bypass systems and traffic control as needed to perform repairs shall be included in payments under this allowance and no additional allowance will be made therefor. This item shall be paid** as follows:

Where the contractor has isolated any leaks to within five (5) feet, the Contractor shall perform a spot repair. Measurement for payment shall be made as Each (EA) and paid for by Bid Item No. 34c at the unit costs of Bid Item 31.

Where a pipe section requires replacement, as an option the Contractor may select Method "B" Pipe Splitting or Method "C" Traditional Open Trench as a construction method for replacement. Once approved by the Engineer, measurement for payment shall be in Linear Foot (LF) and paid for by Bid Item No. 34c at the unit costs of Bid Items 11 and 12, respectively.

Method "A" Cured in Place Pipe (CIPP) Liner is only acceptable as approved by the Engineer. Measurement for payment shall be in Linear Foot (LF) and paid for by Bid Item No. 34c at the unit cost of Bid Item 10.

The Contractor shall be paid on the basis of work completed as noted on the monthly submission of progress payment. Payment includes As-Built submittals to the City. **The City reserves the right to withhold payment for work under this bid item until successful completion of required testing. If sewer main (MH to MH) and lower laterals do not pass the pressure test after repairs have been made, further investigation and repairs shall be made at the Contractor's expense, and no additional allowance will be made therefor.**

After sewer main cleaning, pre-construction CCTV of the sewer main shall be paid for under **Bid Item No. 5**. After sewer lower lateral cleaning, pre-construction CCTV of the lower lateral shall be paid for under **this Bid Item No. 34a**.

Installation of new two-way cleanouts shall be paid for under **Bid Item No. 14**.

~~All exposed pipe above grade shall receive two (2) layers of adhesive poly wrap. Poly wrap shall be continuous tubing formed from 10 mil thick virgin polyethylene, in~~

SANITARY SEWER REHABILITATION AND REPLACEMENT PROJECT SPECIFICATION  
NO. 26-11758-C

~~wrap shall be continuous tubing formed from 10-mil thick virgin polyethylene, in accordance with AWWAC105. Minimum polyethylene tube size shall be as follows:~~

~~PIPE SIZE POLY-WRAP FLAT TUBE WIDTH~~

~~4 to 8 inches (100 through 200 mm)  
10" through 12" (250 through 300mm)  
14" through 16" (350 through 400mm)~~

~~Adhesive tape shall be a general-purpose polyethylene adhesive tape, 4-inches wide and at least 8-mil (0.2 mm) thick. Where exposed pipe spans over open creeks, never work within the creek streamline (See Special Condition No. 23). Keep all materials outside of the creek. **This work shall be paid for under Bid Item No. 23** and shall include but is not limited to all labor, materials, and equipment necessary for the pipe cleaning, removal and disposal of debris, installation of poly-wrap as necessary for the execution and completion of the work specified in the plans and specifications.~~

**BID ITEM NO. 35: POLY-WRAP SANITARY SEWER LINE**

**All exposed pipe above grade shall receive two (2) layers of adhesive poly-wrap as indicated in the Plans. Poly-wrap shall be continuous tubing formed from 10-mil thick virgin polyethylene, in accordance with AWWAC105. Minimum polyethylene tube size shall be as follows:**

**PIPE SIZE POLY-WRAP FLAT TUBE WIDTH**

**4 to 8 inches (100 through 200 mm)  
10" through 12" (250 through 300mm)  
14" through 16" (350 through 400mm)**

**Adhesive tape shall be a general-purpose polyethylene adhesive tape, 4-inches wide and at least 8-mil (0.2 mm) thick. Where exposed pipe spans over open creeks, never work within the creek streamline (See Special Condition No. 23). Keep all materials outside of the creek. This work shall include but is not limited to all labor, materials, and equipment necessary for the pipe cleaning, removal and disposal of debris, installation of poly-wrap as necessary for the execution and completion of the work specified in the plans and specifications.**

**Measurement & Payment**

**Measurement for payment shall be as Lump Sum (LS) and shall include full compensation for furnishing all labor, materials, tools, equipment, supervision, and incidentals and for doing all the work involved as specified in the Standard Specifications and these Specifications, and as directed by the Engineer as may be required to complete the work.**

# **APPENDIX 7**

**STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION  
(CALTRANS)**

**ENCROACHMENT PERMIT  
(ADDENDUM 1)**

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**ENCROACHMENT PERMIT**

DOT TR-0120 (REV 05/2023)

Permit No.  
04-25-6-US-2981In compliance with your application of November 21, 2025Dist/Co/Rte/PM  
04/ALA/013/PM 11.61-Var

## Reference Documents:

- Utility Notice No. \_\_\_\_\_ of \_\_\_\_\_
- Agreement No. \_\_\_\_\_ of \_\_\_\_\_
- R/W Contract No. \_\_\_\_\_ of \_\_\_\_\_
- Project code (ID): \_\_\_\_\_ CFC #: \_\_\_\_\_
- Applicant's Reference/ Utility Work Order No. \_\_\_\_\_

Permit Approval Date  
December 16, 2025

| Performance Bond Amount (1) | Payment Bond Amount (2) |
|-----------------------------|-------------------------|
| \$0                         | \$0                     |

Bond Company  
\$ N/A

| Bond Number (1) | Bond Number (2) |
|-----------------|-----------------|
| \$ N/A          | \$ N/A          |

TO: City of Berkeley  
C/O: Kevin Aguilar  
121 Park Place  
Richmond, CA 94801  
Email: kaguilar@csfst2.com  
Phone: (415)884-6449

, PERMITEE

and subject to the following, PERMISSION IS HEREBY GRANTED to:

Perform rehabilitation and replacement of sanitary sewer pipe segments, within State right-of-way, on State Highway 04-ALA-13/Post Mile 11.61/various, in the City of Berkeley, in Alameda County.

A minimum of 7 days prior to the start of the work under this encroachment permit, notice must be given to State Representative George Lee, 245 Mowry Ave., Fremont, CA 94546, at george.lee@dot.ca.gov or (510) 715-6805, weekdays between 7:00 a.m. and 3:30 p.m., excluding holidays.

Notwithstanding General Provision 35, lane closures and other activities that may cause traffic impacts that require the permittee to apply for and obtain a closure ID prior to the start of work. Requests must be submitted electronically through the Lane Closure System (LCS). Notifications to Traffic Management Center (TMC) must be submitted timely including 1097, 1098 and 1022 codes.

**THIS PERMIT IS NOT A PROPERTY RIGHT AND DOES NOT TRANSFER WITH THE PROPERTY TO A NEW OWNER.**

The following attachments are also included as part of this permit (check applicable):

- YES  NO General Provisions
- YES  NO Utility Maintenance Provisions
- YES  NO Storm Water Special Provisions
- YES  NO Special Provisions
- YES  NO A Cal-OSHA Permit, if required: Permit No. \_\_\_\_\_
- YES  NO As-Built Plans Submittal Route Slip for Locally Advertised Projects
- YES  NO Storm Water Pollution Protection Plan

In addition to fee, the permittee will be billed actual costs for:

- YES  NO Review
- YES  NO Inspection
- YES Field Work  
(if any Caltrans effort expended)

**As-built Plans are Required**

- YES  NO

- YES  NO The information in the environmental documentation has been reviewed and considered prior to approval of this permit.

This permit is void unless the work is completed before January 1, 2027

This permit is to be strictly construed and no other work other than specifically mentioned is hereby authorized.

No project work shall be commenced until all other necessary permits and environmental clearances have been obtained.

CC:  
#1: NEIL HAYES  
#2: GEORGE Y LEE  
#3: MITCHELL TIRADO  
#4: ERWIN MADLANGBAYAN

APPROVED:

David Ambuehl, Acting, District Director

BY

  
George Lee (Dec 16, 2025 13:54:19 PST)

For , District Permit Engineer

Following routes are identified with closure restrictions for the Super Bowl and World Cup 2026. For World Cup 2026, there must be no closure permitted from June 13, 2026 to July 2, 2026, at 6:00 am on the following routes. For the pre-Super Bowl and Super Bowl events, no closure is permitted on the event day. The traffic lanes must be open until 6:00 am the following day on the following routes:

- SR-237 in its entirety
- US-101 from SR-85 South to I-80
- US-101 from Golden Gate Bridge to I-580
- SR-87 from SR-85 to US-101
- SR-85 in its entirety
- SR-82 from I-280 South to I-280 North
- SR-17 from Santa Cruz County line to I-280
- I-880 from I-280 to I-80
- I-80 from US-101 to I-880 (Maze)
- I-680 from US-101 to I-580
- I-580 from I-238 to I-680
- I-238 in its entirety
- I-280 from US-101 South to King Street
- Bridges: San Francisco Oakland Bay Bridge, San Mateo Bridge and Dumbarton Bridge

The following codes are to be used when reporting your intended closure status to TMC:

- Use “1097” code, at the start of a lane and shoulder or ramp closures (dropping off the first cone).
- Use “1098” code, after the lane and shoulder or ramp is open to traffic (picking up the last cone).
- Use “1022” code, if cancelling an approved closure.

If the request is rejected, you must resubmit your revised closure request and you may consult with the State Representative as needed.

**The permittee must submit cancellation closure requests using LCS, at least 48 hours, before the start time of the approved closure.**

In the event of noncompliance with the Department’s requirements and provisions including LCS requirements, the permittee’s future lane closures may not be granted and/or authorized.

In addition to the 2024 Standard Specifications and Standard Plans (available at <https://dot.ca.gov/programs/design/ccs-standard-plans-and-standard-specifications>) and the following attached provisions:

- Encroachment Permit General Provisions (TR-0045)
- Encroachment Permit Trench Detail (TR-0153)
- Steel Plate Bridging Utility Provisions (TR-0157)
- Underground Utility Provisions (TR-0163)
- Storm Water Special Provisions for Minimal or No Impact (TR-0400) available at <https://dot.ca.gov/programs/traffic-operations/ep/ep-manual/>
- Hazardous Materials and Hazardous Waste Management Special Provisions (TR-0408)
- As-Builts for Encroachment Permit Projects with Subsurface Infrastructure (TR-0449)

All work permitted herein must comply with the following additional provisions:

**Time extension requests must be made a minimum of 30 days prior to permit expiration.**

Certain details of work authorized herein are shown on the plans and specifications submitted by the permittee and attached to this encroachment permit.

A pre-job meeting with the State Representative is required at least 7 days prior to the start of any work under this encroachment permit. Failure to do so may result in permit revocation with no prejudice.

The permittee must provide the stage construction plans, traffic handling plans, work schedule, and a list of all sub-contractors to the State Representative at the time of the pre-job meeting.

Work may not start until the documents listed below have been submitted to, reviewed by, and approved by Caltrans. This permit is conditionally issued without the documents listed below, at the request of the Permittee. The Permittee acknowledges and will ensure that the following documents will be submitted to Caltrans for review and approval prior to scheduling authorized work/activities:

- **TR-0429 - Encroachment Permit Applicant: Contractor(s) Authorization Form (see attachment).**
- **Traffic Control Plan (TCP), stamped and signed by a California Licensed Professional Engineer.**

Non – compliance with this provision may result in Caltrans taking actions including but not limited to canceling this permit without further notice, requiring bonds, and/or not providing such conditional approvals for the Permittee on future projects.

Additional inspection hours will be charged at the current State hourly rate.

Signs, lights, flags or other protective devices must not obscure the visibility of, nor conflict in intent, meaning, and function of either existing signs, lights and traffic control devices, or any construction area signs.

On conventional highways, permittee's vehicles and equipment not involved in the permitted activities must be legally located off the traveled way and not interfere with free traffic and pedestrian flow.

On freeways and expressways, permittee's vehicles and equipment not involved in the permitted activities must be legally located outside the State highway right-of-way.

No vehicle or equipment must be stored overnight within the State highway right-of-way. All vehicles and equipment must be removed immediately at the completion of the day's work. Refueling of vehicle or equipment within the State highway right-of-way is strictly prohibited.

Traffic control must comply with the 2024 Caltrans Standard Plans T9 through T22 (available at <https://dot.ca.gov/programs/design/ccs-standard-plans-and-standard-specifications>), and the California Manual on Uniform Traffic Control Devices (MUTCD), Part 6, "Temporary Traffic Control" (available at <https://dot.ca.gov/programs/safety-programs/camutcd>) (Reference: "Encroachment Permit General Provisions" (TR-0045)).

All traffic control devices must be installed, maintained, and removed by a qualified traffic control contractor.

The State Representative and CHP reserve the right to require reopening the highway at any time as necessary. All cost must be borne by the permittee.

No lane must be closed or obstructed at any time unless specifically allowed elsewhere in this encroachment permit, shown in approved traffic control plans, and/or as directed by the State Representative.

Permittee must place detour signs prior to the permitted activity in accordance with Caltrans Standard Specifications.

Except for installing, maintaining and removing traffic control devices, any work encroaching within 3 feet of the edge of a travel lane for areas with a posted speed limit below 45mph, or 6 feet of the edge of a travel lane, for areas with a speed limit posted at 45mph or higher, requires closing of that travel lane. Any work encroaching within 6 feet of the edge of the shoulder, requires closing of that shoulder.

Do not reduce an open traffic lane width to less than 11 feet. If traffic cones or delineators are used for temporary edge delineation, the side of the base of the cones or delineators nearest traffic is considered the edge of traveled way.

Traffic control using flagging must comply with the California Manual on Uniform Traffic Control Devices (MUTCD), Chapter 6E, "Flagger Control" (available at <https://dot.ca.gov/programs/safety-programs/camutcd>) and Cal/OSHA Title 8 Regulations Subchapter 4. Construction Safety Orders, Section 1599, "Flaggers" (available at <https://www.dir.ca.gov/title8/1599.html>).

Temporary pedestrian facilities must comply with the Caltrans Temporary Pedestrian Access Routes Handbook (available at <https://dot.ca.gov/programs/construction/safety-traffic>) and the California MUTCD Part 6, Chapter 6D – "Pedestrian and Worker Safety" available at <https://dot.ca.gov/programs/safety-programs/camutcd> (Reference: "Encroachment Permit General Provisions" (TR-0045)).

Notwithstanding General Provision 13, temporary pedestrian access routes must comply with the 2024 Caltrans Standard Plans T30 through T34 (available at <https://dot.ca.gov/programs/design/ccs-standard-plans-and-standard-specifications>

The permittee must comply with all requirements of the California Public Resource Code Sections 5024.5 and 5097.98, California Health and Safety Code Section 7050.5 (both available at <https://leginfo.legislature.ca.gov/faces/codes.xhtml>), and Volume 2 of the Caltrans Environmental Handbook. (available at <https://dot.ca.gov/programs/environmental-analysis/standard-environmental-reference-ser>)

Should ground-disturbing activities take place as part of this project within the State highway right-of-way and there is an inadvertent archaeological or burial discovery, the permittee must cease all construction within 50 feet of the find, notify the County coroner, if necessary, and immediately contact Office of Cultural Resource Studies (OCRS), Caltrans District 4. Upon contact, an OCRS archaeologist will evaluate the find within one business day.

Trench excavation must comply with the 2024 Caltrans Standard Specifications, Section 19-3, "Structure Excavation and Backfill" (available at <https://dot.ca.gov/programs/design/ccs-standard-plans-and-standard-specifications>

Trench backfill must comply with the attached trench detail and the 2024 Caltrans Standard Specifications, Section 19.3.02E, "Slurry Cement Backfill", and 19-3.02G, "Controlled Low-Strength Material".

Asphalt Concrete (AC) to be removed must be saw cut to the full depth along both sides of the trench. Portland Cement Concrete (PCC) to be removed must be saw cut to a minimum depth of 4 inches along both sides of the trench.

Where the edge of trench is within 2 feet of curb, gutter, or pavement edge, Asphalt Concrete (AC) pavement between the trench and curb, gutter, or pavement edge must be removed and replaced.

Open trenching is authorized one lane at a time with approved traffic control.

No excavation must be left open overnight. Temporary backfilling of excavations in finished surfaces must be capped with a minimum 3 inches Asphalt Concrete (AC).

Permittee must reuse the soil within the work limits in the immediate area from which it was excavated. If any excess soil is generated, it becomes the property of the permittee. Permittee must transport all excess soil outside the State highway right-of-way and dispose of it in accordance with all applicable environmental laws and regulations.

Changes to the provisions herein require an Encroachment Permit Rider, except for minor changes authorized by the State Representative.

The State Representative or CHP may stop work not being performed in compliance with this permit.

Neither materials nor waste must be stockpiled within the State highway right-of-way.

All mud, dirt, and gravel tracked onto the roadway must be immediately removed.

Upon completion of work authorized by this encroachment permit, the permittee must provide the State Representative with three sets of As-Built plans in accordance with General Provision 22.

Upon completion of work authorized by this encroachment permit, the permittee must provide the State Representative with "Notice of Completion" (TR-0128) available at <https://dot.ca.gov/programs/traffic-operations/ep/applications>.

**ENCROACHMENT PERMIT APPLICANT: CONTRACTOR(S) AUTHORIZATION FORM**

DOT TR-0429 (NEW 12/2022)

The Permittee warrants and represents the Permittee has hired the following prime contractor(s) to perform the approved encroachment activities under Encroachment Permit # \_\_\_\_\_ on the Permittee's behalf as agents in accordance with Encroachment Permit General Provision #4 or Adopt-A-Highway Special Provision # 3, whichever is part of the Encroachment Permit. The Permittee warrants and represents the Permittee has provided a copy of the Encroachment Permit to the prime contractor(s) listed below, and further warrants and represents that the activities related to the Encroachment Permit, whether performed by the Permittee or by the prime contractor(s) below or by any person or entity acting for or on behalf of the Permittee, will be performed in compliance with all terms, conditions, specifications, standards, provisions, and other requirements of the subject Encroachment Permit. The person signing below warrants and represents such person has authority on behalf of the Permittee to make the warranties and representations contained herein, and to agree to and so bind the Permittee to this page.

**List of authorized prime contractors for the encroachment permit:**

| Contractor Name | Scope of work (Traffic Control/civil work etc.) | Contact Person | Contact Person's Information (Phone # and E-mail) |
|-----------------|---|----------------|---|
|                 |   |                |   |
|                 |   |                |   |
|                 |   |                |   |
|                 |   |                |   |

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

\_\_\_\_\_  
Name of Permittee

\_\_\_\_\_  
Name and Title of Person  
Signing for Permittee (Print)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**ENCROACHMENT PERMIT APPLICANT: CONTRACTOR(S) AUTHORIZATION FORM**

DOT TR-0429 (NEW 12/2022)

By signing below, each prime contractor acknowledges that such prime contractor has received a copy of Encroachment Permit # \_\_\_\_\_ and agrees such prime contractor, and such prime contractor's employees, managers, officers, directors, agents, subcontractors, and suppliers, will comply with, and will perform all activities in accordance with, all terms, conditions, specifications, standards, provisions, and other requirements of the Encroachment Permit, including but not limited to notifying the permit inspector as required in the Encroachment Permit and reporting the lane closure notifications per the Encroachment Permit General Provisions (TR-0045). Each person signing on behalf of each prime contractor warrants and represents such person has the authority to make the acknowledgements, warranties, and representations contained herein on behalf of the named prime contractor, and has the authority to agree to and so bind the named prime contractor to this page.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

|  |   |                           |                      |
|--|---|---------------------------|----------------------|
| _____<br><b>Name of Prime Contractor</b> | _____<br><b>Name and Title of Person<br/>Signing for Contractor (Print)</b> | _____<br><b>Signature</b> | _____<br><b>Date</b> |
| _____<br><b>Name of Prime Contractor</b> | _____<br><b>Name and Title of Person<br/>Signing for Contractor (Print)</b> | _____<br><b>Signature</b> | _____<br><b>Date</b> |
| _____<br><b>Name of Prime Contractor</b> | _____<br><b>Name and Title of Person<br/>Signing for Contractor (Print)</b> | _____<br><b>Signature</b> | _____<br><b>Date</b> |
| _____<br><b>Name of Prime Contractor</b> | _____<br><b>Name and Title of Person<br/>Signing for Contractor (Print)</b> | _____<br><b>Signature</b> | _____<br><b>Date</b> |

## ENCROACHMENT PERMIT GENERAL PROVISIONS

TR-0045 (REV. 12/2022)

1. **AUTHORITY:** The California Department of Transportation (“Department”) has authority to issue encroachment permits under Division 1, Chapter 3, Article 1, Sections 660 through 734 of the Streets and Highways Code.
2. **REVOCACTION:** Encroachment permits are revocable on five (5) business days’ notice unless otherwise stated on the permit or otherwise provided by law, and except as provided by law for public corporations, franchise holders, and utilities. Notwithstanding the foregoing, in an emergency situation as determined by the Department, an encroachment permit may be revoked immediately. These General Provisions and any applicable Special Provisions are subject to modification or abrogation by the Department at any time. Permittees’ joint use agreements, franchise rights, reserved rights or any other agreements for operating purposes in State of California (“State”) highway right-of-way may be exceptions to this revocation.
3. **DENIAL FOR NONPAYMENT OF FEES:** Failure to pay encroachment permit fees when due may result in rejection of future applications, denial of encroachment permits, and revocation of the encroachment permit if already issued.
4. **PERMITTEE AUTHORIZATION FOR OTHERS TO PERFORM WORK:** This encroachment permit allows only the Permittee and/or Permittee’s authorized contractor or agent to work within or encroach upon the State highway right-of-way, and the Permittee may not assign or transfer this encroachment permit. Any attempt to assign or transfer this encroachment permit shall be null and void. Permittee shall provide to the Department a list of Permittee’s authorized contractors/agents, in the form and at the time specified by the Department but if no time is specified then no later than the pre-construction meeting. Permittee shall keep the list current and shall provide updates to the Department immediately upon any change to the list of authorized contractors/agents, including but not limited the addition, removal, or substitution of an authorized contractor/agent, or a new address or contact information for an existing authorized contractor/agent. Permittee is responsible for the acts and/or omissions of any person or entity acting on behalf of the Permittee, even if such person or entity is not included on Permittee’s list of authorized contractors and/or agents.
5. **ACCEPTANCE OF PROVISIONS:** Permittee, and the Permittee’s authorized contractors and/or agents, understand and agree to accept and comply with these General Provisions, the Special Provisions, any and all terms and/or conditions contained in or incorporated into the encroachment permit, and all attachments to the encroachment permit (collectively “the Permit Conditions”), for any encroachment, work, and/or activity to be performed under this encroachment permit and/or under color of authority of this encroachment permit. Permittee understands and agrees the Permit Conditions are applicable to and enforceable against Permittee as long as the encroachment remains in, under, or over any part of the State highway right-of-way. The Permittee’s authorized contractors and/or agents, are also bound by the Permit Conditions. Non-compliance with the Permit Conditions by the Permittee’s authorized contractor and/or agent will be deemed non-compliance by the Permittee.
6. **BEGINNING OF WORK:** When traffic is not impacted (see General Provision Number 35), the Permittee must notify the Department’s representative two (2) business days before starting permitted work. Permittee must notify the Department’s representative if the work is to be interrupted for a period of five (5) business days or more, unless otherwise agreed upon. All work must be performed on weekdays during regular work hours, excluding holidays, unless otherwise specified in this encroachment permit.
7. **STANDARDS OF CONSTRUCTION:** All work performed within State highway right-of-way must conform to all applicable Departmental construction standards including but not limited to: Standard Specifications, Standard Plans, Project Development Procedures Manual, Highway Design Manual and Special Provisions.  
Other than as expressly provided by these General Provisions, the Special Provisions, the Standard Specifications, Standard Plans, and other applicable Departmental standards, nothing in these General Provisions is intended to give any third party any legal or equitable right, remedy, or claim with respect to the encroachment permit and/or to these General Provisions or any provision herein. These General Provisions are for the sole and exclusive benefit of the Permittee and the Department.  
Where reference is made in such standards to “Contractor” and “Engineer,” these are amended to be read as “Permittee” and “Department’s representative,” respectively, for purposes of this encroachment permit.
8. **PLAN CHANGES:** Deviations from plans, specifications, and/or the Permit Conditions as defined in General Provision Number 5 are not allowed without prior approval from the Department’s representative and the Federal Highway Administration (“FHWA”) representative if applicable.
9. **RIGHT OF ENTRY, INSPECTION AND APPROVAL:** All work is subject to monitoring and inspection. The United States, the State, the Department, and the Directors, officers, employees, agents, and/or contractors of the State and/or of the Department, and other state, and federal agencies, and the FHWA, through their agents or representatives, must have full access to highway

**ENCROACHMENT PERMIT GENERAL PROVISIONS**

facilities/encroachment area, at any and all times for the purpose of inspection, maintenance, activities needed for construction/reconstruction, and operation of the State highway right-of-way.

Upon completion of work, Permittee must request a final inspection for acceptance and approval by the Department. The local public agency Permittee must not give final construction approval to its contractor until final acceptance and approval by the Department is obtained.

10. **PERMIT AT WORKSITE:** Permittee and Permittee's authorized contractors/agents must keep the permit package and current list of authorized contractors/agents, or copies thereof, at the work site at all times and must show such documents upon request to any Department representative or law enforcement officer. If the permit package or current list of authorized contractors/agents, or copies thereof, are not kept and made available at the work site at all times, then all work must be suspended.
11. **CONFLICTING ENCROACHMENTS:** Permittee must yield start of work to ongoing, prior authorized work adjacent to or within the limits of the Permittee's project site. When existing encroachments conflict with Permittee's work, the Permittee must bear all cost for rearrangements (e.g., relocation, alteration, removal, etc.).
12. **PERMITS, APPROVALS, AND CONCURRENCES FROM OTHER AGENCIES AND/OR ENTITIES:** This encroachment permit is invalidated if the Permittee has not obtained all permits, approvals, and concurrences necessary and required by law, including but not limited to those from the California Public Utilities Commission ("CPUC"), California Occupational Safety and Health Administration ("Cal-OSHA"), local and state and federal environmental agencies, the California Coastal Commission, and any other public agency and/or entity having jurisdiction. Permittee is responsible for providing notice of the encroachment to, and obtaining concurrence from, any person or entity (whether public or private) affected by the scope of work described in the encroachment permit, regardless of whether such notice or concurrence is required by law; the Department is not responsible to provide such notice or obtain such concurrence. Permittee warrants all such permits, approvals, and concurrences have been obtained before beginning work under this encroachment permit. The Department may, at the Department's discretion, require the Permittee to demonstrate that Permittee has obtained all such permits, approvals, and concurrences, and Permittee shall demonstrate this at the time and in the manner specified by the Department.
13. **PEDESTRIAN AND BICYCLIST SAFETY:** A safe continuous passageway must be maintained through the work area at existing pedestrian or bicycle facilities. At no time must pedestrians be diverted onto a portion of the street used for vehicular traffic. At locations where safe alternate passageways cannot be provided, appropriate signs and barricades must be installed at the limits of construction and in advance of the limits of construction at the nearest crosswalk or intersection to detour

pedestrians to facilities across the street. Attention is directed to Section 7-1.04 "Public Safety," and to Section 12-4.04 "Temporary Pedestrian Access Routes," and to Section 16-2.02 "Temporary Pedestrian Facility," of the Department's Standard Specifications, and to California Vehicle Code section 21760, subdivision (c).

14. **PUBLIC TRAFFIC CONTROL:** The Permittee must provide traffic control protection, warning signs, lights, safety devices, etc., and take all other measures necessary for the traveling public's safety as required by law and/or the Department. While providing traffic control, the needs of all road users, including but not limited to motorists, bicyclists and pedestrians, including persons with disabilities in accordance with the Americans with Disabilities Act, must be an essential part of the work activity.  
Lane, Bike Lane, Sidewalk, Crosswalk, and/or shoulder closures must comply with the Department's Standard Specifications and Standard Plans for Temporary Traffic Control Systems & Temporary Pedestrian Access Routes, and with the applicable Special Provisions. Where issues are not addressed in the Standard Specifications, Standard Plans, and/or Special Provisions, the California Manual on Uniform Traffic Control Devices (Part 6, Temporary Traffic Control) must be followed.
15. **MINIMUM INTERFERENCE WITH TRAFFIC:** Permittee must plan and conduct work so as to create the least possible inconvenience to the traveling public (motorized vehicles, unmotorized vehicles such as bicycles, pedestrians, person(s) with disabilities, etc.), such that traffic is not unreasonably delayed.
16. **STORAGE OF EQUIPMENT AND MATERIALS:** The storage of equipment or materials is not allowed within State highway right-of-way, unless specified within the Special Provisions of this encroachment permit. If encroachment permit Special Provisions allow for the storage of equipment or materials within the State highway right-of-way, the equipment and material storage must also comply with Section 7-1.04, Public Safety, of the Department's Standard Specifications.
17. **CARE OF DRAINAGE:** Permittee must provide alternate drainage for any work interfering with an existing drainage facility in compliance with the Department's Standard Specifications, Standard Plans, and/or as directed by the Department's representative.
18. **RESTORATION AND REPAIRS IN STATE HIGHWAY RIGHT-OF-WAY:** Permittee is responsible for restoration and repair of State highway right-of-way resulting from permitted work (Streets and Highways Code, section 670 et seq.).
19. **STATE HIGHWAY RIGHT-OF-WAY CLEAN UP:** Upon completion of work, Permittee must remove and dispose of all scraps, refuse, brush, timber, materials, etc. off the State highway right-of-way. The aesthetics of the highway must be as it was before work started or better.
20. **COST OF WORK:** Unless stated otherwise in the encroachment permit or a separate written agreement with the Department, the Permittee must bear all costs

**ENCROACHMENT PERMIT GENERAL PROVISIONS**

- incurred for work within the State highway right-of-way and waives all claims for indemnification or contribution from the United States, the State, the Department, and from the Directors, officers, and employees of the State and/or the Department. Removal of Permittee's personal property and improvements shall be at no cost to the United States, the State, and the Department.
21. **ACTUAL COST BILLING:** When specified in the permit, the Department will bill the Permittee actual costs at the currently set Standard Hourly Rate for encroachment permits.
22. **AS-BUILT PLANS:** When required, Permittee must submit one (1) set of folded as-built plans within thirty (30) calendar days after completion and acceptance of work in compliance with requirements listed as follows:
- a) Upon completion of the work provided herein, the Permittee must submit a paper set of As-Built plans to the Department's representative.
  - b) All changes in the work will be shown on the plans, as issued with the permit, including changes approved by Encroachment Permit Rider.
  - c) The plans are to be prominently stamped or otherwise noted "AS-BUILT" by the Permittee's representative who was responsible for overseeing the work. Any original plan that was approved with a Department stamp, or by signature of the Department's representative, must be used for producing the As-Built plans.
  - d) If construction plans include signing or striping, the dates of signing or striping removal, relocation, or installation must be shown on the As-Built plans when required as a condition of the encroachment permit. When the construction plans show signing and striping for staged construction on separate sheets, the sheet for each stage must show the removal, relocation, and installation dates of the appropriate staged striping and signing.
  - e) As-Built plans must contain the Encroachment Permit Number, County, Route, and Post Mile on each sheet.
  - f) The As-Built Plans must not include a disclaimer statement of any kind that differs from the obligations and protections provided by sections 6735 through 6735.6 of the California Business and Professions Code. Such statements constitute non-compliance with Encroachment Permit requirements and may result in the Department retaining Performance Bonds or deposits until proper plans are submitted. Failure to comply may also result in denial of future encroachment permits or a provision requiring a public agency to supply additional bonding.
23. **PERMITS FOR RECORD PURPOSES ONLY:** When work in the State highway right-of-way is within an area under a Joint Use Agreement (JUA) or a Consent to Common Use Agreement (CCUA), a fee exempt encroachment permit is issued to the Permittee for the purpose of providing a notice and record of work. The Permittee's prior rights must be preserved without the intention of creating new or different rights or obligations.
- "Notice and Record Purposes Only" must be stamped across the face of the encroachment permit.
24. **BONDING:** The Permittee must file bond(s), in advance, in the amount(s) set by the Department and using forms acceptable to the Department. The bonds must name the Department as obligee. Failure to maintain bond(s) in full force and effect will result in the Department stopping all work under this encroachment permit and possibly revoking other encroachment permit(s). Bonds are not required of public corporations or privately-owned utilities unless Permittee failed to comply with the provisions and/or conditions of a prior encroachment permit. The surety company is responsible for any latent defects as provided in California Code of Civil Procedure section 337.15. A local public agency Permittee also must comply with the following requirements:
- a) In recognition that project construction work done on State property will not be directly funded and paid by State, for the purpose of protecting stop notice claimants and the interests of State relative to successful project completion, the local public agency Permittee agrees to require the construction contractor to furnish both a payment and performance bond in the local public agency's name with both bonds complying with the requirements set forth in Section 3-1.05 Contract Bonds of the Department's Standard Specifications before performing any project construction work.
  - b) The local public agency Permittee must defend, indemnify, and hold harmless the United States, the State and the Department, and the Directors, officers, and employees of the State and/or Department, from all project construction related claims by contractors, subcontractors, and suppliers, and from all stop notice and/or mechanic's lien claimants. The local public agency also agrees to remedy, in a timely manner and to the Department's satisfaction, any latent defects occurring as a result of the project construction work.
25. **FUTURE MOVING OF INSTALLATIONS:** Permittee understands and agrees to relocate a permitted installation upon notice by the Department. Unless under prior property right or agreement, the Permittee must comply with said notice at the Permittee's sole expense.
26. **ENVIRONMENTAL:**
- a) **ARCHAEOLOGICAL/HISTORICAL:** If any archaeological or historical resources are identified or encountered in the work vicinity, the Permittee must immediately stop work, notify the Department's representative, retain a qualified archaeologist who must evaluate the site at Permittee's sole expense, and make recommendations to the Department's representative regarding the continuance of work.
  - b) **HAZARDOUS MATERIALS:** If any hazardous waste or materials (such as underground storage tanks, asbestos pipes, contaminated soil, etc.) are identified or encountered in the work vicinity, the Permittee must immediately stop work, notify the Department's representative, retain a qualified hazardous

**ENCROACHMENT PERMIT GENERAL PROVISIONS**

waste/material specialist who must evaluate the site at the Permittee's sole expense, and make recommendations to the Department's representative regarding the continuance of work.

Attention is directed to potential aerially deposited lead (ADL) presence in unpaved areas along highways. It is the Permittee's responsibility to take all appropriate measures to protect workers in conformance with California Code of Regulations Title 8, Section 1532.1, "Lead," and with Cal-OSHA Construction Safety Orders, and to ensure roadway soil management is in compliance with Department of Toxic Substances Control (DTSC) requirements.

- c) **BIOLOGICAL:** If any regional, state, or federally listed biological resource is identified or encountered in the work vicinity, the Permittee must immediately stop work, notify the Department's representative, retain a qualified biologist who must evaluate the site at Permittee's sole expense, and make recommendations to the Department's representative regarding the continuance of work.

27. **PREVAILING WAGES:** Work performed by or under an encroachment permit may require Permittee's contractors and subcontractors to pay appropriate prevailing wages as set by the California Department of Industrial Relations. Inquiries or requests for interpretations relative to enforcement of prevailing wage requirements must be directed to the California Department of Industrial Relations.

28. **LIABILITY, DEFENSE, AND INDEMNITY:** The Permittee agrees to indemnify and save harmless the United States, the State, the Department, and the Directors, officers, employees, agents and/or contractors of the State and/or of the Department, including but not limited to the Director of Transportation and the Deputy Directors, from any and all claims, demands, damages, costs, liability, suits, or actions of every name, kind, and description, including but not limited to those brought for or on account of property damage, invasion of privacy, violation or deprivation of a right under a state or federal law, environmental damage or penalty, or injury to or death of any person including but not limited to members of the public, the Permittee, persons employed by the Permittee, and/or persons acting on behalf of the Permittee, arising out of or in connection with: (a) the issuance and/or use of this encroachment permit; and/or (b) the encroachment, work, and/or activity conducted pursuant to this encroachment permit, or under color of authority of this encroachment permit but not in full compliance with the Permit Conditions as defined in General Provision Number 5 ("Unauthorized Work or Activity"); and/or (c) the installation, placement, design, existence, operation, and/or maintenance of the encroachment, work, and/or activity; and/or (d) the failure by the Permittee, or by anyone acting for or on behalf of the Permittee, to perform the Permittee's obligations under any part of the Permit Conditions as defined in General Provision Number 5, in respect to maintenance or any other obligation; and/or (e) any change to the Department's property or adjacent

property, including but not limited to the features or conditions of either of them, made by the Permittee or anyone acting on behalf of the Permittee; and/or (f) a defect or obstruction related to or caused by the encroachment, work, and/or activity whether conducted in compliance with the Permit Conditions as defined in General Provision Number 5 or constituting Unauthorized Work or Activity, or from any cause whatsoever. The duty of the Permittee to indemnify and save harmless includes the duties to defend as set forth in Section 2778 of the Civil Code.

It is the intent of the Department and the Permittee that except as prohibited by law, the Permittee will defend, indemnify, and hold harmless as set forth in this General Provision Number 28 regardless of the existence or degree of fault or negligence, whether active or passive, primary or secondary, on the part of: the United States, the State; the Department; the Directors, officers, employees, agents and/or contractors of the State and/or of the Department, including but not limited to the Director of Transportation and the Deputy Directors; the Permittee; persons employed by the Permittee; and/or persons acting on behalf of the Permittee.

The Permittee waives any and all rights to any type of expressed or implied indemnity from or against the United States, the State, the Department, and the Directors, officers, employees, agents, and/or contractors of the State and/or of the Department, including but not limited to the Director of Transportation and the Deputy Directors.

The Permittee understands and agrees to comply with the obligations of Titles II and III of the Americans with Disabilities Act in the conduct of the encroachment, work, and/or activity whether conducted pursuant to this encroachment permit or constituting Unauthorized Work or Activity, and further agrees to defend, indemnify, and save harmless the United States, the State, the Department, and the Directors, officers, employees, agents, and/or contractors of the State and/or of the Department, including but not limited to the Director of Transportation and the Deputy Directors, from any and all claims, demands, damages, costs, penalties, liability, suits, or actions of every name, kind, and description arising out of or by virtue of the Americans with Disabilities Act.

The Permittee understands and agrees the Directors, officers, employees, agents, and/or contractors of the State and/or of the Department, including but not limited to the Director of Transportation and the Deputy Directors, are not personally responsible for any liability arising from or by virtue of this encroachment permit.

For the purpose of this General Provision Number 28 and all paragraphs herein, "contractors of the State and/or of the Department" includes contractors, and their subcontractors, under contract to the State and/or the Department.

This General Provision Number 28 and all paragraphs herein take effect immediately upon issuance of this encroachment permit, and apply before, during, and after the encroachment, work, and/or activity

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contemplated under this encroachment permit, whether such work is in compliance with the Permit Conditions as defined in General Provision Number 5 or constitutes Unauthorized Work or Activity, except as otherwise provided by California law. The Permittee's obligations to defend, indemnify, and save harmless under this General Provision Number 28 take effect immediately upon issuance of this encroachment permit and have no expiration date, including but not limited to situations in which this encroachment permit expires or is revoked, the work or activity performed under this encroachment permit is accepted or not accepted by the Department, the encroachment, work, and/or activity is conducted in compliance with the Permit Conditions as defined in General Provision Number 5 or constitutes Unauthorized Work or Activity, and/or no work or activity is undertaken by the Permittee or by others on the Permittee's behalf.

If the United States or an agency, department, or board of the United States is the Permittee, the first two paragraphs of this General Provision Number 28 (beginning "The Permittee agrees to indemnify..." and "It is the intent of the parties...") are replaced by the following paragraph:

Claims for personal injury, death, or property damage allegedly caused by the negligent or wrongful act or omission of any employee of the United States acting within the scope of their official duties are subject to the Federal Tort Claims Act, as amended, 28 U.S.C. § 1346 and § 2671 et seq. (Chapter 171).

29. **NO PRECEDENT ESTABLISHED:** This encroachment permit is issued with the understanding that it does not establish a precedent.

30. **FEDERAL CIVIL RIGHTS REQUIREMENTS FOR PUBLIC ACCOMMODATION:**

a) As part of the consideration for being issued this encroachment permit, the Permittee, on behalf of Permittee and on behalf of Permittee's personal representatives, successors in interest, and assigns, does hereby covenant and agree that:

i) No person on the grounds of race, color, or national origin may be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities.

ii) That in connection with the construction of any improvements on said lands and the furnishings of services thereon, no discrimination must be practiced in the selection and retention of first-tier subcontractors in the selection of second-tier subcontractors.

iii) That such discrimination must not be practiced against the public in their access to and use of the facilities and services provided for public accommodations (such as eating, sleeping, rest, recreation), and operation on, over, or under the space of the State highway right-of-way.

iv) That the Permittee must use the premises in compliance with all other requirements imposed pursuant to Title 15, Code of Federal

Regulations, Commerce and Foreign Trade, Subtitle A. Office of the Secretary of Commerce, Part 8 (15 C.F.R. Part 8) and as said Regulations may be amended.

b) That in the event of breach of any of the above nondiscrimination covenants, the State and the Department have the right to terminate this encroachment permit and to re-enter and repossess said land and the facilities thereon and hold the same as if said permit had never been made or issued.

31. **MAINTENANCE:** The Permittee is responsible at Permittee's sole expense for the encroachment, and the inspection, maintenance, repair, and condition thereof, and is responsible to ensure the encroachment does not negatively impact State highway safety, maintenance, operations, construction, State facilities, activities related to construction/reconstruction, or other encroachments. The Permittee's obligations in the preceding sentence take effect immediately upon issuance of this encroachment permit and continue until the encroachment is entirely and permanently removed. Additional encroachment permits or approval documents may be required authorizing work related to inspection, repair, and/or maintenance activities. Contact the Department for information.

32. **SPECIAL EVENTS:** In accordance with subdivision (a) of Streets and Highways Code section 682.5 and 682.7, the Department is not responsible for the conduct or operation of the permitted activity, and the applicant agrees to defend, indemnify, and hold harmless the United States, the State, the Department, and the Directors, officers, employees, agents, and contractors of the State and/or of the Department, including but not limited to the Director of Transportation and the Deputy Directors, from any and all claims, demands, damages, costs, liability, suits, or actions of every name, kind and description arising out of any activity for which this encroachment permit is issued.

The Permittee is required, as a condition of this encroachment permit, for any event that awards prize compensation to competitors in gendered categories, for any participant level that receives prize compensation, to ensure the prize compensation for each gendered category is identical at each participant level. (Streets and Highways Code, section 682.7.)

The Permittee understands and agrees to comply with the obligations of Titles II and III of the Americans with Disabilities Act in the conduct of the event, and further agrees to defend, indemnify, and save harmless the United State, the State and the Department, and the Directors, officers, and employees of the State and/or Department, including but not limited to the Director of the Department and the Deputy Directors, from any and all claims, demands, damages, costs, liability, suits, or actions of every name, kind and description arising out of or by virtue of the Americans with Disabilities Act.

33. **PRIVATE USE OF STATE HIGHWAY RIGHT-OF-WAY:** State highway right-of-way must not be used for private purposes without compensation to the State. The gifting

**ENCROACHMENT PERMIT GENERAL PROVISIONS**

of public property uses and therefore public funds is prohibited under the California Constitution, Article XVI, Section 6.

34. **FIELD WORK REIMBURSEMENT:** Permittee must reimburse the Department for field work performed by or on behalf of the Department to correct or remedy issues created by the Permittee or by others acting on behalf of the Permittee, including but not limited to hazards or damaged facilities, or to clear refuse, debris, etc. not attended to by the Permittee or by others acting on behalf of the Permittee.
35. **LANE CLOSURE REQUEST SUBMITTALS AND NOTIFICATION OF CLOSURES TO THE DEPARTMENT:** Lane closure request submittals and notifications must be in accordance with Section 12-4.02, and Section 12.4-04, of the Department's Standard Specifications or as directed by the Department's representative. The Permittee must notify the Department's representative and the Traffic Management Center ("TMC") before initiating a lane closure or conducting an activity that may cause a traffic impact. In emergency situations when the corrective work or the emergency itself may affect traffic, the Department's representative and the TMC must be notified as soon as possible.
36. **SUSPENSION OF TRAFFIC CONTROL OPERATION:** The Permittee, upon notification by the Department's representative, must immediately suspend all traffic lane, bike lane, sidewalk, crosswalk, and/or shoulder closure operations and any operation that impedes the flow of traffic. All costs associated with this suspension must be borne by the Permittee.
37. **UNDERGROUND SERVICE ALERT (USA) NOTIFICATION:** Any excavation requires compliance with the provisions of Government Code section 4216 et seq., including but not limited to notice to a regional notification center, such as Underground Service Alert (USA). The Permittee must provide notification to the Department representative at least five (5) business days before, and the regional notification center at least forty-eight (48) hours before, performing any excavation work within the State highway right-of-way.
38. **COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA):** All work within the State highway right-of-way to construct and/or maintain any public facility must be designed, maintained, and constructed strictly in accordance with all applicable Federal Access laws and regulations (including but not limited to Section 504 of the Rehabilitation Act of 1973, codified at 29 U.S.C. § 794), California Access laws and regulations relating to ADA, along with its implementing regulations, Title 28 of the Code of Federal Regulations Parts 35 and 36 (28 C.F.R., Ch. I, Part 35, § 35.101 et seq., and Part 36, § 36.101 et seq.), Title 36 of the Code of Federal Regulations Part 1191 (36 C.F.R., Ch. XI, Part 1191, § 1119.1 et seq.), Title 49 of the Code of Federal Regulations Part 37 (49 C.F.R., Ch. A, Part 37, § 37.1 et seq.), the United States Department of Justice Title II and Title III for the ADA, and California Government Code

section 4450 et seq., which require public facilities be made accessible to persons with disabilities.

Notwithstanding the requirements of the previous paragraph, all construction, design, and maintenance of public facilities must also comply with the Department's Design Information Bulletin 82, "Pedestrian Accessibility Guidelines for Highway Projects" and Standard Plans & Specifications on "Temporary Pedestrian Access Routes."

39. **STORMWATER:** The Permittee is responsible for full compliance with the following:
- For all projects, the Department's Storm Water Program and the Department's National Pollutant Discharge Elimination System (NPDES) Permit requirements under Order No. 2012-0011-DWQ, NPDES No CAS000003; and
  - In addition, for projects disturbing one acre or more of soil, with the California Construction General Permit Order No. 2009-0009-DWQ, NPDES No CAS000002; and
  - In addition, for projects disturbing one acre or more of soil in the Lahontan Region with Order No. R6T-2016-0010, NPDES No CAG616002.
  - For all projects, it is the Permittee's responsibility to install, inspect, repair, and maintain all facilities and devices used for water pollution control practices (Best Management Practices/BMPs) before performing daily work activities.

## **PEDESTRIAN SAFETY (MCP)**

In addition to the attached Encroachment Permit General Provisions (TR-0045), the following special provisions are also applicable:

1. When the work area encroaches upon a sidewalk, walkway, or crosswalk area, special consideration must be given to pedestrian safety. Protective barricades, fencing, handrails and bridges, together with warning and guidance devices and signs must be utilized so that the passageway for pedestrians, especially blind and other physically handicapped, is safe and well defined and shown on the approved permit plan.
2. Pedestrian walkways and canopies within State Right of Way shall comply with the requirements of the applicable local agency or of the latest edition of the Uniform Building Code whichever contains the higher standards.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**ENCROACHMENT PERMIT STEEL PLATE BRIDGING UTILITY PROVISIONS**

TR -0157 (Rev. 04/2018)

To accommodate excavation work, steel plate bridging may be necessary. All conditions for use of steel plate bridging should be set forth in the special provisions.

Consideration of steel plate bridging should take into account the following factors:

1. Traffic speed.
2. Traffic Volume and Composition.
3. Duration and dimensions (width & daily estimated lengths) of the proposed excavation.
4. Weather conditions.

When backfilling operations of an excavation in the traveled way, whether transverse or longitudinal, cannot be properly completed within a work day, steel plate bridging with a non-skid surface and shoring (see Trenching & Shoring) may be required to preserve unobstructed traffic flow. In such cases, the following conditions shall apply:

1. Steel plate bridging on freeways is not allowed.
2. Steel plates used for bridging must extend a minimum of 12" beyond the edges of the trench.
3. Steel plate bridging shall be installed to operate with minimum noise.
4. The trench shall be adequately shored, (as mentioned in Section 603.6B-2 of the Encroachment Permits Manual) to support the bridging and traffic loads.
5. Temporary paving with cold asphalt concrete shall be used to feather the edges of the plates, if plate installation by Method (2) described below, is used.
6. Bridging shall be secured against displacement by using adjustable cleats, shims, or other devices.

As required by the district, steel plate bridging and shoring shall be installed using either Method (1) or (2):

**Method 1** For speeds of 45 MPH or greater:

The pavement shall be cold planed to a depth equal to the thickness of the plate and to a width and length equal to the dimensions of the plate.

Approach plate(s) and ending plate (if longitudinal placement) shall be attached to the roadway by a minimum of 2 dowels pre-drilled into the corners of the plate and drilled 2" into the pavement. Subsequent plates are to be butted and tack welded to each other.

**Method 2** For Speeds less than 45 mph:

Approach plate(s) and ending plate (if longitudinal placement) shall be attached to the roadway by a minimum of 2 dowels pre-drilled into the corners of the plate and drilled 2" into the pavement. Subsequent plates are to be butted and tack welded to each other. Fine graded asphalt concrete shall be compacted to form ramps, maximum slope 8.5 % with a minimum 12" taper to cover all edges of the steel plates. When steel plates are removed, the dowel holes in the pavement shall be backfilled with either graded fines of asphalt concrete mix, concrete slurry, epoxy or an equivalent that is satisfactory to the Caltrans' representative.

The permittee is responsible for maintenance of the steel plates, shoring, asphalt concrete ramps, and ensuring that they meet minimum specifications. Unless specifically noted or granted in the special provisions, or approved by the State representative, steel plate bridging shall not exceed 4 consecutive working days in any given week. Backfilling of excavations shall be covered with a minimum 3" temporary layer of cold asphalt concrete.

The following table shows the advisory minimal thickness of steel plate bridging required for a given trench width (A-36 grade steel, designed for HS20-44 truck loading per Caltrans Bridge Design Specifications Manual).

| Trench Width | Minimum Plate Thickness |
|--------------|-------------------------|
| 10"          | 1/2"                    |
| 1'-11"       | 3/4"                    |
| 2'-7"        | 7/8"                    |
| 3'-5"        | 1"                      |
| 5'-3"        | 1 3/4"                  |

NOTE: For spans greater than 5'-3", a structural design shall be prepared by a California registered civil engineer.

All steel plates within the right of way whether used in or out of the traveled way shall be without deformation. Inspectors can determine the trueness of steel plates by using a straight edge and should reject any plate that is permanently deformed.

Steel plates used in the traveled portion of the highway shall have a surface that was manufactured with a nominal Coefficient Of Friction (COF) of 0.35 as determined by California Test Method 342 (See Appendix H, Encroachment Permits Manual). If a different test method is used, the permittee may utilize standard test plates with known coefficients of friction available from each Caltrans District Materials Engineer to correlate skid resistance results to California Test Method 342. Based on the test data, the permittee shall determine what amount of surface wear is acceptable, and independently ascertain when to remove, test, or resurface an individual plate.

Caltrans Inspectors should not enforce plate removal unless it is permanently deformed or delivered without the required surfacing. However, an inspector should document in a diary all contacts with the contractor.

A "Rough Road" (W8-8) sign and a "Steel Plate Ahead" (W8-24) sign with black lettering on an orange background must be used in advance of steel plate bridging along with the required construction area signs. These signs must be used along with any other construction area signs.

Surfacing requirements are not necessary for steel plates used in parking strips, on shoulders not used for turning movements, or on connecting driveways, etc., not open to the public.

**ENCROACHMENT PERMIT SPECIAL PROVISIONS****STORMWATER SPECIAL PROVISIONS FOR MINIMAL OR NO IMPACT (SWSP)**

TR-0400 (Rev. 09/2024)

1. **GENERAL:** The purpose of these Special Provisions is to provide the Permittee with specifications for water pollution control to minimize, prevent, or control the discharge of material into the air, surface waters, groundwater, and storm sewers owned by the State or local agencies. These provisions are not intended to take the place of the Caltrans Water Pollution Control Program (WPCP) for projects where soil disturbance from work activities ranging from more than a quarter of an acre to less than one acre, or work activities of one acre or more subject to the preparation of the Caltrans Storm Water Pollution Prevention Plan (SWPPP). These provisions must be included with the permit for projects that require an Erosion and Sediment Control Plan (ESCP). The Permittee must comply with the following Special Provisions and the direction of the State Representative. All Stormwater Best Management Practices (BMPs) must conform to Section 13 Water Pollution Control of the Caltrans' Standard Specifications.
2. **NPDES REQUIREMENTS:** The Permittee must be responsible for full compliance with the Caltrans Storm Water Program and the Caltrans National Pollutant Discharge Elimination System (NPDES) Permit requirements (Order 2022-0033-DWQ, NPDES No. CAS000003, and any amendments and/or subsequent orders). Projects in construction with active waste discharge identification number (WDID number) may continue their coverage with the California Construction General Permit CGP (Order 2009-0009-DWQ, NPDES No. CAS000002, and any amendments and/or subsequent orders) until 9/1/2025. Privately funded projects may not extend their 2009 CGP regulatory coverage and are responsible for compliance with the CGP (Order WQ 2022-0057-DWQ NPDES No. CAS000002) after 9/1/2023. It is the Permittee's responsibility to install, inspect, and repair or maintain facilities and devices used for water pollution control practices (BMPs) before performing daily work activities. Installation, inspection and maintenance responsibilities on the job site include: 1) soil stabilization materials in work areas that are inactive or prior to storm events, 2) water pollution control devices to control sediment and erosion, 3) implementation of spill and leak prevention procedures for chemical and hazardous substances stored on the job site, 4) material storage, 5) stockpile management, 6) waste management, 7) non-stormwater management, 8) water conservation, 9) tracking controls, and 10) illicit connection, illegal discharge detection and reporting. The Permittee must report to the State Representative when discharges enter receiving waters, adjacent property, and drainage systems. The Permittee must also address any illicit discharges or illegal dumping prior to start of daily work schedule by cleaning them up. Copies of written notices or orders from the Regional Water Quality Control Board or other regulatory agency must be provided to the State Representative within forty-eight (48) hours of reported activity. For additional information on stormwater compliance, visit the [State Water Resources Control Board's Storm Water Program](#).
3. **RESPONSIBILITY FOR DEBRIS REMOVAL:** The Permittee must be responsible for preventing project related sediment, trash, debris, and other construction waste from entering the street, storm drains, drainage swales, stormwater conveyance infrastructure, local creeks, or any other bodies of water. All existing treatment BMP's (TBMPs) must be protected in place. If an existing TBMP is damaged by the Permittee, the Permittee is responsible for complete repair to a satisfactory condition determined by the State Representative.
4. **SPOILS AND RESIDUE:** The Permittee must vacuum any saw-cut concrete waste material, debris, residue, etc. No spoils, debris, residue, etc. must be washed into a drainage system. The Permittee must ensure that Portland cement concrete and asphalt concrete grindings are not stockpiled or used in a manner that may result in an unauthorized stormwater discharge to waters of the state.
5. **SWEEPING:** Sweep paved roads at construction entrance and exit locations and surrounding paved areas daily within the job site during: 1) clearing and grubbing, 2) earthwork, 3) trenching, 4) soil disturbance, 5) pavement grinding and/or cutting, and 6) after observing tracking of material onto or off the State property. Minimize the amount of dust particles during sweeping activities, ensuring that the levels do not exceed the standards set by local air quality control districts or the EPA's National Ambient Air Quality standards. Use wet-vacuum whenever dust generation is excessive, or sediment pickup is ineffective. Roadways or work areas must not be washed down with water. Street sweeping operations must conform to Section 13 Water Pollution Control of the Caltrans' Standard Specifications.
6. **VEHICLES AND EQUIPMENT:** The Permittee must prevent all vehicles, equipment, etc. from leakage or mud tracking onto roadways. If leaks cannot be repaired immediately, remove the vehicle or equipment from the job site. If vehicle or equipment cannot be immediately removed from job site, install secondary containment to contain spill and prevent illicit non-stormwater discharge.
7. **MAINTENANCE AND FUELING OF VEHICLES AND EQUIPMENT:** Maintenance and fueling of equipment must not result in any pollution at the job site. The Permittee must immediately clean up spills/leaks, and properly dispose of contaminated soil and materials. All maintenance and fueling should be conducted at an appropriate facility that is feasible. All maintenance and fueling which must occur onsite

**ENCROACHMENT PERMIT SPECIAL PROVISIONS**

shall be conducted as far away as practical from drain inlets, water bodies, and other stormwater conveyance systems.

8. **CLEANING VEHICLES AND EQUIPMENT:** Limit vehicle and equipment cleaning or washing at the job site except what is necessary to control vehicle tracking or hazardous waste. All equipment must be sanitized prior to mobilization to limit the spread of invasive plant species. The Permittee must clean all equipment within a bermed area or over a drip pan large enough to prevent run-off. Notify the Engineer before cleaning vehicles and equipment at the job site with soap, solvents, or steam. Any water from this operation must be collected and disposed of at an appropriate site. Containment berms or dikes must be used for fueling, washing, maintaining and washing vehicles or equipment in outside areas. Containment must be performed at least one hundred (100) feet from concentrated flows of storm water, drainage courses, and storm drain inlets if within a flood plain, otherwise at least fifty (50) feet if outside the floodplain. Keep adequate quantities of absorbent spill cleanup material and spill kits in the fueling or maintenance area and on fueling trucks.
9. **DIESEL FUELS:** The use of diesel fuel from petroleum or other fossil fuel as a form-oil or solvent is not allowed.
10. **WEATHER CONDITIONS AT WORKSITE:** Any activity that generates fine particles or dust (e.g., Saw cutting, earthwork, sanding, etc.), which could be carried off-site by stormwater, must be conducted during dry weather conditions to avoid immediate mobilization into the drainage system.
11. **WIND EROSION PROTECTION:** The use of Wind Erosion BMPs must be deployed year-round in instances where dust or fine particles could be transported off site. Potential wind erosion BMPs may include wind fence, water application, gravel, and/or hydro-mulch.
12. **HOT MIX ASPHALT:** Runoff from washing hot mix asphalt must not enter any drainage conveyances or receiving waters.
13. **PROTECTION OF DRAINAGE FACILITIES:** The Permittee must protect/cover gutters, ditches, drainage courses, and inlets with gravel bags, fiber rolls, State approved fabric filters, etc., to the satisfaction of the State Representative during grading, paving, sealing, saw-cutting, grooving and grinding, or any other activity which may result in an illicit discharge. All materials must conform to Section 13-6.02 Materials for Water Pollution Control of the Caltrans' Standard Specifications. No such protection measures must cause an obstruction to the traveling public. The Permittee must implement spill and leak prevention procedures for chemicals and hazardous substances stored on the job site (including secondary containment requirements) in accordance with Section 13-4.03B Spill Prevention and Control and for leaks and spills from vehicles and equipment each day of use in accordance with Section 13-1.03C Inspections for Water Pollution Control and Section 14-11 Hazardous Waste and Contamination for Environmental Stewardship of the Caltrans' Standard Specifications.
14. **PAINT:** Clean water-based and oil-based paint from brushes or equipment within a contained area to prevent contamination of soil, receiving waters, or storm drain systems. Handle and dispose of paints, thinners, solvents, residues, and sludges that cannot be recycled or reused as hazardous waste under section 14-11. When thoroughly dry, dispose of dry latex paint, paint cans, used brushes, rags, absorbent materials, and drop cloths as solid waste under section 14-10.
15. **CONSTRUCTION MATERIALS AND MATERIAL MANAGEMENT:** Materials necessary for erosion and sediment control must be stockpiled on site at convenient locations to facilitate prompt installation. Such materials must be implemented at all inactive disturbed areas, and prior to all qualifying rain events. A "Qualifying Precipitation Event" (QPE) is defined as a forecast with a 50% or greater probability of precipitation that results in 0.5 inches or more of rain within a 24-hour period. Do not allow soil, sediment, or other debris from stockpiles to enter storm drains, open drainages, or watercourses. Minimize stockpiles of all construction materials, including, but not limited to; pressure treated wood, asphalt concrete, cold mix asphalt concrete, concrete, grout, cement containing premixes, and mortar. All stockpiling of such materials must conform to Section 13-4.03C(2) Material Storage and Section 13-4.03C(3) Stockpile Management for Water Pollution Control of the Caltrans' Standard Specifications.
16. **CONCRETE EQUIPMENT:** Concrete equipment must be washed in a designated washing area in a way that does not contaminate soil, receiving waters, or storm drain systems. Any concrete washout activities which result in compromised containment must be cleaned and disposed of immediately. All Designated concrete facilities, including equipment, washout areas must be contained during Qualifying Precipitation Events (QPEs) marked by clearly visible signage throughout the project area.
17. **EXISTING VEGETATION:** Established existing vegetation is the best form of erosion control. Minimize disturbance to existing vegetation. Fenced barriers may serve as an adequate buffer to prevent traffic across existing vegetation. Damaged or removed vegetation must be replaced as directed by the State Representative.
18. **SOIL DISTURBANCE:** Soil disturbing activities must be avoided during the wet weather season. If construction activities during wet weather are allowed in the permit, all necessary erosion control and soil stabilization measures must be implemented in advance of soil disturbing activity. All temporary relocation of BMPs must be completed at the end of each working day and prior to each Qualifying Precipitation Event with a 50% or greater probability of precipitation that results in 0.5 inches or more of rain within a 24-hour period. Silt and debris shall be removed from linear barriers as part of the regular inspection schedule and as deemed necessary by the State Representative.

**ENCROACHMENT PERMIT SPECIAL PROVISIONS**

- 19. SLOPE STABILIZATION AND TRACKING CONTROL:** Consider a certified expert in Erosion and Sediment Control in cases where slopes are disturbed or during implementation of temporary road construction for equipment and material access to the project. The Permittee is directed to comply with Section 13.5 Temporary Soil Stabilization, Section 13.6 Temporary Sediment Control, Section 13.7 Temporary Tracking Control and Section 21 Erosion Control of the Caltrans' Standard Specifications for construction during application of temporary soil stabilization and sediment/tracking control measures to minimize impacts to the soil surface. Temporary construction entrances/exits are required to be stabilized and may include gravel, rumble plates, and/or FODS. Erosion control blankets, temporary mulch, soil binders, tackifier, fiber, seed, straw, temporary covers, rigid plastic, gravel bag barriers, sediment filter bags, temporary check dams, drainage inlet protection, fiber rolls and/or silt fences may be required down slope and on temporary construction roads and entrances until permanent soil stabilization is established. Consult with manufacturer specifications regarding maintenance frequency of sediment controls. All controls must be maintained to ensure proper functionality. The Permittee must limit the use of plastic materials when more sustainable, environmentally friendly alternatives exist or when environmental regulations prohibit their use within the project.
- 20. STOCKPILES:** All stockpiled materials must be stored at least one hundred (100) feet from concentrated flows of storm water, drainage courses, and storm drain inlets if within a flood plain, otherwise at least fifty (50) feet if outside the floodplain. All stockpiles must be covered and protected with a temporary perimeter sediment barrier if inactive or prior to each Qualifying Precipitation Event with a 50% or greater probability of precipitation that results in 0.5 inches or more of rain within a 24-hour period. A stockpile is considered inactive after fourteen (14) days without addition or subtraction. Additionally, cold mix stockpiles must be stored on an impermeable surface and covered with nine (9) mil plastic to prevent contact with water. Minimize stockpiling of materials on the job site. Manage stockpiles by implementing the water pollution control practices in Section 13-4.03C(3) Stockpile Management for Water Pollution Control of the Caltrans' Standard Specifications for construction. Demolished material must not be allowed to enter storm drain systems and receiving waters. Use authorized covers and platforms to collect debris. Use attachments on equipment to catch debris during all demolition activities. Empty debris-catching devices daily and handle debris in accordance with Section 13-4.03D Waste Management for Water Pollution Control of the Caltrans' Standard Specifications for construction.
- 21. DISCOVERY OF CONTAMINATION:** The State Representative must be notified in case any unusual discoloration, odor, or texture of ground water, is found in excavated material. Additionally, the State Representative must be notified if abandoned, underground tanks, pipes, or buried debris are encountered.
- 22. SANITARY AND SEPTIC WASTE:** Do not bury or discharge wastewater from a sanitary or septic system within the highway. A sanitary facility discharging into a sanitary sewer system must be properly connected and free from leaks. Place a portable sanitary facility at least 50 feet away from storm drains, receiving waters, and flow lines. The Permittee must comply with local health agency regulations if using an on-site disposal system.
- 23. LIQUID WASTE:** Prevent job site liquid waste from entering storm drain systems and receiving waters. Drilling slurries, grease or oil-free wastewater or rinse water, dredging, and wash water or rinse water running off a surface or other non-storm water liquids not covered under separate wastewater permits must be held in structurally sound, leak-proof containers, such as portable bins or portable tanks. Store containers at least fifty (50) feet away from moving vehicles, equipment, concentrated flows of storm water, drainage courses, and storm drain inlets. Liquid waste may require testing to determine hazardous material content prior to disposal. All measures must conform to section 13-4.03D(5) Liquid Waste for Water Pollution Control of the Caltrans' Standard Specifications for construction.
- 24. WATER CONTROL AND CONSERVATION:** Manage water use in a way that will prevent erosion and discharge of pollutants into storm drain systems and receiving waters. Direct all runoff into areas where it can infiltrate.
- 25. PILE DRIVING:** Keep spill kits and cleanup materials at pile driving locations. Park pile driving equipment over drip pans, absorbent pads, or plastic sheeting with absorbent material, and away from stormwater run-on when not in use. In the event of oil/grease leaks and spills from pile driving activities, immediately contain and dispose of all contaminated materials.
- 26. DEWATERING:** Dewatering consists of discharging accumulated storm water, groundwater, or surface water from excavations or temporary containment facilities. All dewatering operations must comply with the latest Caltrans guidelines including the Field Guide for Construction Site Dewatering. Contact the State Representative for approval of dewatering discharge by infiltration or evaporation, otherwise, any effluent discharged into a permitted storm water system requires approval from the Regional Water Quality Control Board. Prior to the start of dewatering, the Permittee must provide the State Representative with a dewatering and discharge work plan that complies with Section 13-4.03G Dewatering for Water Pollution Control of the Caltrans' Standard Specifications for construction. Work plan also references guidelines and BMPs in the CGP and the Field Manual for Construction Site Dewatering. A 24-hour email notification of dewatering discharge to the Regional Water Board, including the implemented SWPPP and BMPs, is required by Attachment J of the CGP.

## **HAZARDOUS MATERIALS AND HAZARDOUS WASTE MANAGEMENT**

TR-0408 (New 09/2017)

By acceptance of this encroachment permit, Permittee hereby agrees that:

1. All construction debris/materials/water/excess soil must become the property of the Permittee, and must be transported and disposed of, outside of Caltrans' right-of-way, in accordance with all applicable environmental laws and regulations. The Permittee must be identified as the generator for all construction debris/materials/water/excess soil and must be responsible for proper identification (including sampling and analysis) and management of all construction and contaminated debris/materials/water/excess soil that are removed, and/or excavated, from the work site. If hazardous waste is generated, the Permittee must obtain an Environmental Protection Agency (EPA) Identification Number issued in their name. State Permit Inspector does not sign any manifests or shipping papers. The Permittee must be named as the generator on all Uniform Hazardous Waste Manifests and shipping papers. Caltrans must not be identified or written anywhere on the manifests or shipping papers. Prior to waste disposal, the Permittee should submit the waste generator form(s) to State Permit Inspector for verification. The Permittee must submit to the State Permit Inspector, a copy of all manifests and/or shipping papers generated for materials removed, transported and/or excavated from the state right-of-way.
2. If contaminated material is encountered, Permittee is to stop work and contact the State Permit Inspector immediately. The Permittee must submit a Sampling and Analysis Plan (SAP), and a Health and Safety Plan (HaSP) prepared by a Certified Industrial Hygienist (CIH) and in conformance with California Code of Regulations title 8, section 5192, "Hazardous Waste Operations and Emergency Response" for sampling activity through a separate permit application. Upon the permit review, additional environmental documents may be required prior to resumption of construction activity.
3. Permittee is responsible for any violation, penalty, enforcement action, corrective action, remedial action, and any other type of consequences resulting from cross contamination of groundwater (including perched groundwater), improper handling/managing of hazardous materials and/or placement of contaminated materials inside Caltrans right-of-way.
4. It is the Permittee's responsibility to comply with the Department of Toxic Substances Control (DTSC) ADL requirements for roadway soil management. Reuse of soils containing greater than 80 mg/kg total lead is not allowed without written approval of the DTSC and Caltrans. The Soil Management Agreement for Aerially Deposited Lead-Contaminated Soils between Caltrans and the DTSC does not constitute written approval for the Permittee to reuse soils containing greater than 80 mg/kg total lead.
5. The Permittee must implement the emergency notification requirements established in the California Office of Emergency Management Hazardous Materials, Spill / Release Notification Guidance (<http://www.caloes.ca.gov/>).
6. Any imported material used for backfill must be free of contamination, and a certificate of the material as "clean" with the source area of the material must be provided to Permit Inspector upon request. Importing soils containing greater than 80 mg/kg total lead for use in state right-of-way is not allowed.  
  
Stockpiles of material containing aerially deposited lead shall not be placed where affected by surface run-on or run-off. Stockpiles shall be covered with plastic sheeting 13 mils minimum thickness or with one foot of nonhazardous material. Stockpiles shall not be placed in environmentally sensitive areas. Stockpiled material shall not enter storm drains, inlets, or waters of the State.

## **Infrastructure Projects – As-Built Subsurface Infrastructure**

TR – 0449 (Rev. 08/2025)

In addition to the attached Encroachment Permit General Provisions (TR-0045), the following special provisions are also applicable to projects that construct subsurface infrastructure:

- 1. GENERAL:** The California Department of Transportation is responsible for operating, maintaining and constructing the State Highway System which requires accurate information about subsurface utility infrastructure for both Caltrans and any third-party infrastructure located within the state highway right-of-way. [Government Code section 4216.3](#) (Senate Bill 865, approved by the Governor on September 29, 2020), requires network operators to maintain records of the locations of subsurface installations. "Subsurface installation" means any underground pipeline, conduit, duct, wire, or other structure, except non-pressurized sewer lines, non-pressurized storm drains, or other non-pressurized drain lines. Starting January 1, 2023, all new subsurface installations are to be mapped using a geographic information system (GIS) and maintain permanent records by the network operator. The legislation did not specify the accuracy of the as-builts submitted for newly installed facilities. For accuracy of as-builts and consistency of all as-builts received, Caltrans has adopted the national standard developed by the American Society of Civil Engineers under ASCE/UESI/CI 38-22 Standard Guideline for Investigating and Documenting Existing Utilities.
- 2. APPLICABILITY:** These provisions apply to projects that construct subsurface infrastructure within the Caltrans state highway right-of-way. The following requirements for collecting information, analyzing, and documenting new underground infrastructure apply to all underground infrastructure and meet the requirements of [Government Code section 4216.3](#) for utilities.
- 3. DEFINITIONS:**  
**excavation:** Any operation in which earth, rock, or other material in the ground is moved, removed, or otherwise displaced by means of tools, equipment, or explosives in grading, trenching, digging, ditching, drilling, augering, tunneling, scraping, cable or pipe plowing and driving, or any other way.

**global navigation satellite system (GNSS):** Satellite system used to pinpoint the geographic location of a user's receiver anywhere in the world. Two GNSS systems are in operation: the US GPS and the Russian Federation's GLONASS. Each of the GNSS systems uses a constellation of orbiting satellites working in conjunction with a network of ground stations.

**GNSS base station:** Single ground-based system consisting of a GNSS receiver, antenna, and telemetry equipment that provides differential GNSS correction signals to other GNSS receivers or rovers. Multiple base stations can be combined into a GNSS network.

**GNSS correction service subscription:** Subscription service to receive differential GNSS correction signals for higher accuracy GNSS positioning without the need of a GNSS base station. Signals are normally received via cellular wireless data services.

**GNSS rover:** Portable GNSS antenna, receiver, rod, and data collector with telemetry equipment for real-time point measurements.

**network real time kinematic (Network RTK):** System that uses multiple bases in real-time to provide high-accuracy GNSS positioning within the coverage area that is generally larger than that covered by a single GNSS base station.

**Project Survey Datum:** The Project Survey Datum is a type of reference Metadata. It is necessary to document what datum was used to collect, process, and deliver the geodatabase. The Project Survey Datum used should be consistent for the topographic and base mapping, design and as-builts. Project Survey Datum Metadata may include the name of a standard national or state coordinate reference system or of the individual parameters required to define the system, such as origin, projection system, scale factors, and grid versus ground factors, benchmarks, or control points. Benchmarks or control points are a type of reference Metadata. It is necessary to document what benchmarks or control points were used, what was the source of the X, Y, and Z (i.e., surveyors' control report), and what errors may be associated with survey accuracy.

**real time kinematic global positioning system (RTK-GNSS):** System based on the use of carrier phase measurements of the available GNSS signals where a single GNSS base station or RTK network provides the corrections to achieve centimeter-level accuracy in real time.

**site calibration or localization:** Process that establishes the relationship between the observed control point coordinates and the site coordinate system, which is usually grid. The term applies to both GNSS and robotic total station equipment.

**subsurface utility engineering:** The specialty practice of civil engineering's utility engineering branch that includes the investigation, analysis, judgment, and documentation of existing Utility networks.

**utility quality level A:** Value assigned to that portion (x-, y-, and z-geometry) of a utility segment or subsurface utility feature that is directly exposed and measured and whose location and dimensions are tied to the project survey datum. The utility segment or subsurface utility feature must be tied to the project survey datum with an accuracy of 0.1-foot (30 mm) vertical and to 0.2-foot (60 mm) horizontal for the measurements of the outside limits of the utility feature or utility segment that is exposed.

**utility quality level B:** Value assigned to a utility segment or subsurface utility feature whose existence and horizontal position is based on geophysical methods combined with professional judgment and whose location is tied to the project survey datum.

#### **4. SUBMITTALS:**

Submit the name and qualifications of the licensed land surveyor in the State of California, in responsible charge for the data collection of underground infrastructure, five (5) business days before starting data collection.

Submit site calibration or localization results within one (1) business day of the calibration or localization testing. Allow three (3) business days for the review of the results.

Submit a digital copy and hard copy of the new subsurface infrastructure report.

#### **5. QUALITY CONTROL:**

##### **General**

Horizontal Northing (Y) and Easting (X) coordinates must be referenced to horizontal survey datum North American Datum of 1983 (NAD 83) or the North American Terrestrial Reference Frame of 2022 (NATRF2022), or the Pacific Terrestrial Reference Frame of 2022 (PATRF2022) and have a 0.2-foot (60 mm) horizontal accuracy.

Elevations (Z) must be referenced to the North American Vertical Datum of 1988 (NAVD 88) or the North American-Pacific Geopotential Datum of 2022 (NAPGD2022) and have a 0.1-foot (30 mm) vertical accuracy.

Coordinates and elevations must be in decimal format and have two significant figures after the decimal point.

### **Project Survey Datum**

All GNSS devices for the project must be set to the same state plane survey datum, coordinate system, and CCS83 zone per California Coordinate System of 1983 (CCS83) as defined in Public Resource Codes §§ 8801, 8850 through 8860, and site calibration or localization.

### **GNSS Site Calibration or Localization**

Perform GNSS site calibration or Localization using Caltrans control point information or when Caltrans control points are not available within the project limits, other control points maybe used but must be converted to the datums specified above.

Check each survey control point for accuracy per Caltrans Surveys Manual Chapters 4, 5, 6, 7, 8 and 9.

### **GNSS Check Test**

Check GNSS equipment, including rovers to ensure equipment is setup correctly. Measure a known control point and verify the GNSS equipment achieves accuracies within 0.1-foot for vertical elevations and 0.2-foot for horizontal coordinates.

## **6. INFRASTRUCTURE DATA COLLECTION:**

### **General**

Perform locating of new underground infrastructure. Comply with the analysis, and documentation requirements for subsurface utility engineering quality level A under ASCE/UESI/CI 38-22 Standard Guideline for Investigating and Documenting Existing Utilities.

Use GNSS real time kinematic from one of the following:

1. Network RTK
2. RTK-GNSS

A different high precision position system that meets or exceeds the precision requirements may be used when authorized.

Perform GNSS site calibration or localization at least five (5) business days before starting underground infrastructure data collection.

Perform GNSS check test before starting underground infrastructure data collection and at the end of each workday. Maintain a log of check test measurements.

### **Collecting Data**

Collect location data for new underground infrastructure, including any underground pipeline, sewer lines, storm drains, drain lines, conduit, duct, wire, or other structure.

Measure the coordinates that define the horizontal and vertical location of underground infrastructure relative to a preestablished datum (X-Y-Z) at the center of above ground facility features including, manholes, handholds, storm drains, pull boxes, vaults, and above ground equipment enclosures.

For trenching installation, measure the X-Y-Z values on top of each distinct linear infrastructure at:

1. Horizontal bends
2. Vertical bends
3. Points of deflection
4. Maximum 50-foot intervals

Measurement of X-Y-Z values in trench installation must be by direct survey while the infrastructure is exposed and before backfilling; or by establishing reference tie points with known horizontal and vertical offsets while the infrastructure is exposed, followed by a post-backfill survey. This ensures the licensed surveyor can accurately depict the infrastructure's location to meet Quality Level A standards.

For trenchless installation, measure the X-Y-Z values of each distinct linear infrastructure at:

1. The entrance and exit of the borehole and at all required test pit verification points.
2. Maximum 50-foot intervals between the entrance and exit of the bore hole. Use the installation equipment bore logs or geophysical equipment for indirect locating.

3. The last observed entrance and exit locations where the linear infrastructure passes below a structure or body of water, or the infrastructure is too deep to be detected.

When using geophysical methods for trenchless installation, use at least two geophysical methods for collecting locating data to comply with Utility Quality Level B.

- 7. SUBSURFACE INFRASTRUCTURE REPORTS:** New subsurface infrastructure report includes data collected for new subsurface infrastructure, for compliance with subsurface utility engineering quality levels A and B.

Subsurface infrastructure report includes:

1. A file geodatabase using Caltrans' as-built GIS schema.
2. Files with data collected as points. For linear features, lines must be created from the points collected and the points must remain in the file. All data must be collected using the latest as-built feature code library (fxl). Data files must be compatible with Trimble Business Center, TBC.
3. Information for datum tag and epochs, geoid models, benchmarks, and reference stations used for the collection of horizontal and vertical values.
4. Information and qualifications of the licensed land surveyor who certifies the accuracy and nature of the collected subsurface utility data.

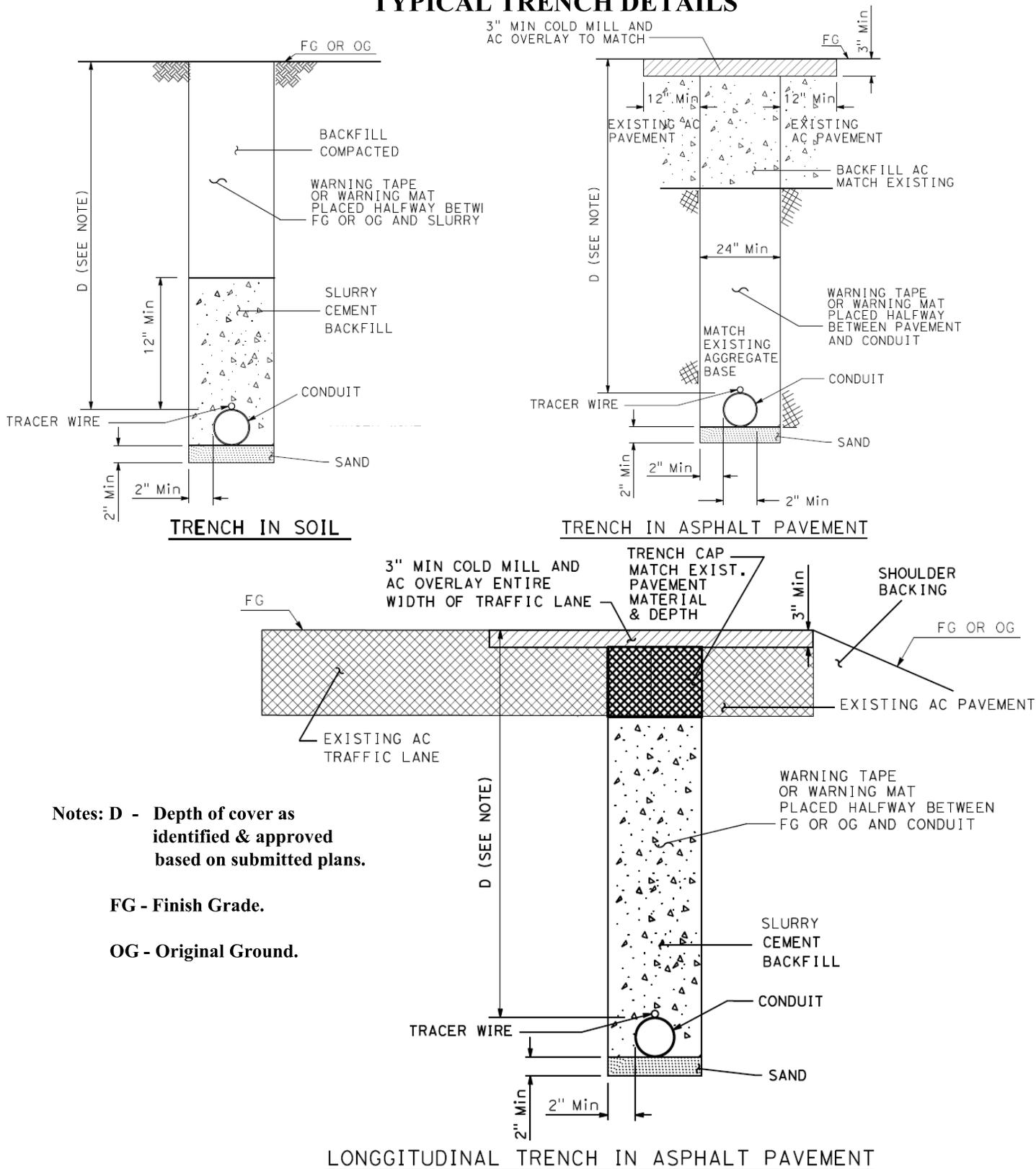
Adhere to the standardized field names, domain values, and depicted geometries shown in Table 2-2 through Table 2-7 of ASCE 75-22 Standard Guideline for Recording and Exchanging Utility Infrastructure Data, include depth information from original ground to located utility, and as provided in the Middle Mile Broadband As-built feature code library (fxl).

The Caltrans survey templates for as-built GIS schema and feature code library are available at:

<https://misc-external.dot.ca.gov/cadd/index.htm>

A responsible charge statement per California Code of Regulations (CCR) 404.2 is required by the licensed land surveyor to ensure the subsurface infrastructure report is valid. A signed, sealed and dated report is required per §411(g)(2)(h) by the licensed land surveyor in responsible charge.

**TYPICAL TRENCH DETAILS**



**Notes: D - Depth of cover as identified & approved based on submitted plans.**

**FG - Finish Grade.**

**OG - Original Ground.**

- All work must be authorized by the encroachment permit, and/or as directed by the State's representative. (Notes continue on page 2)

**ENCROACHMENT PERMIT TRENCH DETAIL**

- Must include tracer wire or other continuous measure to provide positive subsurface detection for the life of the facility (Project Development Procedures Manual (PDPM) Chapter 17).
- Open trench installation of underground utility facilities must include warning tape or warning mats complying with the American Public Works Association (APWA) Uniform Color Code for identifying the type of underground utility. Where mechanical protection is installed, warning tape must be placed above the mechanical protection and below the roadbed subgrade as shown on the details. (PDPM Chapter 17).
- Clearance between the trench wall and conduit of less than 6 inches in width shall be a minimum of 2 inches. Clearance between the trench wall and conduit of greater than 6 inches in width shall be a minimum of 6 inches.
- When the trench width is less than 24 inches the backfill for subgrade must consist of slurry cement. Controlled Low-Strength Material (CLSM) can be substituted at the discretion of the State's representative.
- When trench width is greater than 24 inches compacted aggregate base may be used for backfilling.
- Structure backfill and compaction must conform to Section 19-3.02C and 3.03 of the Standard Specifications.
- For trench located under unimproved surface, structure backfill can use the original soil. Soil must be compacted by mechanical means. Ponding, jetting or flooding are not allowed. Slurry cement backfill is not optional unless approved by the Caltrans District.
- Slurry cement backfill must conform to Section 19-3.02E of the Standard Specifications.
- Aggregate base and its compaction shall conform to Section 26 of the Standard Specifications.
- CLSM if used must conform to Section 19-3.02G of the Standard Specifications. When CLSM is utilized the mix design and test results must be submitted to the State's representative. See Appendix H of the Encroachment Permits Manual for additional information.
- Cold planed surface and overlay shall be to the nearest lane line for the entire length of the trench/disturbed areas, and/or as directed by the State's representative.
- When Hot mix asphalt (HMA) is used to backfill Asphalt Concrete (AC) Section of the road, HMA must conform to Section 39 of the Standard Specifications.
- A paving notch ("T" Cut) shall be cold planed in exist asphalt concrete to a minimum width of 12 inches beyond each side of the trench and to a depth of 3 inches for the final layer of HMA.
- AC used to replace pavement section shall match existing pavement depth, unless directed otherwise by the State's representative.
- A tack coat of asphaltic emulsion conforming to Section 39-2.01C (3) (f) shall be applied.
- When the trench is within 4 feet of curb and gutter, additional cold planning may be required at the discretion of the State's representative. Potholes or trenches separated / adjoined by 10 feet or less to be overlaid together at the discretion of the State's representative.
- Pavement markings and/or striping removed or damaged during construction must be replaced in kind as directed by the State's representative.
- Other trench related details are shown in Chapter 6 of the Encroachment Permits Manual as well as the Trenching and Shoring Manual. Both publications can be found on the State of California, Department of Transportation's website.
- If trench is located in the roadway where Portland Cement Concrete (PCC) exist, remove the concrete to a depth of at least 3 feet below finished grade as per standard Specification 15-1.03B. Replace entire concrete slab from joint to joint as directed by State's representative.
- Electrical systems installations that are part of State Highway System must be installed in compliance with Caltrans Standard Specifications, Section 87.

**ENCROACHMENT PERMIT SPECIAL PROVISIONS****UTILITY UNDERGROUND PROVISIONS (UG)**

TR-0163 (Rev. 07/2023)

In addition to the attached Encroachment Permit General Provisions (TR-0045), the following special provisions are also applicable:

High priority utilities, pressurized facilities, pipes or ducts six (6) inches or larger in diameter, or placement of multiple pipes or ducts regardless of diameters are required to be encased on both conventional and access-controlled State highway right-of-way. An exception to this encasement policy may be allowed on a case-by-case basis with the “Uncased High-Pressure Natural Gas Pipeline” Special Provisions (TR-0158).

A “High Priority Utility” is defined as: 1) natural gas pipelines greater than six (6) inches in diameter, or with normal operating pressures greater than sixty (60) psig; 2) petroleum pipelines; 3) pressurized sanitary sewer pipelines; 4) high-voltage electric supply lines, conductors, or cables that have a potential to ground of greater than or equal to sixty (60) kV; or 5) hazardous materials pipelines that are potentially harmful to workers or the public if damaged.

The pavement or roadway must not be open cut unless specifically allowed. Utility installations are not allowed inside culverts or drainage structures.

All installations must comply with Chapter 17 of the Caltrans Project Development Procedures Manual for utility clearance and offset requirements.

For additional details regarding longitudinal utility encroachments on both conventional and access-controlled State highway right-of-way, see Section 602 of the Encroachment Permits Manual.

**UG 1. ENCASEMENT:** Casings must have an inside diameter sufficiently larger than the outside diameter of the pipe or duct to accommodate placement and removal.

When Horizontal Directional Drilling (HDD) is authorized, High-Density Polyethylene (HDPE) is acceptable as the casing.

When Reinforced Concrete pipe in accordance with Section 65-2 of Caltrans Standard Specifications is installed by Bore & Jack, it must have rubber gaskets at the joints and see “D” below for grouting of voids left by jacking operations.

- A. Spiral welded casings may be allowed provided the casing is new and the weld is smooth.
- B. The ends of the casing must be plugged with ungrouted bricks or other suitable material approved by the Department’s representative.
- C. Minimum wall thicknesses of steel encasements for different lengths and diameters of pipes are as follows:

**Minimum Wall Thickness**

| Casing Diameter | Up to 150 feet in length | Over 150 feet in length |
|-----------------|--------------------------|-------------------------|
| 6 to 28 inches  | 1/4 inch                 | 1/4 inch                |
| 30 to 38 inches | 3/8 inch                 | 1/2 inch                |
| 40 to 60 inches | 1/2 inch                 | 3/4 inch                |
| 62 to 72 inches | 3/4 inch                 | 3/4 inch                |

- D. When required by the Department’s representative, the permittee must pressure grout to fill any voids

caused by the permitted work at the permittee’s expense. The grout holes when placed the inside of the casing must be on eight (8) feet centers, longitudinally and offset twenty-two (22) degrees from the vertical axis of the casing and staggered to the left and right of the top longitudinal axis of the casing. Grout pressure must not exceed five (5) psig for a duration sufficient to fill all voids.

- E. When the placement of multiple encasements is requested, the distance between multiple encasements must be the greater of twenty-four (24) inches or twice the diameter of the larger pipe being installed.
- F. Casings within access-controlled highways must extend to the right-of-way lines.
- G. Wing cutters, if used, must be a maximum of one (1) inch larger in diameter than the outside diameter of the casing. Voids caused by the use of wing cutters must be grouted in accordance with “D” above.
- H. A band welded to the leading edge of the casing must be placed square to the alignment and not on the bottom edge. A flared lead section on bores over one hundred (100) feet is not allowed.
- I. The length of the auger strand must be equal to that of the section of encasement pipe.
- J. The casings within conventional highways must extend at least five (5) feet beyond the back of curb or edge of pavement, or to the right-of-way line if less. Where Portland Cement Concrete (PCC) cross-gutter exists, the casings must extend at least five (5)

**ENCROACHMENT PERMIT SPECIAL PROVISIONS**

feet beyond the back of the cross-gutter, or to the right-of-way line if less.

**UG 2. OPEN-CUT METHOD:** When the encroachment permit authorizes installation by the open-cut method, surfacing and base materials and thickness thereof must be as specified in the encroachment permit.

No more than one (1) lane of the highway pavement must be open cut at any time unless otherwise approved in writing by the Department's representative. After the pipe is placed in the open-cut section, the trench must be backfilled in accordance with Section 19-3 of Caltrans Standard Specifications. The backfilled section must be open to traffic safely with temporary repairs to the surfacing before the next section of pavement is cut.

If backfilling operations have not been properly completed at the end of a working day, steel plate bridging is required to make the entire highway facility open to traffic in accordance with the "Steel Plate Bridging Utility" Special Provisions (TR-0157).

Sides of open-cut trenches in paved areas must be kept as nearly vertical as possible. Trenches must not be two (2) feet wider than the sum of the outside diameter of the pipe to be laid therein plus the necessary width to accommodate shoring.

**UG 3. TRENCHLESS CONSTRUCTION:** The following provisions are applicable for installing conduit with the bore diameter less than thirty (30) inches using trenchless methods (e.g., Bore & Jack, HDD, Microtunneling, Pipe Bursting, Pipe Ramming, etc.). For installations with the bore diameter equal to or greater than thirty (30) inches, permittees must comply with Non-Standard Special Provision (NSSP) 19-15, Trenchless Construction. A copy of the NSSP 19-15 can be obtained from the Department's representative or District Encroachment Permits Office.

### 3.1. Definitions

**Bore:** Borehole excavated using trenchless construction for the installation of conduit.

**Overcut:** Radial annular gap between bore and outer pipe wall.

**3.2. Construction:** The superintendent must be at the site at all times when work is being conducted, if the borehole diameter is greater than ten (10) inches and the depth of installation is less than eight (8) times the diameter of the borehole.

Trenchless excavation and conduit installation must be performed to the line and grade shown. When excavation or installation is out of line or grade, make immediate alignment correction.

Existing structures, pavement, and utilities must be protected during installation. Restore and repair immediately any damage resulting from construction.

Repair or replace any damaged pipe sections.

Overcut must be less than:

- A. One (1) inch or five (5) percent of the conduit outside radius, whichever is less, and
- B. Two (2) inches for trenchless construction using HDD method

Notify the Department's representative immediately if you encounter obstruction or condition that impedes construction.

### 3.3. Quality Assurance

**3.3-1. Pre-construction Meeting:** Contact the Department's representative to schedule and have a pre-construction meeting at least seven (7) business days before the start of trenchless construction or as identified in the permit.

Attendees should include:

1. The Department's representative
2. Your project manager
3. Your project superintendent
4. The contractor for trenchless construction

Provide and present:

1. Trenchless construction shop drawings, work plans, and calculations
2. Mitigation plans for both during and after construction
3. Construction timeline and critical path activities

**3.3-2. Contractor Qualifications:** The contractor must employ a superintendent, who has successfully completed at least five (5) of such projects, if the borehole diameter is greater than ten (10) inches and the depth of installation is less than eight (8) times the diameter of the borehole. Before pre-construction meeting, the following must be submitted to Department's representative if requested:

1. Summary of the contractor's experience demonstrating that the contractor has successfully completed at least five (5) projects in the past five (5) years using similar trenchless construction in similar ground and groundwater conditions with similar drive lengths and diameter range.
2. Summary of the superintendent's experience demonstrating that the superintendent has successfully completed at least five (5) projects using similar construction methods for trenchless construction in similar ground and groundwater

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conditions with similar drive lengths and diameter range.

**3.3-3. Conduit Line, Grade, and Shape:** When monitoring is required:

1. Survey and record control lines at least seven (7) business days before trenchless construction.
2. Observe and adjust measurements of survey control lines weekly. Report discrepancies to the Department's representative.

Survey and record the centerline of the constructed conduit after each section is advanced or every five (5) feet of advancement, whichever is shorter.

**3.3-4. Ground Surface Movement Monitoring:** Ground surface movement monitoring is required if the installation meets the following criteria or if required by the Department's representative:

1. Bore diameter is greater than ten (10) inches, and
2. Minimum vertical distance between the pavement or sidewalk surface and the top of bore is less than eight (8) times the diameter of the borehole.

Mark monitoring points on critical structures and utilities at locations shown. Include these points in monitoring surveys. Perform monitoring surveys before noon and at ambient temperature below eighty-five (85) degrees Fahrenheit. Perform ground surface survey under the Caltrans Surveys Manual and supplemental guidance.

Establish a minimum of four (4) control points for ground surface movement monitoring. Perform baseline ground surface survey at least fifteen (15) business days before trenchless construction. Notify the Department's representative at least ten (10) business days before the survey.

Develop baseline surface model. Use the baseline surface model to determine the movement of ground surface and embankment slope. See Encroachment Permit Survey Grid (TR-0151) in Appendix E of the Encroachment Permits Manual for survey grid spacing and other requirements.

Perform ground surface movement monitoring survey:

1. Weekly during construction or as required by the Department's representative
2. Biweekly for one (1) month after completion of each installation or as required by the Department's representative

Produce the surface model based on the monitoring survey data and calculate the movement of monitoring points using baseline surface model. Each monitoring survey may have different grid points.

Each ground surface horizontal and vertical measurement must be accurate to  $\pm 0.03$  feet on pavement and  $\pm 0.1$  feet

on unpaved surfaces at the ninety-five (95) percent confidence level. Vertical movement produced by comparing current surface model with pre-construction surface model must be accurate to  $\pm 0.01$  feet on pavement and  $\pm 0.1$  feet on unpaved surfaces at the ninety-five (95) percent confidence level.

If ground surface movement in the pavement above the advancing pipe meets the requirements for two (2) consecutive weeks, the frequency of monitoring survey may be reduced to biweekly.

Notify the Department's representative at completion of each installation. Ground surface vertical movement requirements are:

#### Ground Surface Vertical Movement

| Quality Characteristic  | Requirement |
|---|-------------|
| Critical Structure Monitoring Points - Horizontal or Vertical (max, feet) | 0.02        |
| Highway surface (max, feet)   | 0.04        |
| Embankment slope (max, feet)  | 0.2         |

If ground surface vertical movement requirements are not met:

1. Stop work immediately.
2. Notify the Department's representative.
3. Submit an alternative construction method.
4. Submit a mitigation plan that includes methods to fill the voids created under the ground surface and restore the density of subsurface materials.
5. Monitor ground surface movement in the area above the advancing pipe:
  - 5.1. Daily until no additional vertical movement is detected in the areas that exceed the movement requirements
  - 5.2. Every two (2) working days until the vertical movement meets the requirements for two (2) consecutive weeks

#### 3.4. Submittals

**3.4-1. Monitoring Plans:** Submit monitoring plans for:

1. Conduit grade and alignment control, including monitoring instruments, layout of instrumentation points, construction details, and monitoring frequency
2. Logging of excavated materials, including anticipated volume of excavation and measured volume of removed spoil
3. Critical operations of applicable trenchless construction, including excavation, boring, spoil removal, lubrication, jacking, installation, and grouting
4. Ground surface movement, including digital surface survey method, survey data processing and analysis

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method, and digital surface file for the bore diameter greater than ten (10) inches and the vertical distance between the pavement or sidewalk surface and the top of bore less than eight (8) times the diameter of the borehole

**3.4-2. Daily Construction Record:** Maintain Daily Construction Record and submit to the Department's representative upon request.

Daily Construction Record must include:

1. Date and time of operation
2. Names of key personnel
3. Length of constructed conduit, including coordinates and elevation of the beginning and ending (latitude, longitude and northing, easting, elevation) of the conduit advanced during each work shift. Record must reference the project coordinate system.
4. Rate of advance
5. Jacking force
6. Problems encountered, possible causes, and mitigation performed
7. Geological log of excavated face and materials, with the logging performed by a geologist who is registered as an engineering geologist in the State
8. Records and field note of:
  - 8.1. Any visible cracks
  - 8.2. Conduit line and grade control
  - 8.3. Anticipated and actual volumes of spoil removed and causes of the volume discrepancy
  - 8.4. Groundwater table elevation if dewatering is required

**3.4-3. Ground Surface Movement Monitoring**

**Records:** Submit:

1. Before construction: survey data and surface model to demonstrate compliance with the Caltrans Surveys Manual and supplemental guidance
2. During and after construction: survey data, surface model, and vertical movement based on the comparison between current and pre-construction surface model

**3.4-4. Contact Grouting Record:** Maintain Contact Grouting Record and submit to the Department's representative upon request.

Contact Grouting Record must include:

1. Injection locations
2. Grout quantity]
3. Grout pressure
4. Measurements and observations, including heave, casing or carrier pipe movement, grout loss quantity,

communication between grout ports, ground surface, and nearby utilities and storm drains

5. Problems encountered, possible causes, and mitigation performed

**3.4-5. Post-Construction Record:** Maintain Post-Construction Record and submit to the Department's representative upon request.

Post-Construction Record must include:

1. Completed conduit construction inspection records, including video recording and photographs
2. As-built plans showing details and alignment of the constructed conduit, horizontal and elevation survey based on project coordinate system, any problems encountered, and mitigation actions performed
3. As-built plans showing details of pavement restoration work performed

**3.5. Restore Highway Pavement:** After completion of trenchless construction of conduit, restore highway pavement to conditions as it was prior to beginning of construction activities or better. Restore Asphalt Concrete (AC) pavement with mill and fill. Repair or replace AC pavement with dowels for any cracks and spalling caused by construction.

**UG 4. Bore and receiving pits must:**

1. be located at least ten (10) feet from the edge of pavement on rural conventional highways.
2. be located at least five (5) feet beyond the concrete curb and gutter or AC dike on urban conventional highways.
3. be located at least five (5) feet beyond the toe of slope of embankments.
4. be located outside access-controlled highway right-of-way.
5. be protected by placement of six (6)-foot chain link fence or Type K railing around them.
6. be adequately shored in accordance with Cal/OSHA requirements. Shoring for jacking and receiving pits located within fifteen (15) feet of traffic lanes on a State highway must not extend more than thirty-six (36) inches above the pavement grade unless otherwise authorized by Department's representative. Reflectors must be affixed to the shoring on the sides facing traffic. A six (6)-foot chain link fence must be installed around the perimeter of the pits during non-working hours.
7. have crushed rock and sump areas to clear groundwater and water used to clean the casing. Where groundwater is found and pumping is required, the pits must be lined with filter fabric.

**UG 5. LIMIT OF EXCAVATION:** No excavation is allowed within ten (10) feet from the edge of pavement

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except in curbed urban areas or as specified in the encroachment permit. Where no curb exists and excavations within ten (10) feet of the traveled way are to remain open, a temporary Type K railing must be placed at a 10:1 taper or as otherwise directed by the Department's representative.

**UG 6. TUNNELING:** In addition to the requirements of "UG 1" and Section 603.6 of the Encroachment Permits Manual, the following requirements are also applicable:

- A. For this provision, a tunnel is defined as any installation that is thirty (30) inches or greater in diameter.
- B. When tunneling is authorized, the permittee must provide full-time inspection of tunneling operations. The Department's representative must monitor projects.
- C. Sand shields may be required as ground conditions change.
- D. Pressure grouting for liner plate, rib and spiling, or rib and lagging tunnels must be at every eight (8) feet section or the end of work shift before the next section is excavated. All grouting must be completed by the end of each workday.
- E. The headway must be secured at the end of each workday. Breast boards or plates must be installed during working hours for running sand or super-saturated soil.

**UG 7. FACILITIES EXEMPT FROM UTILITY POLICIES:** The following utilities are exempt from the requirements for location and depiction on the project plans unless the depiction of the utility is needed for interconnectivity with the proposed work (see Chapter 17 of the Project Development Procedures Manual):

- Natural gas service lines less than two (2) inches in pipe diameter that have normal operating pressures of sixty (60) psig or less
- Service connections (laterals) for water, sewer, electric, and telecommunication including fiber optic and cable service

All State-owned utilities must be plotted on the plans.

**UG 8. DETECTOR STRIP:** A continuous metallic detectable strip must be provided for non-metallic main utility installations. Service connections must be installed at right angles to the centerline of the State highway.

**UG 9. BACKFILLING:** All backfilling operations must be in accordance with Section 19-3 of Caltrans Standard Specifications.

Any required compaction tests must be performed by a certified laboratory at no cost to the Department and the

laboratory report must be furnished to the Department's representative.

**UG 10. ROADWAY SURFACING AND BASE MATERIALS:** Temporary repairs to pavements must be made and maintained upon completion of backfill until permanent repairs are made. Permanent repairs to pavements must be made within thirty (30) calendar days of completion of backfill unless otherwise authorized by the Department's representative. Temporary pavement patches must be placed and maintained in a smooth riding plane free of humps and depressions.

**UG 11. DAMAGE TO TREE ROOTS:** Tree roots three (3) inches or larger in diameter must not be cut within the tree drip line when trenching or other underground work is necessary adjacent to roadside trees. If such roots are encountered, they must be tunneled under, wrapped in burlap, and kept moist until the trench is backfilled. Trenching machines must not be used under trees if the trunk or limbs can be damaged by their use. Manholes must not be installed within twenty (20) feet of any trunk.

If the trees involved are close together and of such sizes that it is impractical to protect all roots three (3) inches or larger in diameter, or when roots are less than four (4) inches in diameter, outside tree drip line, special arrangements may be made whereby pruning of the tree tops to balance the root loss can be done by the permittee only when approved by and under the close supervision of the District Landscape Specialist or District Tree Maintenance Supervisor.

**UG 12. PIPES ALONG ROADWAY:** Pipes and conduits paralleling the pavement must be located as shown on the plans or as close as possible to the right-of-way line.

**UG 13. BORROW AND WASTE:** Borrow and waste must not be allowed within the work limits unless otherwise specified in the encroachment permit.

**UG 14. MARKERS:** All markers must not create a safety hazard for the traveling public or highway workers.

**UG 15. CATHODIC PROTECTION:** The permittee must perform stray current interference tests on underground utilities under cathodic protection and notify the Department's representative prior to the tests. The permittee must perform any corrective measures as necessary and authorized by the Department's representative.

**UG 16. PAVEMENT REMOVAL:** ASPHALT CONCRETE (AC) pavement must be saw cut to the full depth to provide a neat and straight pavement break along sides of the trench. Portland Cement Concrete (PCC)

**ENCROACHMENT PERMIT SPECIAL PROVISIONS**

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pavement must be saw cut at the slab joints and to the full slab depth.

Where the edge of the trench is within two (2) feet of the existing curb and gutter or pavement edge, the AC pavement between the trench and the curb or pavement edge must be removed.

**UG 17. EXCAVATION UNDER FACILITIES:**

Where it is necessary to excavate under the existing curb and gutter or underground facilities, the void must be backfilled with two (2) sack cement-sand slurry.

**UG 18. PERMANENT REPAIRS TO PCC**

**PAVEMENT:** Repairs must be of PCC containing at least six hundred fifty-eight (658) pounds or seven (7) sacks of cement per cubic yard. The new pavement must have the same thickness as the adjacent pavement. The PCC must be satisfactorily cured and protected from

disturbance until it can be open to traffic with a compressive strength of at least 3,000 psig or for not less than forty-eight (48) hours. The new pavement may be open to traffic after six (6) hours of curing when no more than two (2) percent by weight of calcium chloride is added to the PCC mix as an accelerating chemical admixture.

**UG 19. REMOVAL OF PCC SIDEWALKS OR**

**CURBS:** PCC sidewalks or curbs must be saw cut to the nearest score marks and reconstructed to match the existing sidewalk or curb.

**UG 20. SPOILS:** No earth or construction materials must be tracked onto the highway pavement and public or private approach. The permittee must remove these materials immediately if tracked from the highway pavement and public or private approach.

**ATTACHMENT 6: Specification (Select Pages)**  
**BID ADDENDUM 1**  
SANITARY SEWER REHABILITATION AND  
REPLACEMENT PROJECT -  
ADELINE STREET, WOOLSEY STREET,  
BENVENUE AVENUE, ET AL  
SPECIFICATION 25-11758-C  
APPENDIX 13

# **APPENDIX 13**

## **MONUMENT REFERENCING**

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**CITY OF BERKELEY SANITARY PLAN 8301 SPEC 26-11758-C MONUMENTS TO BE REFERENCED**

| DESIGNATION   | DESCRIPTION | ELEVATION<br>(Berkeley Datum) | LOCATION<br>(Street Intersection or Nearest Address) |  |
|---|-------------|-------------------------------|--|--|
| <b><u>MONUMENTS TO BE REFERENCED BOTH HORIZONTALLY AND VERTICALLY: (note: Elevations of 5000.00 are assumed elevations)</u></b> |             |                               |  |  |
| 1   | B2299       | BDCM16P-CoB-LS4210            | 398.55   | Dwight Way / Hillside Avenue (see plan 8301 sheet 4)                 |
| 2   | B2308       | BPCM2                         | 220.34   | Parker Street / Telegraph Avenue - east side (see plan 8301 sheet 5) |
| 3   | B0125       | BPCM2                         | 188.45   | Ashby Avenue / Telegraph Avenue - west side (see plan 8301 sheet 6)  |
| 4   | B0826       | BPCM2                         | 5000.00  | Ashby Avenue / Telegraph Avenue - east side (see plan 8301 sheet 6)  |
| 5   | B0120       | BPCM2                         | 134.18   | Ashby Avenue / Newbury Street (see plan 8301 sheet 7)                |
| 6   | B0001       | BDCM16P-CoB-PLS6392           | 5000.00  | 63rd Street / King Street (see plan 8301 sheet 9)                    |
| 7   | B0039       | BPCM2                         | 171.79   | Telegraph Avenue / Woolsey Street (see plan 8301 sheet 10)           |
| 8   | B0037       | IPCM6sq                       | 190.37   | Colby Street / Woolsey Street (see plan 8301 sheet 10)               |
| 9   | B0036       | IPCM7                         | 198.61   | Regent Street / Woolsey Street (see plan 8301 sheet 12)              |
| 10  | B0035       | IPCM6sq                       | 201.61   | Bateman Street / Woolsey Street (see plan 8301 sheet 12)             |
| 11  | B2550       | IPCM8                         | 205.94   | Hillegass Avenue / Woolsey Street (see plan 8301 sheet 12)           |
| 12  | B0034       | BDCM16P-CoB-LS4210            | 208.00   | Hillegass Avenue / Woolsey Street (see plan 8301 sheet 12)           |
| 13  | B2551       | BDCM16P-CoB-LS4210            | 214.07   | Benvenue Avenue / Woolsey Street (see plan 8301 sheets 13 & 17)      |
| 14  | B0033       | BDCM16P-CoB-LS4210            | 215.98   | Benvenue Avenue / Woolsey Street (see plan 8301 sheets 13 & 17)      |
| 15  | B2144       | BDCM16P-CoB                   | 224.49   | College Avenue / Woolsey Street (see plan 8301 sheet 13)             |
| 16  | B0172       | BDCM16P-CoB                   | 240.57   | Benvenue Avenue / Russell Street (see plan 8301 sheet 14)            |
| 17  | B0129       | BPCM2                         | 228.52   | Ashby Avenue / Benvenue Avenue (see plan 8301 sheet 15)              |
| 18  | B1900       | IPCM5                         | 5000.00  | 28 Eucalyptus Road (see plan 8301 sheet 22)                          |

**DESCRIPTION LEGEND:**

BDCM16P-CoB = Brass Disk City Monument 16 times 1/8" (2") in diameter with a Punch mark and stamped CITY OF BERKELEY UNLAWFUL TO DEFACE (in a standard monument well)

BDCM16P-CoB-LS4210 = Brass Disk City Monument 16 times 1/8" (2") in diameter with a Punch mark and stamped CITY OF BERKELEY UNLAWFUL TO DEFACE and also stamped LS4210 (in a standard monument well)

BPCM2 = Brass Pin City Monument 2 times 1/8" (1/4") in diameter (in a standard monument well)

IPCM6sq = Iron Pin City Monument 6 times 1/8" (3/4") square (in a standard monument well)

IPCM7 = Iron Pin City Monument 7 times 1/8" (7/8") in diameter (in a standard monument well)