

SECTION 01 35 49

MINIMUM ENVIRONMENTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes minimum provisions for compliance with City, state, and federal laws and regulations for environmental protection, and notes to which Standard Construction Measure (SCM) the section refers.
1. Geotechnical Considerations (SCM-1): For projects involving excavation in the public right-of-way, Contractor is directed to Article 2.4 of the San Francisco Public Works Code, "Excavation in the Public Right-of-Way" and San Francisco Public Works Order No. 187,005, "Regulations for Excavating and Restoring Streets in San Francisco." It is unlawful for any person to make or to cause or permit to be made any excavation in any public right-of-way that is under the jurisdiction of the Public Works without first obtaining from Public Works a permit authorizing such excavation.
 2. Air Quality (SCM-2): For execution, see 3.1 of this section.
 3. Water Quality (SCM-3). For execution, see 3.2 of this section.
 4. Traffic (SCM-4): For execution, see 3.3 of this section.
 5. Noise (SCM-5): For execution, see 3.4 of this section.
 6. Hazardous Materials (SCM-6)
 - (a) Refer to applicable Divisions 01 and 02 Hazardous Materials-related specifications.
 7. Bird Protection and Bat (SCM-7): For execution, see 3.5 of this section.
 8. Tree Conservation (SCM-7): For execution, see 3.6 of this section.
 9. Environmentally Sensitive Area (SCM 7, SCM-9): For execution, see 3.7 of this section.
 10. Construction Staging (SCM-8): For execution, see 3.8 of this section.
 11. Archaeological and Paleontological Discovery (SCM-9): For execution, see 3.9 of this section.
- B. This section is to be understood as follows:
1. **1.4(B) Regulatory Requirements**, supplemented by the **1.2 References** section, list the state, federal, and City requirements addressed by this section.
 2. **1.6 Project Conditions** contains determinations as to what factors determining means of environmental compliance with state, federal, and City requirements are present for the project.
 3. **3 Execution** provides specific execution requirements for compliance, some of which are conditional and triggered by the conditions listed in **1.6 Project Conditions**.
 4. Submittals triggered by conditional execution requirements are noted as such in **1.4 Submittals**.

C. Related Sections:

1. Section 00 41 00 Bid Form
2. Section 01 35 50 Additional Environmental Procedures
3. Section 01 41 00 Regulatory Requirements
4. Section 01 31 19 Project Meetings
5. Section 02 81 10 Environmental Management of Excavated Materials

1.2 REFERENCES

A. Refer to the following references:

1. American National Standards Institute (ANSI). 2008. *American National Standard for tree care operations – Tree Shrub and Other Woody Plant Maintenance – Standard Practices (A300 Part 1): Pruning*. New York, NY
2. American National Standards Institute (ANSI). 2006. *Safety Requirements for arboricultural Operations (Z133)*. New York, NY
3. Asbestos Airborne Toxic Control Measure For Construction, Grading, Quarrying, And Surface Mining Operations (California Code Of Regulations Title 17, Section 93105)
4. Bald and Golden Eagle Protection Act, 16 USC § 668
5. Bay Area Air Quality Management District, “Current Rules”. Available at <http://www.baaqmd.gov/rules-and-compliance/current-rules>
6. Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*. May 2017. Available at <http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa>
7. Berglund, B. *Guidelines for Community Noise - A complete, authoritative guide on the effects of noise pollution on health*. World Health Organization, Geneva, 1999
8. California Code of Regulations, Title 8 Sec. 1592
9. California Department of Food and Agriculture, 2014. *Plant Quarantine Manual*, 3700. Oak Mortality Disease Control.
10. California Department of Transportation, *Storm Water Quality Handbooks Construction site Best Management Practices Manual*. Available at <http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm>
11. California Fish and Game Code §§ 3503, 3513, and 3800
12. California State Water Resources Control Board, Construction General Permit Order
13. California Stormwater Quality Association, *Construction Best Management Practice Online Handbook*. Available at <https://www.casqa.org/resources/bmp-handbooks>
14. City and County of San Francisco Municipal Transportation Agency, 2012. *Regulations for Working in San Francisco Streets*, 8th ed.
15. City of San Francisco, June 27, 2006. “Pruning Standards for Trees”. Available at http://sfdpw.org/sites/default/files/FileCenter/Documents/234-SF_Pruning_Stds_6.27approved.pdf

16. Federal Migratory Bird Treaty Act (16 USC § 703–711, 50 CFR 10)
17. Geological Features & Special Permits (California Public Resources Code Section 4307 and Section 4309)
18. National Historic Preservation Act of 1966, (16 U.S.C. 470)
19. Native American Historic Resource Protection Act; Archaeological, Paleontological, and Historical sites; Native American Historical, Cultural, and Sacred sites (California Public Resources Code Section 5097-5097.993)
20. Nuru, M. "Standard Construction Measures for all Public Works Projects". San Francisco Public Works, July 1, 2017
21. San Francisco Department of Public Health, "Monitoring Guidelines for SFHC Article 22B"
22. San Francisco Industrial Waste Ordinance #19-92
23. San Francisco Planning Department, "Consultant & Sponsor Resources". <http://sf-planning.org/consultant-sponsor-resources>
24. San Francisco Police Code, Article 29, Ordinance #274-72 ("Noise Ordinance")
25. San Francisco Public Health Code, Article 22B
26. San Francisco Public Utilities Commission, "Re: Application of the Stormwater Design Guidelines Requirements to the Public Right-of-Way", Rev. September 2013. Available at <http://www.sfwater.org/modules/showdocument.aspx?documentid=4228>.
27. San Francisco Public Utilities Commission, *Construction Best Management Practices Handbook*. Available at <http://sfwater.org/index.aspx?page=235>
28. San Francisco Public Works Code, Article 4.1 Sewer Use Ordinance
29. San Francisco Public Works Code, Article 4.2 Sewer System Management Ordinance
30. San Francisco Public Works Code, Ordinance No. 260-13, Construction site Runoff Ordinance
31. San Francisco Public Works Dust Control Order (DPW Order No. 171,378)
32. San Francisco Public Works Order No. 158,170, "Wastewater discharges into the City sewerage system"
33. San Francisco Public Works Order No. 178.940, "Regulations for Excavating and Restoring Streets in San Francisco"

1.3 DEFINITIONS

- A. For the purposes of this Section, the following definitions apply:
1. Air Pollutant Exposure Zone: A zone having a substantially greater than average concentration of air pollutants as defined in Health Code Section 3804.
 2. "ALERT" sheet: Single-page flyer produced by the San Francisco Planning Department and provided to the contractor by the City Representative, containing a notification that the project site may be located in an archaeologically sensitive area.
 3. Alternative Fuels: Any transportation fuel that is less polluting than gasoline or petroleum diesel fuel, as determined by the California Air Resource Board and

that is shown to have lower lifecycle carbon emissions than gasoline or petroleum diesel. Alternative Fuels may include but are not limited to natural gas; propane; biofuels from low carbon, sustainable and preferably local sources; hydrogen produced from low carbon and/or renewable sources; and electricity.

4. Alternative Sources of Power: Utility-based electric power or other power sources other than diesel engines.
5. ARB: The California Air Resources Board.
6. Archaeological resources: Remains of past human activity, including historic and prehistoric material such as tools and tool fragments, hearth and food remains, structural remains, and human remains.
7. Bridge: A structure that carries a utility or railroad or vehicle, pedestrian, or other traffic over, under, or around obstructions or waterways.
8. Building: A building as defined in the San Francisco Planning Code Section 102, "Definitions".
9. CDFW: The California Department of Fish and Wildlife.
10. Clean Construction: The performance of all work required to be performed under a Public Works contract meeting the requirements in Sections 2504, 2505 and 2506 of the Environment Code, as applicable.
11. Construction Activities means the performance of all work involved in or required for Construction, except for the issuance or obtaining of a site permit for a project.
12. Construction means building, demolition, excavation, grading or foundation work, whether or not the work requires a City permit.
13. Construction Phase: A particular construction activity over a certain period of time. Construction phases may include, but are not limited to, demolition, site preparation, grading, building construction, architectural coatings, and paving. Multiple Construction Phases of a single project may take place at the same time.
14. DPH: The San Francisco Department of Public Health.
15. Environmentally sensitive area: Area within or near construction limits where access is prohibited or limited in order to protect environmental resources.
16. Equipment Type: A category of off-road equipment. Types of off-road equipment include bore/drill rigs, cranes, crawler tractors, excavators, graders, off-highway tractors, off-highway trucks, other construction equipment, pavers, paving equipment, rollers, rough terrain forklifts, rubber-tired dozers, rubber-tired loaders, scrapers, skid steer loaders, surfacing equipment, tractors/loaders/backhoes, and trenchers.
17. Feasible: When applied to an action required of the Contractor, that action, in the opinion of the City Representative, can be accomplished without resorting to extraordinary means and measures.
18. Inactive nests: Nests that do not contain eggs, chicks, or raptors displaying reproductive behavior.
19. Land disturbance: Any movement of earth or a change in the existing natural soil cover or existing topography that may result in soil erosion from wind, or water, and the moving of sediments into or upon waters, lands or public rights-of-way within the City of County of San Francisco, including, but not limited to building demolition, clearing, grading, grubbing, filling, stockpiling, excavating and transporting over land.

20. Major Construction Project: A public work to be performed within the geographic limits of the City that uses off-road equipment and that is estimated to require 20 or more cumulative days of work, including non-consecutive days, to complete.
21. Most Effective Verified Diesel Emission Control Strategy (VDECS): a device, system or strategy that is verified, pursuant to Division 3, Chapter 14, of Title 13 of the California Code of Regulations, to achieve the highest level of pollution control from an off-road vehicle.
22. Nesting Season: The City anticipates nesting or attempted nesting by migratory and non-game birds from February 15 to August 31.
23. Off-Road Engine: A non-road engine as defined in Title 40 of the Code of Federal Regulations, Section 89.2.
24. Off-Road Equipment: Equipment with an off-road engine having greater than 25 horsepower and operating for more than 20 total hours over the entire duration of Construction Activities.
25. On-Road Equipment: A heavy-duty vehicle as defined in Title 40 of the Code of Federal Regulations, Section 86.1803-01.
26. Paleontological resources: Fossils and the deposits in which they are found. Fossils are evidence of ancient life preserved in sediments and rock. Examples of paleontological resources are the remains of (1) animals, (2) animal tracks, (3) plants, and (4) other organisms. Archaeological resources are not paleontological resources. Fossils found within an archaeological resource are generally considered archaeological not paleontological resources.
27. Plant species that may harbor Phytophthora: The City considers host species to include: Coast Live Oak (*Quercus agrifolia*), Canyon Live Oak (*Quercus chrysolepis*), California Black Oak (*Quercus kelloggii*), Shreve's Oak (*Quercus parvula* var. *shrevei*), Tanoak (*Notholithocarpus densiflorus*), California bay laurel (*Umbellularia californica*), Rhododendron (*Rhododendron* species), and Camellia (*Camellia* species).
28. Portable Diesel Engine: A diesel engine that is portable as defined in 71 California Code of Regulations, Section 93116.2(bb).
29. Rain event: A rain event is a forecast for the project area by the National Weather Service of a 50 percent chance of occurrence within the following 72 hours of an amount of precipitation of 0.50 inch or greater.
30. Rainy season: Refer to General Conditions, Section 00 72 00 of the Project Manual for the dates of the rainy season.
31. Sensitive receptor (air quality): Means residence, school, childcare center, hospital or other health-care facility or group living quarters.
32. Sensitive receptor (noise): Any environment listed in *Guidelines for Community Noise - A complete, authoritative guide on the effects of noise pollution on health* (World Health Organization, Geneva, 1999). Table 4.1, for which the recommended noise levels are low, as low as possible, or a maximum $LA_{eq}[dB] < 70$. These include:
 - (a) Outdoor living areas
 - (b) Dwellings, indoors
 - (c) Inside bedrooms
 - (d) Outside bedrooms (window open)
 - (e) School classrooms and pre-schools, indoors

- (f) Pre-school bedrooms, indoors
 - (g) School, playground outdoor
 - (h) Hospital, ward rooms, indoors
 - (i) Hospitals, treatment rooms, indoors
 - (j) Outdoors in parkland and conservation areas
33. Sensitive Use: A category of building use identified as a Sensitive Use in Health Code Section 3804.
34. Soil: Native fill or introduced earthen fill. It does not include materials that were previously introduced as part of roadway pavement section (including asphalt concrete wearing surface, roadway base, and subbase).
35. Standard Construction Measures (SCMs): The City has established Standard Construction Measures that are contained in the project's Categorical Exemption Determination. As applicable, Contractor-related measures are included in this section, or their location is indicated in 1.1(B) of this section.
36. Take: Legal definition regarding harm to protected species as defined in 16 USC § 1532 and California Fish & Game Code § 86.
37. Tier 2 Off-Road Emission Standards: The Tier 2 new engine emission standards in Title 13, California Code of Regulations, Section 2423(b)(1)(A) and/or Title 40, Code of Federal Regulations, Part 89.112(a).
38. VDECS: A verified diesel emission control strategy, designed primarily for the reduction of diesel particulate matter emissions, which has been verified by ARB pursuant to Verification Procedures, Warranty and In-Use Strategies to Control Emissions from Diesel Engines, Title 13, California Code of Regulations, Sections 2700-2710. VDECS can be verified to achieve Level 1 diesel particulate matter reductions (at least 25 percent), Level 2 diesel particulate matter reductions (at least 50 percent), or Level 3 diesel particulate matter reductions (at least 85 percent).
39. Visible dust: Dust comprising visible emissions as defined in Bay Area Air Quality Management Board Regulation 6 – Particulate Matter.

1.4 SUBMITTALS

- A. Contractor is directed to 1.6 PROJECT CONDITIONS and PART 3 EXECUTION of this section for which of the following submittals are required.
- B. Where required by 1.6(B) and 3.1(C) of this section, Contractor shall submit Contractor's initial Dust Control Plan no less than 28 days prior to mobilization. Dust control plan shall conform to the following:
- 1. The site-specific dust control plan shall contain mapping identifying locations of sensitive receptors.
 - 2. The site-specific dust control plan shall contain site-specific dust monitoring and control measures that will apply to the project. These site-specific measures may include the following or equivalent measures, which accomplish the goal of minimizing visible dust:
 - (a) Wetting down areas around soil improvement operations, visibly dry disturbed soil surface areas, and visibly dry disturbed unpaved driveways at least three times per shift per day.

- (b) Analysis of the wind direction.
 - (c) Placement of upwind and downwind particulate dust monitors.
 - (d) Recordkeeping for particulate monitoring results.
 - (e) Hiring of an independent third party to conduct inspections for visible dust and keeping records of those inspections.
 - (f) Requirements for when dust generating operations have to be shut down due to dust crossing the property boundary or if dust is contained within the property boundary but not controlled after a specified number of minutes.
 - (g) Establishing a hotline for surrounding community members to call and report visible dust problems so that the Applicant can promptly fix those problem; posting signs around the site with the hotline number and making sure that the number is given to adjacent residents, schools and businesses.
 - (h) Limiting the area subject to excavation, grading, and other demolition or construction activities at any one time.
 - (i) Minimizing the amount of excavated material or waste materials stored at the site.
 - (j) Installing dust curtains, plastic tarps or windbreaks, or planting tree windbreaks on the property line on windward and down windward sides of construction areas, as necessary.
 - (k) Paving, applying water three times daily, or applying non-toxic soil stabilizers on all unpaved access roads, parking areas and staging areas at the construction site. Reclaimed water must be used if required by Article 21, Section 1100 et seq. of the San Francisco Public Works Code, Article 22. If not required, reclaimed water should be used whenever possible.
 - (l) Establishing speed limits so that vehicles entering or exiting construction areas shall travel at a speed that minimizes dust emissions. This speed shall be no more than the speed specified in paragraph 3.1B.
 - (m) Installing wheel washers to clean all trucks and equipment leaving the construction site. If wheel washers cannot be installed, tires or tracks and spoil trucks shall be brushed off before they reenter City streets to minimize deposition of dust-causing materials.
 - (n) Terminating excavation, grading, and other construction activities when winds speeds exceed 25 miles per hour.
 - (o) Hydroseeding inactive construction areas, including previously graded areas inactive for at least 10 calendar days, or applying non-toxic soil stabilizers.
 - (p) Sweeping of surrounding streets during demolition, excavation and construction at least once per day to reduce particulate emissions.
- C. Where required by 1.6(A) and 3.1(E) of this section, Contractor will submit Construction Emissions Minimization Plan submittals:
- 1. Contractor shall submit Contractor's initial Construction Emissions Minimization Plan no less than 28 days prior to mobilization.
 - 2. Contractor shall submit an updated Construction Emissions Minimization Plan on a quarterly basis and submit each quarterly report within seven business days of the end of each quarter.

3. Contractor shall submit a final Construction Emissions Minimization Plan report summarizing construction activities within two weeks of achieving Substantial Completion.
4. Waiver Request: Contractor shall submit a waiver request to the DPH Head no less than two weeks prior to the planned use of a specific piece of off-road equipment.
5. The Emissions Plan shall include estimates of the construction timeline by phase, with a description of each piece of off-road equipment required for each Construction Phase.
 - (a) The description may include, but is not limited to equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel usage and hours of operation.
 - (b) For the VDECS installed, the description may include, but is not limited to technology type, serial number, make, model, manufacturer, ARB verification number level, and installation date and hour meter reading on installation date.
 - (c) For off-road equipment using alternative fuels, the description shall also specify the type of alternative fuel.
 - (d) Contractor may use the Clean Construction Equipment Inventory Template to satisfy the Emissions Plan requirements. Refer to the following link for that template: <https://www.sfdph.org/dph/EH/Air/CleanConstruction.asp>
6. Submittal of initial, quarterly, and final Construction Emissions Minimization Plans is a prerequisite to payment.
7. The Contractor agrees to comply fully with the Emissions Plan and acknowledges that a significant violation of the Emissions Plan shall constitute a material breach of the Agreement. Contractor must submit a signed Clean Construction Emissions Plan Certification Statement to the City Representative. Contractor shall submit this statement with its Construction Emissions Minimization Plan. Refer to the following link for the Emissions Plan Certification Statement Template: <https://www.sfdph.org/dph/EH/Air/CleanConstruction.asp>
8. After City review and approval, the Contractor shall make the Emissions Plan available to the public for review onsite during working hours.
 - (a) The Contractor shall post at the construction site a legible and visible sign summarizing the Emissions Plan. Refer to the following link for the Clean Construction Sign Template: <https://www.sfdph.org/dph/EH/Air/CleanConstruction.asp>
 - (b) The sign shall also state that the public may ask to inspect the Emissions Plan for the project at any time during working hours and shall explain how to request to inspect the Emissions Plan.
 - (c) The Contractor shall post at least one copy of the sign in a visible location on each side of the construction site facing a public right-of-way.
9. Reporting:
 - (a) After Construction Activities begin, the Contractor shall update the Emissions Plan on a quarterly basis documenting changes from the original plan and demonstrating compliance with the Emissions Plan. The report shall be submitted to the City Representative quarterly and a copy shall also be maintained at the construction site.

- (b) Prior to receiving a Notice of Final Completion, or within six months of completion of Construction Activities if a final certificate of acceptance is not required, the Contractor shall submit to the City Representative a final report summarizing Construction Activities, including the start and end dates and duration of each Construction Phase, and the specific information required in the Emissions Plan.
- D. Where required by 1.6(C), 1.6(D), and/or 1.6(E), and 3.2 of this section, contractor shall submit Construction Erosion Control Submittals:
 - 1. Contractor must submit documentation of the approval of the Erosion and Sediment Control Plan (ESCP) and/or Stormwater Pollution Prevention Plan (SWPPP) by the San Francisco Public Utilities Commission and/or the Regional Water Quality Control Board to the City Representative before the beginning of construction.
 - 2. For project work within the jurisdiction of the Port of San Francisco (Port), contractor shall provide the City Representative before the beginning of construction with the Port's written assent that the Port's construction-stormwater requirements have been met.
 - 3. Contractor shall provide written and schematic details to the satisfaction of the City Representative of site-specific implementation of the Best Management Practices (BMPs) of the ESCP or SWPPP to be applied before the beginning of construction.
 - (a) Descriptions of BMPs and their implementation may be found at:
 - (i) SFPUC's Construction Best Management Practices Handbook, available for download at: <http://sfwater.org/>
 - (ii) California Stormwater Quality Association's Construction Best Management Practice Handbook, available for download at: <https://www.casqa.org/>
 - (iii) Caltrans Storm Water Quality Handbooks Construction site Best Management Practices Manual available for download at: <http://www.dot.ca.gov/hq/construc/stormwater>
- E. Qualification Data: For firms and persons specified in subsection 1.5 "Quality Assurance" of this Section to demonstrate their capabilities and experience.
- F. Where required by 3.6(D) of this section, Contractor shall provide City Representative with documentation of disposal of plant materials potentially harboring the *Phytophthora ramorum* pathogen.
- G. Written and/or photographic documentation of methods for avoidance of Environmentally Sensitive Areas, where Environmentally Sensitive Areas are shown on project plans.
- H. The contractor shall submit the "ALERT" sheet affidavit where required by 1.6(G) and 3.9(B) (2) of this section within five business days of the start of construction activities.
- I. The contractor shall provide to the City Representative documentation of an approved SFPUC sewer-discharge permit in advance of any discharge of runoff and dewatering into the City's combined sewer system.
- J. Where required by 1.6(I) and 3.1(B)(11)(b) of this section, the contractor shall provide a copy of written notice, accompanied by proof of submittal, provided to the Bay Area Air Quality Management District in accordance with the requirement of the "Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface

Mining Operations,” in advance of roadway construction and maintenance activities in areas soils containing naturally occurring asbestos. The contractor shall use the “Notification Form for Road Construction and Maintenance Operations” provided at BAAQMD’s website at <http://www.baaqmd.gov/permits/asbestos/naturally-occurring-asbestos>.

- K. Contractor shall pay all costs associated with the obtaining of and compliance with any required permits in this subsection 1.4.

1.5 QUALITY ASSURANCE

A. Qualifications

1. Qualified Acoustical Consultant: A Board Certified Institute of Noise Control Engineering (INCE) member or other qualified consultant or engineer approved by the City Representative.
2. Qualified Arborist: The Qualified Arborist is one provided by Contractor who possesses a professional certification from the International Society of Arboriculture, and/or possesses a valid C-27 and/or a C-61/D-49 license in the State of California.
3. Specialty Environmental Monitor – archaeologist: One who in the determination of the City representative is qualified to monitor land-disturbing activities for effects to buried archaeological resources.
4. Qualified Biologist: The Qualified Biologist is one provided by Contractor whose activities must be approved by a state or federal agency as provided in applicable permit, license, agreement, certification, or any combination of these. In the event that none of these apply, the biologist must possess at a minimum a bachelor’s degree in Wildlife Biology or a closely related discipline, as approved by the City Representative.
5. Qualified Historic Architect or Historic Preservation Professional: Any consultant within the “Historic Resource Consultant Pool” as established by the San Francisco Planning Department.
6. Qualified SWPPP Practitioner (QSP): Individual who is authorized by the State Water Resources Control Board (SWRCB) to develop and revise Stormwater Pollution Prevention Plans.

B. Regulatory Requirements

1. All work shall comply with the following:
 - (a) Bald and Golden Eagle Protection Act, 16 USC § 668.
 - (b) Bay Area Air Quality Management District (BAAQMD), Current Rules.
 - (c) BAAQMD Regulation 6-305, Particulate Matter and Visible Emissions, (<http://www.baaqmd.gov/regs/rq0600.pdf>)
 - (d) California Fish and Game Code §§ 3503, 3513, and 3800
 - (e) California State Water Resources Control Board, Construction General Permit Order
 - (f) City and County of San Francisco Municipal Transportation Agency, *Regulations for Working in San Francisco Streets*, 8th ed., 2012.
 - (g) Federal Migratory Bird Treaty Act (16 USC § 703–711, 50 CFR 10)

- (h) Geological Features & Special Permits (California Public Resources Code Section 4307 and Section 4309)
 - (i) National Historic Preservation Act of 1966, (16 U.S.C. 470)
 - (j) Native American Historic Resource Protection Act; Archaeological, Paleontological, and Historical sites; Native American Historical, Cultural, and Sacred sites (California Public Resources Code Section 5097-5097.993)
 - (k) San Francisco Building Code Section 106.3.2.6, Ordinance 176-08 ("Construction Dust Control")
 - (l) San Francisco Environment Code Section 2504-2405
 - (m) San Francisco Health Code Article 22B – Construction Dust Control Requirements
 - (n) San Francisco Police Code, Article 29, Ordinance #274-72 ("Noise Ordinance")
 - (o) San Francisco Public Works Code, Article 2.4 ("Excavation in the Public Right-of-Way")
 - (p) San Francisco Public Works Code, Article 4.1 ("Sewer Use Ordinance")
 - (q) San Francisco Public Works Code, Article 4.2 ("Sewer System Management Ordinance")
 - (r) San Francisco Public Works Code, Ordinance #19-92 ("San Francisco Industrial Waste Ordinance").
 - (s) San Francisco Public Works Code Ordinance #175-91, Sections 1100-1107
 - (t) San Francisco Public Works Code, Ordinance No. 260-13, ("Construction site Runoff Ordinance")
 - (u) San Francisco Public Works Dust Control Order (Order No. 171,378)
 - (v) San Francisco Public Works Order No. 158170, ("Wastewater discharges into the City sewerage system").
 - (w) San Francisco Industrial Waste Ordinance No. 116-97 (Chapter X (Public Works Code), Part II,
 - (x) San Francisco Public Works Order No. 1581-70 for wastewater discharges into the City's sewerage system.
 - (y) Requirements for Batch Wastewater Discharges from the San Francisco Public Utilities Commission, Waste Water Enterprise (SFPUC-WWE).
- C. The City will inspect and monitor Contractor's adherence to the requirements specified herein and will report on Contractor's compliance.
- 1. Said inspection, monitoring, and reporting activities may include, but are not limited to, qualitative, quantitative and photographic observations and data collection on the impacts of noise, vibration, air quality, traffic, street pavement damage, water quality, cultural resources, biological resources, and hazardous materials.
 - 2. Contractor shall cooperate with such inspection and monitoring activities, provide access to the Work site to establish and secure monitoring stations, and make its facilities and records available to the City for performing such monitoring.
 - 3. The City will issue a Non-Compliance Notice to Contractor for any detected non-compliance with the provisions herein or of any environmentally objectionable acts and the corrective action to be taken.

D. Accountability and Remedial Action

1. Contractor shall be held responsible for any damage resulting from Contractor operations, to natural vegetation, wildlife, cultural resources, waters of the State and of the United States and water quality, and any other environmental resources located either:
 - (a) Outside the Work areas permitted in the Contract Documents or
 - (b) Within Environmentally Sensitive Areas as per 3.7 of this section.
2. For the monetary consequences of failures to comply with this section, including but not limited to those resulting in monetary fines, requirements for restoration of or compensation for damage, additional environmental training, and/or project delays and/or stoppage of work, any and all costs or fines shall be paid by contractor.

1.6 PROJECT CONDITIONS Project IS a major construction project as defined at 1.3(A)(20) above; IS within a sensitive receptor as defined at 1.3(A)(31) above; Part of this project (Paul Avenue and Salinas Avenue ARE in an Air Pollution Exposure Zone as defined at 1.3(A)(1) above, and ARE within 100 feet of a school zone. (See 3.1(D) and 3.1(E) Air Quality of this section.)

- B. The project WILL NOT grade or excavate more than one-half acre surface area at any given time, and the project IS within 1,000 feet of a sensitive receptor as defined at 1.3(A)(31) above. (See 3.1(C) Air Quality of this section.)
- C. The project DOES NOT INCLUDE construction or demolition activity disturbing 5,000 square feet or more of the ground surface, measured cumulatively, including any land-disturbance as defined at 1.3(A)(19) above. (See 3.2(A) Water Quality of this section.)
- D. The project DOES NOT FALL within the Municipal Separate Storm Sewer System (MS4) area as mapped by the San Francisco Public Utilities Commission, and includes land disturbance of one or more acres of soil, either as a single project or as part of a larger common plan of development. (See 3.2(B) Water Quality of this section.)
- E. The project site(s) DO NOT INCLUDE areas under the jurisdiction of the Port of San Francisco. (See 3.2(C) Water Quality of this section.)
- F. The project DOES NOT include the removal or pruning of trees, and/or DOES NOT include exterior work on buildings, and/or DOES NOT include construction on bridges. (See 3.5 Bird Protection of this section.)
- G. Project INCLUDES soil disturbing activities below a depth of two feet below grade surface. (See 3.9(C) Archaeological and Paleontological Discovery of this section.)
- H. The project DOES NOT include the disturbance by construction and grading unassociated with roadway construction and maintenance of soils known to contain naturally occurring asbestos exceeding one acre. (See 3.1(B)(11) Air Quality of this section.)
- I. The project DOES include the disturbance, by construction and grading associated with roadway construction and maintenance, of soils known to contain naturally occurring asbestos. (See 1.4(J) of this section.)
- J. The project or a portion of the project IS NOT within the boundaries of an area of particular archaeological sensitivity and DOES NOT include land disturbance below two

feet of the existing soil surface in such area. (See 3.9(A) Archaeological and Paleontological Discovery of this section.)

K. Project Weather-Condition Monitoring

1. Contractor shall monitor the National Weather Service forecast daily for forecasts of a rain event.

1.7 SEQUENCING

- A. Preconstruction survey: When applicable, the preconstruction surveys to inspect for the presence of nesting birds shall be done 3 days before the commencement of construction activities.
- B. When applicable, surveys to determine the continuing presence of bats in trees to be trimmed or removed shall be conducted three days prior to any tree removal or trimming.
- C. When applicable, prior to start of construction, Contractor shall conduct a meeting with the City Representative to review the results of nesting surveys and determine protective measures. Contractor shall notify the City Representative at least 10 working days before convening meeting.
 1. Conduct meeting at Project site to comply with requirements in Section 01 31 19 "Project Meetings."
- D. In advance of construction, Contractor shall photograph all catch basins within the limits of work. Each catch basin shall have at least two photos, one from the top view and one from the side view along the flow line.
- E. Submittals shall be submitted in accordance with the sequencing requirements of 1.4 of this section.
- F. When applicable, in advance of construction, Contractor shall distribute "ALERT" sheet.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Materials necessary to prevent construction debris from entering the sewer system.
- B. For projects with a SWPPP or an ESCP, materials necessary for the implementation of construction-stormwater BMPs as specified in the SWPPP or ESCP.
- C. For projects doing work affecting trees or bridges during nesting season and/or bat-roosting season, bird-exclusion netting, or other exclusion devices.
- D. Materials necessary for compliance with the Noise Control Program.
- E. Materials required for compliance with all measures under this Section.
- F. Signage as required.
- G. For projects with Environmentally Sensitive Areas indicated on the project plans, materials to be used for protection of Environmentally Sensitive Areas.

PART 3 - EXECUTION

NOTE: The Contractor is directed to 1.6 PROJECT CONDITIONS for determinations of project conditions that in turn determine which conditional requirements of this section apply. "Feasible" as used in the section is defined above at 1.3(A)(16) of this section.

3.1 AIR QUALITY

- A. Contractor shall apply the following emissions controls:
 - 1. Contractor shall ensure that all equipment is tuned and maintained in accordance with the manufacturer's specifications.
 - 2. Contractor shall prohibit idling of motors when equipment is not in use or when trucks are waiting in queues. The idling time of all construction equipment used at the site shall not exceed 5 minutes.
 - 3. Contractor shall limit the hours of operation of heavy-duty equipment and/or amount of equipment in use to what is needed.
 - 4. When feasible, alternative fuel or electrical construction equipment shall be used at the project site.
- B. The Contractor shall ensure no visible dust, as defined in 1.3(A)(38) of this section, is generated through construction.
 - 1. Contractor shall clean up spillage on City streets, whether directly or indirectly caused by Contractor's operations. All visible mud or dirt track-out from areas of land disturbance onto adjacent City streets shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
 - 2. Minimize to the extent feasible the amount of excavated material or demolition wastes stored at the site. Remove demolition debris from the site no later than the end of each workday.
 - 3. Contractor shall keep the site and adjacent areas clean and perform wet sweeping at the end of each shift.
 - 4. Contractor shall perform continuous water spraying during dust generating activities. Mist or spraying shall be conducted in such a way as to prevent puddling or generation of runoff. Contractor shall mist any immediate area of demolition with a water spray to prevent airborne dust particles.
 - 5. Wet all exposed soil surfaces at least three times daily during dry weather or more frequently if dust is blowing or if required by the City.
 - 6. Whenever feasible, Contractor shall use reclaimed water for dust control activities.
 - 7. Contractor shall use dust enclosures, curtains, and dust collectors to control dust.
 - 8. Contractor shall load haul trucks, hauling debris, soils, sand or other such materials so that the material does not extend above the walls or back of the truck bed. Contractor shall wet each load before covering and tightly cover the surface of each load before the haul truck leaves the loading area.
 - 9. Contractor shall limit vehicle speed limit on unpaved roads to 15 miles per hour (mph).
 - 10. Contractor shall cover any inactive (no disturbance for more than seven days) stockpiles greater than ten cubic yards or 500 square feet of excavated

- materials, backfill material, import material, gravel, sand, road base, and soil with a 10 mil (0.01 inch) polyethylene plastic or equivalent tarp and brace it down, or use other equivalent soil stabilization techniques as approved by the City Representative.
11. These dust-control measures are adequate for addressing the asbestos state airborne toxic control measure (California Code of Regulations Title 17, Section 93105) for disturbance of naturally occurring asbestos (NOA) through roadway construction and maintenance, and through other construction and grading of less than one acre of soils containing NOA.
- (a) For management of dust related to disturbance of NOA through construction and/or grading not conducted for the purposes of roadway construction and maintenance of more than one acre of soils containing NOA, refer to applicable Divisions 01 and 02 Hazardous Materials related specifications.
- (b) If the project includes the disturbance, by construction and grading associated with roadway construction and maintenance, of soils containing naturally occurring asbestos, contractor shall submit the Bay Area Air Quality Management District's (BAAMQD) "Notification Form for Road Construction and Maintenance Operations" to BAAMQD fourteen business days in advance of land disturbance of soils containing NOA.
- C. If the project grades or excavates more than one-half acre surface area at any given time, and the project is within 1,000 feet of a sensitive receptor, Contractor shall submit a site-specific dust control plan for the review and approval by the San Francisco Health Department. Construction, demolition, excavation, grading, foundation work, or other permitted activities may not commence until Contractor has submitted to the City Representative a copy of the Department of Public Health's (DPH) written approval of the dust control plan.
1. In the event that monitoring is required as part of the dust-control plan, Contractor's attention is directed to the Department of Public Health's handout "Monitoring Guidelines for SFHC Article 22B".
- D. If the project is a Major Construction Projects that is not located in the Air Pollutant Exposure Zone and is within 1,000 feet of a sensitive receptor, the following requirements apply:
1. All off-road equipment shall be fueled by biodiesel fuel grade B20 and have engines that (a) meet or exceed either United States Environmental Protection Agency or ARB Tier 2 off-road emission standards, and (b) have been retrofitted with an ARB Level 3 VDECS. Equipment with engines meeting Tier 4 Interim or Tier 4 Final off-road emission standards automatically meet this requirement. See paragraph 3.1G below regarding the waiver procedure for this requirement.
2. Where access to alternative sources of power is available as determined by the City Representative, use of portable diesel engines to perform work on the project shall be prohibited.
3. Diesel engines, whether for off-road or on-road equipment, shall not be left idling for more than two minutes at any location, except as allowed for in applicable state regulations regarding idling for off-road and on-road equipment (e.g., traffic conditions, safe operating conditions). If within 100 feet of a school zone idling times shall be limited to 30 consecutive seconds. The Contractor shall post legible and visible signs, in English, Spanish, and Chinese, in designated queuing areas and at the construction site to remind operators of the idling limit. Refer to the following link for the Clean Construction Sign Template:
<https://www.sfdph.org/dph/EH/Air/CleanConstruction.asp>.

4. The Contractor shall instruct construction workers and equipment operators on the maintenance and tuning of construction equipment and require that such workers and operators properly maintain and tune equipment in accordance with manufacturer specifications.
- E. Construction Emissions Minimization Plan: If the project is a Major Construction Project that is located in the Air Pollutant Exposure Zone and is within 1,000 feet of a Sensitive receptor, the following requirements apply:
1. Before starting on-site Construction Activities, the Contractor shall submit a Construction Emissions Minimization Plan ("Emissions Plan") to the City Representative for review and approval. (See paragraph 1.4B of this section.)
 2. Waivers
 - (a) Waivers for off-road equipment:
 - (i) The Contractor may request to waive the equipment requirements if: (a) a particular piece of off-road equipment with an ARB Level 3 VDECS is technically not feasible; (b) the equipment would not produce desired emissions reduction due to expected operating modes; (c) installation of the equipment would create a safety hazard or impaired visibility for the operator; or, (d) there is a compelling emergency need to use off-road equipment that is not retrofitted with an ARB Level 3 VDECS.
 - (ii) Contractor shall submit a waiver request to the DPH Head, or designee, no less than two weeks prior to the planned use of a specific piece of off-road equipment.
 - (iii) If the DPH Head, or designee, grants the waiver the Contractor must use the next cleanest piece of off-road equipment, according to the table directly below:

Off-Road Equipment Compliance Step Down Schedule*		
Compliance Alternative	Engine Emission Standard	Emissions Control
1	Tier 2	ARB Level 2 VDECS
2	Tier 2	ARB Level 1 VDECS
3	Tier 2	Alternative Fuel**
* If the City determines that the equipment requirements cannot be met, the Contractor must meet Compliance Alternative 1. If the City determines that the Contractor cannot supply off-road equipment meeting Compliance Alternative 1, then the Contractor must meet Compliance Alternative 2. If the City determines that the Contractor cannot supply off-road equipment meeting Compliance Alternative 2, then the Contractor must meet Compliance Alternative 3. ** Alternative fuels are not a VDECS.		

- (iv) The DPH Head, or designee, may waive the alternative source of power requirement if an alternative source of power is limited or infeasible at the project site. If the City grants the waiver, the Contractor must submit documentation that the equipment used for onsite power generation meets the requirements of this subsection.

3.2 WATER QUALITY

- A. If the project includes construction or demolition activity disturbing 5,000 square feet or more of the ground surface, measured cumulatively, including any land-disturbing activities, Contractor shall obtain a Construction Site Runoff Control Permit obtained from the San Francisco Public Utilities Commission (SFPUC), which requires the submittal to the SFPUC of an Erosion and Sediment Control Plan (ESCP).
- B. If the project falls within the Municipal Separate Storm Sewer System (MS4) area as mapped by the San Francisco Public Utilities Commission, and includes land disturbance of one or more acres of soil, either as a single project or as part of a larger common plan of development as determined by the City Representative, the Contractor must provide a Storm Water Pollution Prevention Plan (SWPPP) prepared by a certified Qualified SWPPP Developer (QSD) that must be approved by the City Representative before the start of construction.
- C. For work in areas under the jurisdiction of the Port of San Francisco, Contractor shall adhere to the provisions of the State General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit Order 2009-0009-DWQ), and the Port of San Francisco's Stormwater requirements.
- D. The Contractor shall implement the requirements of any project ESCP, SWPPP, and/or General Permit Order in advance of construction and maintain these requirements until the completion of construction activities.
- E. For all projects, all measures specified below shall apply:
 - 1. Drainage Protection
 - (a) Contractor shall be responsible for protecting and keeping in operation all storm water inlets and catch basins throughout the entire project site for the duration of the project until final acceptance.
 - (b) In advance of construction, Contractor shall photograph all catch basins within the limits of work. Each catch basin shall have at least two photos, one from the top view and one from the side view along the flow line.
 - (c) Contractor shall provide labor and materials necessary to prevent debris from entering the sewer system.
 - (d) Contractor shall prevent construction material, pavement, concrete, earth, paints, thinner, solvents and other debris or toxic material from entering the sewer structure, including surface flow collection systems such as catch basins and culverts.
 - (e) Prior to the final inspection for acceptance, Contractor shall remove the catchbasin and inlet protection and clean the catchbasins and inlets.
 - 2. Wastewater Discharges and Disposal
 - (a) Contractor is permitted to discharge runoff and dewater into the City's combined sewer system only if Contractor submits and obtains approval of a SFPUC sewer discharge permit.
 - (b) Contractor shall be responsible for obtaining and paying for all water discharge permits and for paying all sewer service charges, penalties and other incidental fees and expenses resulting from discharging wastewater into the City's sewerage system by Contractor's operations in a timely manner. The City shall not honor any claims from Contractor arising from delays in obtaining the sewer discharge permit.
 - 3. Wastewater Contamination

- (a) Should the existing wastewater be uncontaminated, and subsequently become contaminated due to Contractor's operations, all costs related to satisfactory cleanup and disposal shall be the responsibility of Contractor. Such costs shall include, but not be limited to, re-design, re-construction, pretreatment and, sewer service permit and usage fees costs.
- (b) Should the existing wastewater be contaminated, or should it be uncontaminated but subsequently become contaminated due to conditions other than Contractor's operations, a Change Order shall be issued as provided in Article 6 of the General Conditions for additional costs or time extension shall be granted as provided in Article 7 of the General Conditions to pretreat the contaminated water prior to routing the flow into the sewer system or other approved disposal at the direction of the City.

4. Spill Prevention and Control

- (a) Contractor shall assign and train spill-response personnel, who shall address spills and leaks immediately.
- (b) Provide spill cleanup material on site to adsorb, remove and contain any spill or releases from leaving the active work area and entering into any storm drain or sewer inlet.
 - (i) Spill cleanup equipment shall include absorbent socks, over pack drums, personal protective equipment, shovel, labels, valves, valve charts, valve wrenches to shut off water supply, etc.
- (c) On-site vehicles must be monitored for leaks; inactive equipment must be stored with drip pans to contain any fluid leaks. Drip pans containing oil must be drained into waste oil drums on a regular basis.
- (d) Place all equipment or vehicles, which are to be fueled, maintained or stored in a designated area fitted with functional leak-containment measures.
- (e) Dispose of spent cleanup materials at a California-permitted waste-disposal facility. Leaked materials that constitute hazardous waste shall be disposed of in accordance with applicable hazardous materials specifications.
- (f) Containers must remain closed at all times except when transferring contents. Heavy containers (in excess of 60 lb.) of oil or hazardous material shall not be moved by a single unassisted worker unless the worker employs a drum dolly.
- (g) Funnels, pumps with closed hose systems, or other means shall be used to prevent spills while transferring material from large containers to small ones. Pumps in operation shall not be left unattended.
- (h) Contractor's designated Project Safety Officer shall immediately be alerted to of any spill occurring in the work area. It is the responsibility of Project Safety Officer direct the cleanup activities and contact the City Representative immediately.
- (i) Contractor is responsible for recording all steps taken to control spills in the field notes/daily log.

3.3 TRAFFIC

- A. Where traffic and/or pedestrian circulation may be affected by project construction, Contractor shall implement traffic control measures to maintain traffic and pedestrian circulation on streets affected by construction of the project.

1. The measures shall, at a minimum, be consistent with the Requirements of San Francisco Municipal Transportation Agency (SFMTA)'s Regulations for Working in San Francisco Streets ("Blue Book").
 2. Control measures may include, but not be limited to, flaggers and/or construction warning signage of work ahead; scheduling truck trips during non-peak hours to the extent feasible; and maintaining access to driveways, private roads, and off-street commercial loading facilities by using steel trench plates or other such method.
 3. Any traffic-management plans accepted by Public Works for this project take precedence over the traffic provisions of the Standard Construction Measures (SCM-4).
- B. Contractor shall ensure provision for parking management and spaces for all construction workers to ensure construction workers do not park in on-street spaces.

3.4 NOISE CONTROL

- A. Contractor shall not operate any powered construction equipment, with the exception of impact tools and equipment, if the operation of such equipment emits noise at a level in excess of 80 dBA when measured at a distance of 100 feet from such equipment.
- B. Impact tools and equipment shall have intake and exhaust mufflers recommended by the manufacturers thereof and approved by City Representative, and that pavement breakers and jackhammers shall also be equipped with acoustically attenuating shields or shrouds recommended by the manufacturers thereof and approved by the City Representative.
- C. Contractor shall pay all fines for Contractor's violations of the San Francisco Noise Ordinance, at no additional cost to the City.
- D. Monitoring
1. The City, at its own discretion, may monitor construction noise as part of the environmental monitoring process. When noise levels exceed the noise limits in 3.4 of this section, Contractor shall stop work or place restrictions on construction operations to further limit the noise as directed by the City.
 2. Contractor shall not resume the work before correcting the conditions that cause excessive noise as deemed acceptable by the City Representative.
- E. Night Noise
1. Contractor shall not perform work between the hours of 8:00 p.m. and 7:00 a.m. of the following day if the noise level created thereby is in excess of the ambient noise level by 5 dBA at the nearest property line, unless approved by the City Representative and unless a noise permit for such work has been obtained pursuant to the Police Code Section 2908.
 2. The use of vehicles for night work that are legally required to be equipped with backing warning alarms shall be reduced to the extent feasible for night work, and administrative controls as defined in the California Code of Regulations, Title 8 Sec. 1592 shall be used for worker protection for backing movements by other vehicles.
 3. If Contractor is directed in the Contract Documents or by special written notice from the City Representative to perform any part of the work between the hours of 8 p.m. and 7 a.m. or on weekends or holidays, Contractor must obtain and comply with a City noise permit prior to starting any work. Contractor must apply

for City noise permits through the City Representative at least 3 working days in advance of night (i.e., between 8:00 p.m. and 7:00 a.m.), weekend, and holiday work. The requirements of the Contract Documents, including safety requirements, shall apply for all night, weekend, and holiday work performed. The noise permit shall be obtained from and approved by Bureau of Street Use and Mapping, 49 South Van Ness Avenue, Suite 200, San Francisco, CA 94103.

3.5 BIRD AND BAT PROTECTION

- A. Contractor is advised that it is unlawful under the California Fish and Game Code at §3503 to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by California Code.
- B. Contractor is advised that it is unlawful under the California Fish and Game Code at §3503.5 to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by California Code.
- C. This subsection © applies only to projects that include the removal or pruning of trees, and/or exterior work on buildings, and/or construction on bridges.
 - 1. Inspection for bird/nests and bats/roosting habitat during bird nesting season:
 - a) If work shall be performed during bird nesting season (February 15 through August 31), a Qualified Biologist must be obtained by Contractor to provide a pre-construction survey for the trees to be affected during construction work.
 - b) If work shall be performed during bat-roosting seasons (April 16 through August 30 and/or October 16 through February 28), a Qualified Biologist obtained by Contractor shall conduct a habitat assessment of the project area for potentially suitable bat-roosting habitat, including within open expansion joints of bridges and in trees, within the time frames of March 1 to April 1 (for work to be performed April 16 through August 30) or August 31 to October 15 (for work performed October 16 through February 28) prior to construction activities.
 - 2. Bird Protection Measures
 - a) If active bird nests are identified by the Qualified Biologist, no work may occur at that tree or bridge and in the surrounding area:
 - i. For active nests found in trees, a 100-foot exclusion buffer of temporary fencing shall be erected around the tree with the active nest,
 - ii. For active nests found on bridges, a 100-foot exclusion buffer shall be established around the nest site, and no work may occur within the 100-foot buffer until the Certified Biologist has verified that young birds have left the nest and that active nesting has been completed.
 - iii. For any active nests containing raptor species, the exclusion buffer shall be 300-feet.
 - b) If Contractor finds an injured or dead bird or discover migratory or nongame bird nests that may be adversely affected by construction activities, immediately:
 - i. Stop all work within a 100-foot radius of the discovery.
 - ii. Notify the City Representative.

- c) Contractor shall perform one or a combination of the following protection measures as required to prevent further nesting by birds in trees or structures during project construction:
 - i. Install exclusion devices
 - ii. Use nesting-prevention measures
 - iii. Remove and dispose of partially constructed and unoccupied nests of migratory or nongame birds on a regular basis to prevent their occupation.

3. Bat Protection Measures

- a) If the habitat assessment required by 3.5.B(2) above is conducted on a bridge and reveals the bridge structure is suitable roosting habitat for bats, then the appropriate exclusionary measures will be implemented prior to bridge work during the period between March 1 to April 15 or August 31 to October 15.
 - i. Potential avoidance may include exclusionary blocking or filling potential cavities with foam, visual monitoring and staging Project work to avoid bats.
 - ii. If bats are known to use the bridge structure, exclusion netting shall not be used.
- b) If the habitat assessment required by 3.5.B(2) above is conducted on trees, and the assessment reveals suitable bat habitat in trees and tree removal is scheduled from April 16 through August 30 and/or October 16 through February 28, then presence/absence surveys shall be conducted two to three days prior to any tree removal or trimming.
 - i. If presence/absence surveys are negative, then tree removal may be conducted by following a two phased tree removal system.
 - ii. If presence/absence surveys indicate bat occupancy, then the occupied trees shall only be removed from March 1 through April 15 and/or August 31 through October 15 by following the two phased tree removal system.
 - iii. The two-phase system shall be conducted over 2 consecutive days. On the afternoon of the first day, limbs and branches are removed by a tree cutter using chainsaws or other hand tools. Limbs with cavities, crevices, or deep bark fissures are avoided and only branches or limbs without those features are removed. On the second day, the entire tree shall be removed.
- c) If bats are found during the roosting season, Contractor shall immediately cease work and notify the City Representative.
- d) No construction activities that in the opinion of the City representative may potentially disturb the bats may proceed until the City Representative provides specific notice to and consults with CDFW.
- e) Before proceeding with construction, Contractor shall incorporate impact-minimization measures as directed by the CDFW representative. These may include the construction and installation of bat boxes of a size and quantity sufficient in the view of the CDFW representative to accommodate the estimated on-site population of bats plus additional structures to account for population growth according to scientifically proven growth rates of the species occurring on site.

3.6 TREE CONSERVATION

- A. If trimming of roots greater than 2-inches in diameter is necessary during the course of construction, a Qualified Arborist provided by the contractor shall supervise the trimming of such roots.
- B. Pruning of trees shall be performed in conformance with the City of San Francisco Pruning Standards for Trees (June 27, 2006) (available at http://sfdpw.org/sites/default/files/FileCenter/Documents/234-SF_Pruning_Std_6.27approved.pdf), in coordination with the City's Bureau of Urban Forestry, and under the supervision of the qualified arborist.
- C. For trees to be retained on site or adjacent to the site, Contractor shall exclude grading, trenching, or placement of heavy equipment within the drip line of trees, unless approved by the City Representative. If approved by the City Representative, Contractor's arborist shall recommend and Contractor shall implement measures to protect the tree (e.g., protecting the roots from compaction). Contractor shall be responsible for replacing any damaged trees as directed by the City Representative.
- D. Disposal of Plant Material That Potentially Harbors Phytophthora
 - 1. This paragraph applies only to projects that involve grubbing or removal of trees and/or other vegetation.
 - 2. Contractor shall identify whether during the course of work plant species that may harbor Phytophthora shall be pruned or removed.
 - 3. Plants of species that may harbor Phytophthora shall be chipped on site and the chips spread at the location of the same trees and/or shrubs that produced the debris. This plant debris may not be used for any purpose at any other location.
 - 4. If spreading on site is not possible, materials shall be disposed of in landfill or at an industrial-scale composting facility. Contractor shall provide documentation of such disposal to the City Representative.
 - 5. For sites identified as potentially harboring Phytophthora, Contractor shall ensure that the following actions are performed:
 - (a) All workers scrape, brush, and/or hose off accumulated soil and mud from clothing, gloves, boots, and shoes before leaving the site.
 - (b) Mud and plant debris are removed by blowing out or power washing chipper trucks, chippers, bucket trucks, fertilization and soil aeration equipment, cranes, and other vehicles before leaving the site.
 - (c) Soil and mud are removed or washed off from on vehicle tires, boots, shovels, stump grinders, trenchers, etc., before use at another site.
 - (d) Tools used in tree removal/pruning are disinfected with Lysol® spray, a 70% or greater solution of alcohol, or a solution consisting of 1 part household bleach to 9 parts water before leaving the site.

3.7 ENVIRONMENTALLY SENSITIVE AREA (ESA)

- A. Contractor shall avoid areas shown on construction plans as being within an above-ground ESA. Contractor shall coordinate methods for avoidance intrusion into ESAs with the City Representative and provide written and/or photographic documentation of these methods on request of the City Representative.

3.8 CONSTRUCTION STAGING

- A. Contractor shall locate site construction staging areas away from public view and on paved or previously disturbed areas to the extent feasible.
- B. For night work, Contractor shall ensure that construction lighting shall be directed away from residential areas and have shields to prevent light spillover effects.
 - 1. Lighting systems with flood, spot, or stadium type luminaires shall be aimed downward at the work and rotated outward no greater than 30 degrees from nadir (straight down).
 - 2. When, in the opinion of the City Representative, the lighting is disturbing adjoining property, Contractor shall modify the lighting arrangement or add hardware to shield the light trespass.

3.9 ARCHAEOLOGICAL AND PALEONTOLOGICAL DISCOVERY

- A. Where the project or a portion of the project is within the boundaries of an area of particular archaeological sensitivity, as determined by the San Francisco Planning Department and noted and/or depicted on project plans, one of the following shall apply:
 - 1. If the project includes land disturbance below two feet of the top of existing soil in such area of particular archaeological sensitivity as noted and/or depicted on project plans, a City Representative or Specialty Environmental Monitor – archaeologist, provided by the City, shall be present during activities resulting in land disturbance to avoid any impacts to archaeological resources.
 - (a) Contractor shall be responsible for confirming that the required Specialty Environmental Monitor is on-site as required prior to performing said Work.
 - 2. If the project or a portion of the project is within the boundaries of an area of particular archaeological sensitivity, but does not include land disturbance below two feet in such area, potential below-ground archaeological resources shall be protected by a conceptual ESA (see 3.7 of this section) boundary at two feet below the top of existing soil and contiguous with the area depicted on plans of particular archaeological sensitivity. If this ESA boundary is breached, the contractor shall immediately:
 - (a) Stop all work within 50 feet of the ESA or action-plan boundary
 - (b) Secure the area
 - (c) Notify the City's Representative
- B. If potential archaeological resources are discovered at the site, the following procedures shall be instituted:
 - 1. Promptly report all subsurface archaeological finds to the City Representative.
 - 2. The City Representative shall issue a written order to suspend work in accordance with Paragraph 14.02 of the General Conditions directing Contractor to cease all construction operations only at the location of such potential cultural resources find.
 - 3. The City's archaeologist shall assess the significance of the find, and immediately report to the City Environmental Review Officer (ERO), who shall recommend specific additional avoidance and minimization measures as necessary to minimize potential effects on cultural resources, which may include additional site security, with which Contractor shall comply.

4. If human remains are encountered, all work in the area must halt and the San Francisco County Coroner must be contacted, pursuant to California Public Resources Code Sections 5097.98, and 5097.99.
- C. Any soil disturbing activities below a depth of two feet below grade surface shall be preceded by the distribution by Contractor of the San Francisco Planning Department archeological resource "ALERT" sheet to any project subcontractor (including demolition, excavation, grading, foundation, pile driving, etc. firms); or utilities firm involved in soil disturbing activities within the project site, and all field personnel, including machine operators, field crew, pile drivers, supervisory personnel, etc..
1. Following the distribution of the "ALERT" sheet, Contractor will provide City representative with a signed affidavit confirming that all field personnel have received copies of the "ALERT" sheet.
 2. The "Alert" sheet and affidavit are available for download at:
<https://www.sfpublicworks.org/services/project-manual-and-reference-documents>
- D. If unanticipated paleontological resources are discovered at the job site, do not disturb the resources and immediately:
1. Stop all work within a 50-foot radius of the discovery.
 2. Secure the area.
 3. Notify the City Representative. The City Representative shall investigate the discovery and modify the dimensions of the secured area if needed. The Contractor shall not move paleontological resources or take them from the job site. The Contractor shall not resume work within the radius of discovery until authorized.
- E. For Work suspensions as a result of a suspension under this subsection there shall be no compensation to Contractor for any delays up to a total of 20 working days due to the City's order to suspend Work. Cost or time impacts as a result of a suspension under this subsection longer than a total of 20 hours, or for additional avoidance and minimization measures, shall be resolved as provided in the General Conditions. Refer to Article 6 for Changes and Article 13 for Claims.

END OF SECTION