

Appendix A

Metropolitan Standard Practices

**SECTION 01065
ENVIRONMENTAL COMPLIANCE REQUIREMENTS**

Note to Specifier (NTS): *This Master Specification is not a “standard” specification but a baseline template to tailor for specific project needs. Ensure that editing is consistent with other contract documents.*

- 1. Revise text or numbers in brackets [].**
 - 2. If there is text that does not apply to the project, including optional text identified with a ★, delete the text and type “(Not Used)” next to the article heading. Do not delete article section headings.**
 - 3. Verify cross-references when adding or deleting any text.**
- Consult the Metropolitan discipline technical lead with any questions.**

NTS: *Ensure all CEQA mitigation measures and/or permit conditions which must be implemented by Contractor are covered in this section.*

NTS: *When using this section, include the following sections in the project specifications as applicable:*

01010, Summary of Work

01060, Safety and Regulatory Requirements

★01070, Storm Water Pollution Prevention Plan (SWPPP)

★01072, Water Pollution Control Plan (WPCP)

★01300, Submittals

★01530, Temporary Fences

★01550, Access, Parking, and Traffic

★01565, Noise Control

★02110, Clearing, Grubbing, and Stripping

★02140, Dewatering

PART 1 GENERAL

1.01 GENERAL

NTS: *Fill in all areas as appropriate or identify these areas on the drawings. ERAs/ESAs requirements must be project specific (e.g., Fenced? Flagged? Staked? Subject to EPS review).*

- A. Metropolitan holds the Contractor and all subcontractors liable for meeting the conditions stated herein and in all of Metropolitan’s permits and local, state, and federal environmental regulations, acts, laws, and ordinances.
- B. The Contractor shall obtain necessary local, state and federal environmental permits and shall comply with the requirements of all such permits and laws, regulations, acts, codes and ordinances. Metropolitan will provide Contractor with copies of all environmental permits obtained by Metropolitan.
- C. The Contractor shall perform all construction activities only within the construction boundaries shown on the drawings. [The construction boundaries shall be fenced as specified in this section [and Section 01530, Temporary Fences], unless otherwise directed by the Engineer.] The Contractor shall submit in writing a request to use any area outside the construction boundaries for any activity for authorization by the Engineer.
- D. ★The Contractor and all employees shall attend an Employee Orientation Meeting with the Engineer and Metropolitan’s designated environmental monitor. The Employee Orientation Meeting will inform all employees of the potential for encountering cultural resources; the sensitivity of the area in which they will be working; environmental measures and requirements; the prevention of harm, harassment, injury, or death of wildlife; and minimization or avoidance measures for sensitive resources.

- E. ★ The Contractor shall notify the Engineer two weeks prior to any activity within 500 feet of Environmentally Sensitive Areas (ESAs) or Environmental Restricted Areas (ERAs). The Contractor shall notify the Engineer of all proposed activities within ESAs to ensure compliance with all conditions and mitigation measures. The Engineer will, or the Contractor shall as directed by the Engineer, flag or stake the limits of ESAs/ERAs. The Contractor shall fence the ESAs/ERAs limits, as required by the Engineer.
- F. ★ Metropolitan is responsible for contracting any environmental monitors, mitigation monitors, qualified biologists, qualified archaeologist, qualified paleontologist, or qualified architectural historians required under this specification.

1.02 SUBMITTALS

- A. ★ Submittals shall be in accordance with Section 01300, Submittals, and this section.
- B. ★ Action Submittals
 - 1. ★ All environmental or otherwise applicable permits procured by the Contractor.
 - 2. A current copy of each construction vehicle's certified tier specifications and Best Available Control Technology (BACT) documentation.
 - 3. Annual copies of the CARB Certificate of Reported Compliance for the Off-Road Diesel Vehicle and Advanced Clean Fleet Regulations.
 - 4. ★ All local air quality management district permits or CARB certifications for equipment and vehicles being used by the Contractor.
 - 5. ★ Noise Control Plan: The plan shall address requirements specified in this section[and Section 01565, Noise Control].
 - 6. ★ Rideshare Plan: A Rideshare Plan for construction employees shall be developed and implemented. The trip reduction plan shall be applicable during the full term of the contract. The trip reduction plan must include rideshare and transit incentives for construction personnel. The plan shall address requirements specified in this section[and Section 01550, Access, Parking, and Traffic].

1.03 SITE ACTIVITIES

NTS: Review and coordinate with Section 02110 to ensure project specific conditions are included (i.e., stripping depth).

- A. ★ The Contractor shall clear, grub, and strip construction areas as specified in Section 02110, Clearing, Grubbing, and Stripping.
- B. ★ Staging, stockpiling, and storage areas for vehicles, equipment, and material shall be located outside of any surface water body, drainage channel, [★or ESAs/ERAs].
- C. ★ The Contractor shall not enter or drive through any surface water body, drainage channel, [★or ESAs/ERAs], unless noted otherwise.
- D. ★ No debris, soil, silt, sand, bark, slash, sawdust, asphalt, rubbish, paint, oil, cement or concrete or washings thereof, oil or petroleum products, or other organic or earthen materials from construction activities, including stockpiles, shall be allowed to enter into or placed where it can be washed into any surface water body, drainage channel, [★the Colorado River Aqueduct (CRA),] [★or ESAs/ERAs].
- E. ★ The Contractor shall implement measures to prevent debris, dust, liquid, and other objects from falling into the water while working over or near water surfaces.
- F. ★ No excess materials, rubbish, or debris shall be deposited within [choose appropriate project-specific distance] feet of any surface water body or drainage channel [★or ESAs/ERAs].

NTS: Use the following paragraph only for desert locations.

- G. ★ No excess materials, rubbish, or debris shall be deposited within 300 feet of the CRA.
- H. ★ No fueling or maintenance shall be done within [choose appropriate project-specific distance] feet of any surface water body or drainage channel [★or ESAs/ERAs] or where petroleum products or other pollutants may enter these areas under any flow.

NTS: Use the following paragraph only for desert locations.

- I. ★ No fueling or maintenance shall be done within 500 feet of natural drainage swales or the CRA or where petroleum products or other pollutants may enter these areas under any flow.
- J. ★ Any equipment or vehicle to be driven and/or operated within a surface water body, drainage channel, or drainage swale shall be checked and maintained daily to prevent leaks of materials.
- K. Stationary equipment such as motors, pumps, and generators, shall be equipped with drip pans, which are secured to prevent shifting or overturning in the event of high winds.
- L. ★ The Contractor shall dispose of excess materials, debris, and rubbish in approved off-site locations consistent with the requirements of issued disposal permits and applicable local, state, and federal laws and regulations.
 - 1. The Contractor is responsible for obtaining all environmental permits and submitting them to the Engineer for authorization prior to site preparation or disposal of the materials at the approved off-site location.
 - 2. Permission of property owner does not preclude the Engineer from rejecting a disposal site.
- M. The Contractor shall dispose of all hazardous materials in accordance with Section 01060, Safety and Regulatory Requirements.
- N. The Contractor shall handle, store, apply, and dispose of chemicals and/or herbicides consistent with all applicable federal, state, and local regulations.
- O. The Contractor shall clean up all spills in accordance with all applicable environmental laws and regulations and notify the Engineer immediately in the event of a spill.
- P. Unless otherwise shown on the drawings, the Contractor shall return all Contractor yard and laydown areas to the original topographic conditions.
- Q. ★ The Contractor shall stabilize exposed slopes, streambeds, and streambanks that are located within the construction limits.
- R. The Contractor shall not create a nuisance or pollution as defined in the California Water Code. The Contractor shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Regional Water Quality Control Board or the State Water Resources Control Board, as required by the Clean Water Act.
- S. ★ Dewatering activities (e.g., for nuisance water or groundwater) shall not affect any vegetation outside of the construction limits. Dewatering shall be in accordance with Section 02140, Dewatering.
- T. ★ The Contractor shall ensure that vehicles and equipment brought on-site shall be decontaminated in accordance with federal and state publications for controlling the spread of noxious weeds, invasive species, and disease, which includes inspecting all vehicles, tools, boots, and other project-related equipment, and removing all visible soil/mud, plant materials, and animal remnants prior to entering and exiting the project site. Rules and guidelines are available at: <https://www.fs.fed.us/eng/pubs/pdf/05511203.pdf>
 - 1. The Contractor shall complete the Certification of Clean Equipment prior to any vehicles or equipment entering the project site (see Attachment A).
 - 2. The Contractor shall decontaminate all tools, boots, and other equipment prior to entering and exiting the project site and/or between each use at different sites to avoid the introduction and transfer of organisms between locations.
 - a. The Contractor shall decontaminate project gear and equipment by thoroughly scrubbing equipment, especially small crevices such as bootlaces, seams, net corners, etc., with a stiff-bristled brush to remove all organisms. Guidelines are available at: <https://www.cal-ipc.org/docs/bmps/dd9jwo1ml8vttq9527zjhek99qr/BMPsTransportUtilityCorridors.pdf>
 - 3. The Contractor shall power-wash all vehicles and equipment prior to entering the project site.
 - a. Power-washing vehicles includes washing all mud and debris on and under the vehicle (powertrain), bumpers, and especially, tires. Guidelines are available at: <https://www.cal-ipc.org/docs/bmps/dd9jwo1ml8vttq9527zjhek99qr/BMPLandManager.pdf>

- b. The Contractor shall repeat the decontamination process and re-certify a vehicle or piece of equipment if it has been removed from the site, used at a different site then later returned to the project site, or as deemed necessary by the Engineer.

NTS: Consult with Safety and Regulatory Services (SRS) for requirements in below article.

1.04 AIR POLLUTION CONTROL

- A. ★ The Contractor shall not discharge smoke, dust, or other air contaminants into the atmosphere in a quantity that is greater than 20% opacity (Ringlemann 1) for more than 3 minutes in a 1-hour time period as required by [SCAQMD/MDAQMD Rule 401].
- B. The Contractor shall use renewable diesel (R99 or R100) for all construction vehicles and equipment as required by CARB where feasible. The Contractor must demonstrate that renewable diesel is not available through normal fueling mechanisms for the Engineer's authorization to use ultra-low sulfur diesel (ULSD). [Include additional mitigation measures required by CEQA.]
- C. ★ The Contractor shall use low emission mobile construction equipment during site preparation, grading, excavation, and construction of the project.
- D. The Contractor shall not idle the vehicle primary diesel engine for greater than 5 minutes at any location, except as allowed by CARB regulation: Title 13 CCR, Division 3, Chapter 10, Section 2485.
- E. Construction equipment shall be maintained, and properly tuned and operated in a manner to reduce peak emission levels.
- F. Dust Control
 1. The Contractor shall provide effective measures to prevent operations from producing dust in amounts damaging to personnel, property, Metropolitan plant operations, plants, or animals, and to prevent causing a nuisance to persons living or occupying buildings in the vicinity.
 2. Construction methods shall include dust reduction activities, including the use of water trucks in construction areas dust suppressants, and track-out control devices (e.g., gravel and tire cleaning grids).
 3. The Contractor shall spray water as often as required to minimize dust and particulates or apply a dust inhibiting surface treatment to avoid production of dust as determined by the Engineer in areas used as construction roads or other purposes in connection with the work.
 - a. The Contractor shall continuously maintain this surface condition during the entire construction period.
 - b. The Contractor's construction facilities shall be operated in a manner ensuring minimum dust production.
 - c. The Contractor shall water or mist soil as it is being excavated and stockpiled or loaded onto transportation trucks.
 4. Paved streets shall be swept if silt is carried onto these roads from construction activities. Track-out shall not extend greater than 25 feet cumulatively in any direction.
 5. The Contractor shall cover or moisten with water trucks transporting soil or debris to suppress the dispersion of dust.
 6. The Contractor shall cover all trucks transporting earthen material or maintain at least 2 feet of freeboard.
- G. The Contractor shall use existing onsite power sources (e.g., power poles) rather than portable generators when feasible; or clean fuel generators shall be used rather than temporary generators powered by fossil-fuel when feasible. If a portable generator is powered by an engine rated over 50 bhp, it shall be CARB registered or permitted by the local air district.
- H. The Contractor shall use 2010 model year engines or 2010 model year equivalent emissions engines on diesel haul trucks, where available. At a minimum, the Contractor shall use engines that adhere to the CARB Truck and Bus Regulation: Title 13 CCR, Division 3, Chapter 1, Article 4.5, Section 2025.

NTS: Use following paragraph if mitigation measures are required under CEQA.

- I. ★ All off-road diesel-fueled construction vehicles greater than 25 horsepower (hp) shall be compliant with federally mandated clean diesel engines emissions (US Environmental Protection Agency Tier 4), where available. [Include additional mitigation measures required by CEQA.]

- J. All off-road diesel-fueled construction vehicles shall be in accordance with CARB's In-use Off-road Diesel-fueled Fleet Regulation: Title 13 CCR, Division 3, Chapter 9, Article 4.8.
1. The Contractor shall submit a current copy of each construction vehicle's certified tier specifications, BACT documentation, or the CARB Certificate of Reported Compliance Off-Road Diesel Vehicle Regulation and be labeled with the CARB issued Equipment Identification number (EIN).
- K. All portable engines greater than 50 hp and equipment shall be compliant with CARB's Portable Equipment Registration Program (PERP) Regulation: Title 13 CCR, Division 3, Chapter 9, Article 5; the Portable Engine Air Toxics Control Measures of Title 17 CCR, Division 3, Chapter 1, Subchapter 7.5, Section 93116; and local air district rules.
1. All applicable equipment must have valid CARB registrations or local air quality management district permits.
- L. ★ The Contractor shall notify the local air district in accordance with the CARB PERP Regulations specified timeframes for any construction projects that have fleets of PERP engines that exceed 2,500 combined hp or greater and if units are scheduled to be onsite for more than 5 days.
1. The Contractor shall ensure that project Particulate Matter (PM) emissions shall not exceed more than 82 pounds per day as required by CARB regulations: CCR Title 13, Division 3, Chapter 9, Article 5, Sections 2455-2459.
- M. ★ For sites contaminated with Volatile Organic Compounds (VOCs) and/or toxic air contaminants, the Contractor shall follow all requirements of SCAQMD Rule 1166 for VOC Emissions from Decontamination of Soil and/or Rule 1466 for Control of Particulate Emissions from Soils with Toxic Air Contaminants, including but not limited, to providing authorized mitigation plans and conducting dust monitoring, and required notifications.
- N. ★ Traffic speeds on all unpaved roads shall be [20] mph or less as posted.

NTS: Delete Rule 403.1, if not within the Coachella Valley Blowsand Zone.

- O. The Contractor shall comply with [SCAQMD and/or MDAQMD] Rules 401 (Visible Emissions), 402 (Nuisance), and 403 (Fugitive Dust)[, and SCAQMD Rule 403.1 (Supplemental Fugitive Dust Control Requirements for Coachella Valley Sources)]. Copies of the Rules shall be kept at the site. Special attention shall be directed toward the following:

NTS: Delete if within MDAQMD.

1. ★ The Contractor shall not discharge from any source air contaminants (e.g., smoke or dust) which exceed the legal limits endanger, or cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public.

NTS: Delete if within MDAQMD. Delete Rule 403.1, if not within the Coachella Valley Blowsand Zone.

2. ★ The Contractor shall implement the Best Available Control Measures (BACM) listed in Table 1 of SCAQMD Rule 403[and Rule 403.1].
3. ★ The Contractor shall comply with the Large Operation requirements (50 or more acres of disturbed surface area or earth moving operations of 5,000 cubic yards/day for more than 3 days) which include but are not limited to notification to SCAQMD and use of BACM listed in Table 2 of SCAQMD Rule 403.

NTS: Delete if within MDAQMD. Delete Rule 403.1, if not within the Coachella Valley Blowsand Zone.

4. ★ When wind speeds, including instantaneous gusts, exceed 25 miles per hour, the Contractor shall implement and record Contingency Control Measures listed in Table 3 of SCAQMD Rule 403[and Rule 403.1].
- P. ★ For sites conducting abrasive blasting, only CARB certified abrasives shall be used. The abrasive blasting equipment shall possess a local air district permit or CARB registration. Blasting of any materials that may contain toxics shall be confined and be used in conjunction with a permitted negative air machine. The Contractor shall comply with the following opacity/Ringlemann limits based off activity:
1. Confined blasting--20% opacity/Ringlemann 1
 2. Unconfined blasting--40% opacity/Ringlemann 2

NTS: Delete if within MDAQMD.

- Q. ★ Any temporary batch plant located on site shall have the appropriate local air district operating permit. The operator of the plant shall use dust suppressants or other dust control measures at each source during loading, unloading, or transferring activities to limit fugitive dust emissions. These control measures shall apply to conveyors, crushing equipment, screening equipment, and storage piles. The operator shall comply with all requirements of SCAQMD Rule 1157.

NTS: Delete if within MDAQMD.

- R. ★ The Contractor shall use only approved asbestos removal procedures as identified in SCAQMD Rule 1403, including but not limited to, notification of the intent to conduct any demolition or renovation no later than 10 days prior to the activity.

NTS: Delete if within SCAQMD.

- S. ★ The Contractor shall complete the MDAQMD Asbestos Checklist (available at: ca.gov) and, as applicable, submit a Notification of Demolition/Renovation to MDAQMD 10 working days prior to the start of any demolition or renovation work. The Contractor shall adhere to all work practices as specified in the Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP), CFR Title 40 Part 61, Subpart M.

NTS: Use Article 1.05 for non-desert locations.

1.05 BIOLOGICAL RESOURCES

- A. As part of the project, the following procedures shall be implemented to avoid adverse impacts to sensitive biological resources, especially the **[identify sensitive species (e.g., coastal California gnatcatcher)]**.
1. ★ Prior to commencing construction or mobilization activities, a Metropolitan biologist will conduct a survey(s) to ensure avoidance of any sensitive resources during construction activities. Following the survey(s), Metropolitan may provide sensitive resource avoidance recommendations as appropriate. A Metropolitan biologist may be present onsite throughout the duration of the work at the discretion of Metropolitan to monitor all construction activities.
 - a. ★ The biologist will oversee compliance with protective stipulations for **[list sensitive species]**, as necessary.
 - b. The biologist shall be present when the Contractor establishes the construction limits as shown on the drawings and/or installs temporary fencing or other site boundary markers. All temporary fencing or other markers shall be clearly visible to construction personnel.
 - c. Prior to any construction or grading activities, the biologist will provide education to all project personnel regarding the prevention of harm, harassment, injury, or death of wildlife and minimization or avoidance of sensitive resources. The instruction shall be given as often as necessary to ensure that all personnel working on site are adequately briefed in the matter.
 - d. The biologist will be empowered to temporarily halt construction activities and make recommendations to ensure impact minimization, compliance with the relevant provisions of all environmental permits and regulations, and that work does not take place in habitat areas outside the clearing limits.
 - e. ★ No construction access, parking, or storage of equipment or materials is permitted within ESAs/ERAs, unless authorized by the Engineer.
 - f. The Contractor shall cover all open trenches when not in use at the end of each workday.
- B. ★ As part of the project, the following procedures shall be implemented to avoid adverse impacts to trees located within the project work limits:
1. ★ The Contractor shall avoid stockpiling of materials and driving or parking vehicles and equipment under the canopy of existing trees to protect tree root systems and avoid damage to the trees, where trees and work limits are not on concrete or asphalt.
 2. No trees within project work limits shall be removed, cut, or trimmed unless identified on the drawings, or authorized in advance by Metropolitan.
 - a. Per applicable local tree ordinances, required permits shall be obtained prior to any tree removal, cutting, or trimming.

3. Trees designated for removal shall be removed in accordance with the Migratory Bird Treaty Act and California Fish and Game Code §3503.

NTS: Use Article 1.06 for desert locations.

1.06 ★ BIOLOGICAL RESOURCES (DESERT LOCATIONS)

- A. As part of the project, the following standard operating procedures will be implemented to avoid adverse impacts to sensitive biological resources, especially the desert tortoise [and other sensitive species, as necessary].
 1. ★ Prior to commencing construction or mobilization activities, a Metropolitan biologist will conduct a survey(s) to ensure avoidance of any sensitive resources during construction activities. Following the survey(s), Metropolitan may provide sensitive resource avoidance recommendations as appropriate.
 2. A Metropolitan biologist may be present onsite throughout the duration of the work at the discretion of Metropolitan to monitor all construction activities.
 - a. The biologist will oversee compliance with protective stipulations for the desert tortoise [and other sensitive species, as necessary].

NTS: If other sensitive species are identified in addition to the desert tortoise, include any additional protective stipulations below, as necessary.

- b. Prior to commencing construction or mobilization activities, the biologist will survey for desert tortoise burrows or other desert tortoise sign at all work sites, including laydown and storage areas, and site access routes. Surveys shall be conducted according to the U.S. Fish and Wildlife Service document "Preparing for Any Action that May Occur Within the Range of the Mojave Desert Tortoise. Any desert tortoise burrows located during these surveys will be flagged and/or fenced to ensure avoidance during construction activities as specified in this section [and Section 01530, Temporary Fences].
- c. All Contractor's, subcontractors,' and suppliers' personnel who work onsite during construction shall participate in a desert tortoise awareness training program given by Metropolitan prior to being allowed to work on the site, which covers the following topics:
 - (1) Distribution, occurrence and habitat requirements of the desert tortoise in the southwestern United States,
 - (2) General behavior and ecology of the tortoise,
 - (3) Sensitivity to human activities,
 - (4) Legal protection,
 - (5) Penalties for violations of state or federal laws,
 - (6) Reporting requirements, and
 - (7) Project protective measures.
- d. The biologist shall be present when the Contractor establishes the construction limits shown on the drawings and any necessary access routes, and installs temporary fencing or other site boundary markers. All temporary fencing or other markers shall be clearly visible to construction personnel. Special habitat features, such as burrows, identified by the biologist shall be avoided.
- e. Access to the project sites shall be restricted to existing routes of travel as shown on the drawings, or as designated by the Engineer in the field. Driving off-road is prohibited at all times.
- f. Prior to commencing any dewatering operations, the biologist will survey the discharge water flow path to ensure that no desert tortoises are at risk from the discharge.
- g. All workers shall inspect for tortoises under vehicles or stationary equipment prior to moving them. If a desert tortoise is present, the worker shall carefully move the vehicle or equipment only when the desert tortoise would not be injured or shall wait for the desert tortoise to move away on its own.
- h. The Contractor shall cover all open trenches when not in use at the end of each workday.
- i. Dogs or any other pets or animals shall not be allowed in any work area.

- j. All trash and food items shall be promptly contained within closed, raven-proof containers and regularly removed from the site to reduce the attractiveness of the area to wildlife, especially ravens, and other tortoise predators.
- k. The biologist will be empowered to temporarily halt construction activities and make recommendations to ensure impact minimization, compliance with the relevant provisions of all environmental permits, and that work does not take place in habitat areas outside the clearing limits.

NTS: Use the following if there are ESAs/ERAs.

- l. ★ The Contractor shall not allow access, parking, or storage of equipment or materials within ESAs and ERAs unless authorized by the Engineer.
 - B. Traffic speed limit shall be [20] miles per hour on all unpaved roads. The purpose of this speed limit is to enable drivers sufficient time to identify and to avoid striking and killing desert tortoises. Metropolitan will issue the Contractor a warning for the first violation of the speed limit by any of his/her employees, subcontractors, and/or suppliers. Subsequently, Metropolitan reserves the rights to expel from the project repeat speeding offenders, or a first-time offender depending on the severity of the violation as determined by Metropolitan.
 - C. ★ As part of the project, the following procedures shall be implemented to avoid adverse impacts to trees located within the project work limits:
 - 1. ★ The Contractor shall avoid stockpiling of materials and driving or parking vehicles and equipment under the canopy of existing trees to protect tree root systems and avoid damage to the trees, where trees and work limits are not on concrete or asphalt.
 - 2. No trees within project work limits shall be removed, cut, or trimmed unless identified for removal on project drawings, or authorized in advance by Metropolitan.
 - a. Per applicable local tree ordinances, required permits shall be obtained prior to any tree removal, cutting, or trimming.
 - 3. Trees designated for removal shall be removed in accordance with the Migratory Bird Treaty Act and California Fish and Game Code §3503.
- 1.07 ★ MIGRATORY BIRD TREATY ACT AND CALIFORNIA FISH AND GAME CODE §3503
- A. No physical disturbance of vegetation, operational structures (e.g., inlet/outlet towers, overhangs, etc.), buildings, or other potential habitat (e.g., open ground, gravel, construction equipment or vehicles, etc.) that may support nesting birds protected by the Migratory Bird Treaty Act and California Fish and Game Code §3503 shall occur in the breeding season, unless authorized by the Engineer.

NTS: Use the following paragraph only for desert locations. Change breeding period based on project location, local and annual climatic conditions, and in consultation with a qualified biologist, as needed.

- 1. ★ The breeding season in the desert typically extends from January 15 through July 15 but can vary based on local and annual climatic conditions.

NTS: Change breeding period based on project location, local and annual climatic conditions, and in consultation with a qualified biologist, as needed.

- 2. The breeding season extends from [specify date] to [specify date].
- 3. If nesting habitat must be cleared or project activities must occur in the vicinity of nesting habitat within the breeding season as defined above, a qualified biologist will perform a nesting bird survey no more than [insert number of days; typically between 3-5 days] days prior to clearing or removal of nesting habitat or start of project activities.
- 4. If active nests for sensitive species, raptors, and/or migratory birds are observed, an adequate buffer zone or other avoidance and minimization measures may be established until the young have fledged and are no longer reliant on the nest, as identified by a qualified biologist and authorized by the Engineer. If a buffer is necessary it will be clearly marked in the field by the Contractor, as directed by the Engineer, and construction or clearing will not be conducted within this zone.

5. A qualified biologist will monitor active nests or nesting bird habitat within or immediately adjacent to project construction areas and the Engineer will provide necessary recommendations to the Contractor to minimize or avoid impacts to protected nesting birds.
6. If implementation of avoidance and minimization measures is not feasible, the qualified biologist responsible for monitoring will be empowered to temporarily halt construction activities, until the young have fledged and are no longer reliant on the nest or biological monitoring indicates that construction can proceed with no impacts to the nest and/or young.

NTS: The following article is not necessary if there is no ground-disturbance.

1.08 ★CULTURAL AND PALEONTOLOGICAL RESOURCES

- A. Cultural and paleontological resources may include, but are not limited to: prehistoric artifacts, grave goods, funerary objects, human remains, historic can scatters, building foundations, historic buildings, structures, objects, and fossils.
- B. ★Archaeological and/or paleontological surveys of the project area have been conducted; however, discoveries of previously unknown archaeological and paleontological resources or buried deposits may be possible during construction.
- C. ★The Contractor shall not infringe upon any areas identified as a cultural or paleontological area, whether they have been identified as an ESA/ERA or not. Any person identified trespassing upon restricted areas shall be immediately removed from the project.
- D. If archaeological or paleontological resources are encountered at the project site, the Contractor shall not disturb the resources and shall immediately:
 1. Cease all work within 50 feet of the discovery
 2. Notify the Engineer
 3. Protect the discovery area, as directed by the Engineer
 4. The Engineer, with the qualified architectural historian, archaeologist and/or paleontologist, will make a decision of validity of the discovery and designate an area surrounding the discovery as a restricted area. The Contractor shall not enter or work in the restricted area until the Engineer provides written authorization.
- E. ★Ground-disturbing activities will be monitored by a qualified archaeologist or paleontologist.
 1. The Engineer and monitor will conduct a review of the location for the boundaries of the archaeological/paleontological monitoring area.
 2. Temporary fencing or other restricting features may be used to define the boundaries of the monitoring area. The Contractor shall not work within the monitoring area boundaries unless the monitor is present.
 3. The Contractor shall submit to the Engineer, a schedule of days to be worked, at least five working days prior to work within the monitoring area.
 4. If any cultural materials are observed during ground disturbance, the Contractor shall follow the procedures outlined hereinabove.

1.09 ★HUMAN REMAINS

- A. In the event that human remains are discovered during excavation/construction activity, Health and Safety Code Section 7050.5, CEQA Guidelines Section 15064.5 (e), and Public Resources Code Section 5097.98 shall apply. The Contractor shall notify the Engineer at once and not enter or work in the restricted area until the Engineer provides written authorization.

1.10 WILDFIRE PROTECTION

- A. Gasoline-powered or diesel-powered machinery used during construction shall be equipped with standard exhaust controls and muffling devices that also act as spark arrestors.

1.11 HAZARDOUS MATERIALS

- A. Handling of hazardous materials shall be in accordance with Section 01060.

1.12 LIGHT ABATEMENT

- A. The Contractor shall exercise special care to direct floodlights to shine downward. Floodlights shall be shielded to avoid a nuisance to the surrounding areas.
- B. No lighting shall include a residence or native area in its direct beam.
- C. The Contractor shall correct lighting nuisance whenever it occurs.

1.13 ★MONITORING

- A. Metropolitan is required to comply with the state and federal environmental regulations, which may require monitoring.
- B. ★Metropolitan is required under the California Environmental Quality Act (CEQA) to provide mitigation monitoring in accordance with the [insert CEQA document name], [and to comply with the USFW S/ACOE/CDFW/RWQCB (10(a) or Section 7/1602/404/401, etc.) permit(s) issued for this project] [if permit is required]. The Contractor shall comply with the mitigation monitoring plan as specified herein and as directed by the Engineer.
- C. Metropolitan's monitors will monitor construction activities to ensure that all conditions are implemented; however, the Contractor is responsible for their implementation. Monitors shall be allowed access to observe all construction.
- D. The Contractor shall submit required documentation (e.g., equipment list and maintenance logs, noise monitoring logs, seed labels) demonstrating compliance with applicable regulations.

1.14 ★NATIVE AREAS

- A. The Contractor is cautioned that wildlife may traverse the work limits. The Contractor shall conduct his/her operations to facilitate the well-being of all wildlife affected by the project.
- B. The Contractor shall not feed or harass wildlife.
- C. The Contractor shall keep the work area free of trash and food waste. All food waste and trash shall be removed from the work area daily.

1.15 NOISE CONTROL

- A. The Contractor shall comply with all requirements of governmental agencies having jurisdiction.
- B. All site preparation, grading, excavation, and construction activities shall be limited to the hours specified in Section 01010, Summary of Work, and shall be in accordance with local jurisdiction's noise ordinances.
 - 1. ★Deliveries in residential areas shall only be conducted between [insert time period (i.e., 7 a.m. and 5 p.m. Monday through Saturday, and between 9 a.m. and 3 p.m. on Sunday)][hours specified in Section 01010].
 - 2. ★Queuing of trucks and/or delivery of construction materials to any part of the construction site will not be allowed in residential areas outside of designated hours.
- C. ★The Contractor shall comply with all requirements of the authorized Noise Control Plan, as specified in this section.
- D. The Contractor shall perform all work without undue noise and shall make every effort to abate or prevent noise nuisances.
- E. Construction vehicle equipment shall be kept in proper working order for the duration of the construction activities.
- F. The Contractor shall equip all construction equipment, fixed and mobile, including internal combustion engines, with properly operating and maintained noise mufflers and intake silencers, consistent with the manufacturers' standards.
- G. Stationary noise-generating equipment, such as generators and compressors, shall be housed or covered and located as far possible as practicable from the nearest residential/institutional property lines to attenuate noise.
- H. If electrical services are available within 150 feet, electrical power shall be used to run air compressors and similar power tools at all construction activity locations, in lieu of gas or diesel-powered compressors.

1.16 SURFACE AND STORM WATER CONTROL

- A. Surface and storm water control shall be in accordance with Section [01070, Storm Water Pollution Prevention Plan (SWPPP) / 01072, Water Pollution Control Plan (WPCP)].

1.17 ★ TRAFFIC

- A. The Contractor shall set up temporary traffic control as specified in the Contractor's authorized traffic control plan, and as specified in Section 01550, Access, Parking, and Traffic. See Submittals article.
- B. ★ The Contractor shall cover all open trenches when not in use at the end of each workday, where feasible and necessary.
 - 1. In residential areas, plating shall be recessed to reduce noise impacts to residents.

1.18 ★ WELL-BEING OF DOMESTIC ANIMALS

- A. The Contractor is cautioned that domestic animals (cattle, horses, and others) may traverse the work limits or are kept on surrounding properties. The Contractor shall conduct his/her operations to avoid unnecessary disturbances and facilitate the well-being of all animals affected by the project. The Contractor shall consult with the Engineer and affected animal owners and shall cooperate in using construction methods and establishing operating procedures to avoid unnecessary disturbances to animals.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

ATTACHMENT A
CERTIFICATION OF CLEAN EQUIPMENT

Project Name: _____

I certify that the following equipment is clean of soil, seeds, vegetative matter, other debris, or adult, juvenile, or eggs of aquatic invasive animals, and has been decontaminated. Cleaning and decontamination were performed outside of the bed, bank, or channel of a stream and the bed or shore of a lake. Rinse water was properly contained and disposed of according to applicable federal, state, and local laws and ordinances enacted and in force at time.

Equipment Description	License Plate/Identification #		Cleaning Location	Date Cleaned
		IN		
		OUT		
		IN		
		OUT		
		IN		
		OUT		
		IN		
		OUT		
		IN		
		OUT		
		IN		
		OUT		
		IN		
		OUT		
		IN		
		OUT		
		IN		
		OUT		
		IN		
		OUT		
		IN		
		OUT		

Signature of Permittee or Designee

Date

Certification is needed any time equipment is moved into the project work area and prior to leaving the project work area for this project.

END OF SECTION

SECTION 01070
STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

Note to Specifier (NTS): This Master Specification is not a “standard” specification but a baseline template to tailor for specific project needs. Ensure that editing is consistent with other contract documents.

- 1. Revise text or numbers in brackets [].***
 - 2. If there is text that does not apply to the project, including optional text identified with a ★, delete the text and type “(Not Used)” next to the article heading. Do not delete article section headings.***
 - 3. Verify cross-references when adding or deleting any text.***
- Consult the Metropolitan discipline technical lead with any questions.***

NTS: If the project requires a SWPPP, include Section 01070. If a SWPPP is not required, then use Section 01072, Water Pollution Control Plan (WPCP), instead of Section 01070.

NTS: When using this section, include the following sections in the project specifications as applicable:

- ★00120, Supplementary Instructions to Bidders***
- 01300, Submittals***
- ★02952, Erosion Control – Post Construction BMPs***

PART 1 GENERAL

1.01 REFERENCES

NTS: Delete references from Part 1 if they are not cited in the spec section. If new references are cited in the text, add the new references in Part 1.

A. General

1. The publications listed below form a part of this specification to the extent referenced. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.
2. Where a date is given for reference standards, the edition of that date shall be used. Where no date is given for reference standards, the latest edition available on the date of Notice Inviting Bids shall be used.

B. California State Water Resources Control Board (SWRCB)

1. Storm Water Program

C. California Stormwater Quality Association (CASQA)

2. Construction Best Management Practices (BMP) Online Handbook

1.02 SUBMITTALS

NTS: Coordinate with Document 00120, Supplementary Instructions to Bidders, regarding the timing of the SWPPP submittal. If the project requires an extensive SWPPP (typically for a large project), Document 00120 provides more time for the Contractor to prepare and submit, and for Metropolitan to review the SWPPP.

A. Submittals shall be in accordance with Section 01300, Submittals, and this section.

B. Action Submittals

1. The Contractor shall submit an SWPPP to the Engineer for authorization. ★[The timing for the SWPPP submittal shall be as specified in Document 00120, Supplementary Instructions to Bidders]. The submitted SWPPP shall be fully compliant with the requirements of the SWRCB, Storm Water Program. The SWPPP shall be resubmitted if

Storm Water Pollution Prevention Plan (SWPPP)

determined unacceptable by the Engineer. Two paper copies and one electronic PDF format copy of the SWPPP shall be submitted. The SWPPP shall contain the following:

- a. Names and qualifications of the Contractor's SWPPP Manager, Qualified SWPPP Developer (QSD), and Qualified SWPPP Practitioner (QSP).
- b. Statement indicating the Contractor's intent to comply with the terms of the Construction General Permit (CGP) for storm water discharges associated with construction activity until the Contractor-prepared SWPPP is authorized by the Engineer.

2. The Contractor shall submit all necessary revisions and amendments to the SWPPP to the Engineer for authorization. Two paper copies and one electronic PDF format copy of SWPPP amendments shall be submitted.

C. Information Submittals

1. All annual compliance certifications, monitoring program reports, inspection logs, and data shall be submitted as electronic PDF format copies to the Engineer as required by terms and conditions of the CGP and SWPPP. The Contractor shall also provide the Engineer access to a maintained paper copy of inspection logs and reports.

1.03 RELATED ACTIVITIES BY METROPOLITAN

- A. Metropolitan has provided site maps of the project to assist the Contractor with its preparation of the SWPPP.
- B. Upon review and authorization of the Contractor-prepared SWPPP, Metropolitan will file the SWPPP together with the Notice of Intent (NOI) and obtain a Waste Discharge Identification number (WDID) from the SWRCB. It typically takes up to 10 working days for the SWRCB to issue a WDID after filing by Metropolitan.
- C. Metropolitan will also file any revisions to the SWPPP that are submitted by the Contractor, and authorized by the Engineer during the course of the contract.

1.04 PERMIT REGISTRATION DOCUMENTS (PRDS)

- A. The authorized SWPPP information will be posted electronically by Metropolitan on the State Water Board's Stormwater Multi-Application and Report Tracking System (SMARTS) website. Information submitted by Metropolitan may be viewed on SWRCB website.

1.05 STORM WATER POLLUTION PREVENTION PLAN PREPARATION AND IMPLEMENTATION

NTS: Confirm the risk level classification of the site. If the site has a risk level classification greater than 1, then include Paragraph 1.05A. Modify as necessary if the project has multiple sites.

A. ★ Risk Level Classification

1. The site shall be considered to have a Risk Level [2 or 3] classification.
2. Contractor's QSD shall use this risk classification when developing the SWPPP.
- B. The Contractor shall not mobilize or perform any work on the project site until the Engineer has authorized the Contractor's SWPPP and obtained a WDID from the SWRCB.
- C. During the course of the contract, the Contractor shall revise and update the SWPPP as required by SWRCB and resubmit to the Engineer for authorization.
- D. The Contractor shall prepare and implement a site specific SWPPP in accordance with the requirements of the SWRCB (http://www.swrcb.ca.gov/water_issues/programs/stormwater/constpermits.shtml), the CGP, and the Construction BMP Online Handbook developed by CASQA (<https://www.casqa.org/programs-initiatives/bmp-handbooks/construction>). The SWPPP and all Contractor activities shall be coordinated with other construction activities and SWPPPs at the site.
 1. The SWPPP for this project shall conform to the requirements which include:
 - a. Eliminate/reduce non-storm water discharges to storm systems and other U.S. waters.
 - b. Develop and implement a site specific SWPPP that specifies BMPs to prevent all construction pollutants from contacting storm water, limit erosion and sediment transport, and keep all products of erosion and pollutants from moving off site.
 - c. Perform inspections and maintenance of all BMPs (storm water control structures and pollution prevention measures) and comply with the risk level requirements set-forth by the CGP.

- d. Comply with post-construction BMPs for post-construction erosion and sediment control prepared by Metropolitan.
2. The SWPPP shall adequately address these requirements and shall contain as required:
 - a. Site and source descriptions (including the elements and characteristics specific to the site)
 - b. Descriptions of BMPs for erosion and sediment control
 - c. BMPs for construction waste handling and disposal
 - d. Implementation of authorized local plans
 - e. A sampling plan and/or sampling contingency plan, as required and based on project risk level
 - f. Non-storm water management
3. Erosion and sediment control shall include the following practices:
 - a. Prevent runoff from flowing over unprotected slopes.
 - b. Keep disturbed areas to the minimum necessary for construction.
 - c. Control sediment transport within the site and prevent sediment transport from the site, using appropriate BMPs, including but not limited to check dams, fiber rolls, sand bags, and siltation fences. Reduce sediment transport off site through construction of appropriately designed desilting and retention ponds.
 - d. Remove and dispose of all construction-generated siltation collected within or behind BMPs, including retention ponds.
 - e. Confine soil disturbance activities to the dry season, whenever possible. If construction needs to be scheduled for the wet season, ensure that erosion and sediment transport control measures are implemented prior to disturbance of soil and/or vegetation.
 - f. Stabilize disturbed areas as quickly as possible but in no case shall the time of stabilization exceed the time limits specified by the Regional Water Quality Control Board and the requirements of the CGP.
 - g. Maintain existing temporary controls until they are replaced with permanent controls.
 - h. Maintain and improve existing controls as necessary to comply with the CGP for construction activity.
- E. Storm water management and erosion/sediment controls shall be installed in accordance with the authorized SWPPP and the requirements of the CGP. Controls and procedures shall conform to the latest edition of CASQA's Construction BMP Online Handbook (Web-based portal).
- F. The Contractor shall amend the SWPPP prior to and during the course of the work as required by field conditions, construction procedures, or the Engineer. Changes shall be properly documented in the SWPPP. Copies of all amendments shall be submitted to the Engineer for authorization.
- G. Maintenance and Inspections
 1. The Contractor shall make visual inspections of all erosion control and sediment transport devices as necessary to ensure proper operation not less than once per week, and promptly before and after every rainstorm and at least every 24 hours during an extended rainfall event. If such inspection reveals that additional measures are needed to prevent erosion and sediment transport, the Contractor shall promptly maintain, modify, or install additional devices as needed. The Contractor shall use the forms in the SWPPP for all inspections, and all completed forms shall be included in the SWPPP and submitted to the Engineer.
 2. The Contractor shall perform routine maintenance, which shall include maintenance and repair of BMPs, debris removal, silt/sediment removal, clearing of vegetation around flow control devices to prevent clogging, and maintenance of healthy vegetative cover.
- H. Removal and Formal Clean-up
 1. Once the site has been successfully stabilized against erosion and sediment transport, and post construction BMPs have been established, the Contractor shall remove temporary sediment control devices and all accumulated silt and debris. The Contractor shall dispose of silt and waste materials in a proper manner. The Contractor shall restore all areas disturbed during this process and stabilize against erosion with surfacing materials.
- I. Post-Construction BMPs Installation

Storm Water Pollution Prevention Plan (SWPPP)

1. Post-Construction BMPs, as described in the authorized SWPPP★[and as specified in Section 02952, Erosion Control – Post Construction BMPs], shall be installed before the end of the project.
- J. Failure to Adopt and/or Implement an Acceptable SWPPP
1. If the Contractor fails to adopt and implement an acceptable SWPPP, Metropolitan reserves the right to stop the Contractor's work without recompense, and withhold payments owed to the Contractor until such time as an acceptable SWPPP is adopted and implemented, and/or design and implement an acceptable SWPPP, using Metropolitan or other Contractor forces with costs for same deducted from monies owed the Contractor. In addition, Metropolitan reserves the right to suspend work for failure of the Contractor to adopt and implement an acceptable SWPPP in accordance with Article 13 of the General Conditions.
 2. Fines levied by authorities having jurisdiction for failure of the Contractor to adopt and implement an acceptable SWPPP shall be deducted from monies owed the Contractor.

PART 2 PRODUCTS

2.01 EROSION CONTROL MATS AND FIBER ROLLS

- A. Erosion control mats, fiber rolls and other BMP components containing plastic netting shall not be allowed. The Contractor shall use products containing biodegradable netting.

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01565 NOISE CONTROL

Note to Specifier (NTS): *This Master Specification is not a “standard” specification but a baseline template to tailor for specific project needs. Ensure that editing is consistent with other contract documents.*

- 1. Revise text or numbers in brackets [].**
 - 2. If there is text that does not apply to the project, including optional text identified with a ★, delete the text and type “(Not Used)” next to the article heading. Do not delete article section headings.**
 - 3. Verify cross-references when adding or deleting any text.**
- Consult the Metropolitan discipline technical lead with any questions.**

NTS: *When using this section, include the following sections in the project specifications as applicable:*
01010, Summary of Work

PART 1 GENERAL

1.01 GENERAL

- Metropolitan holds the Contractor and all subcontractors liable for meeting the conditions stated herein and in all permits referenced in the specifications and all applicable local, state, and federal regulations, acts, laws, and ordinances.
- The Contractor shall obtain noise variances from [name of city or county] for nighttime and/or weekend work as required.
- Implementation of noise control measures required in this section does not relieve the Contractor from complying with the local noise ordinances shown in the following table.

Table 1. Noise Limits

<u>Location / Jurisdiction</u>	<u>Noise Limits</u>	<u>Work Hour Restrictions</u>

1.02 REFERENCES

NTS: *Delete references from Part 1 if they are not cited in the spec section. If new references are cited in the text, add the new references in Part 1.*

- General
 - The publications listed below form a part of this specification to the extent referenced. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.
 - Where a date is given for reference standards, the edition of that date shall be used. Where no date is given for reference standards, the latest edition available on the date of the Notice Inviting Bids shall be used.
- American National Standards Institute (ANSI)
 - ANSI S1.1, Acoustical Terminology
 - ANSI S1.4, Specifications for Sound Meters

- C. American Plywood Association (APA)
- D. California Building Standards Commission
 - 1. California Building Code (CBC)
- E. International Electrotechnical Commission (IEC)
 - 1. IEC 60942, Electroacoustics - Sound Calibrators

1.03 DEFINITIONS

- A. Decibel (dB) - A unit of level which denotes the ratio between 2 quantities which are proportional to power; the number of decibels corresponding to the ratio of 2 amounts of power is 10 times the logarithm to the base (10) of this ratio.
- B. Average Hourly Noise (dBA L_{EQ}) – The time period average equivalent A-weighted noise level during the stated measurement period.
- C. A-Weighted Sound Level (dBA) – The sound level in decibels as measured on a sound level meter using the A-weighted network.
- D. Equivalent Noise Level, L_{EQ} – The average A-weighted noise level during the stated measurement period.
- E. NRC – Noise Reduction Coefficient
- F. Property Line – For the purposes of this section the property line is the point where a residential or business property begins and extends vertically to the height of the tallest structure on the property, and horizontally to the limits of the property.
- G. Sensitive Receptors – Human or animal that can be negatively impacted by high levels and/or durations of noise.
- H. Sound Level Meter – an instrument including a microphone, an amplifier, an output meter, and "A" frequency weighting network for the measurement of sound levels which satisfies the pertinent requirements for Type S2A meters in American Standard Specifications for sound level meters in the most recent version of ANSI S1.4.
- I. STC – Sound Transmission Class
- J. Work Site – An area designated by the Contractor that encompasses the limits of where workers and equipment will be operating.

1.04 SOUND LEVEL MEASUREMENTS

- A. Noise level measuring instruments shall comply with the latest version of ANSI S1.4 specifications for sound meters, and be capable of meeting accuracy standards as defined by ANSI Type 1 or Type 2 for sound metering instruments.
- B. Noise level measuring instruments shall be maintained per the manufacturer's calibration recommendations,
- C. Sound level measurement shall be measured with a sound level meter using A-weighting and a "slow" response time as defined in the latest version of the most recent version of ANSI S1.1.
- D. All noise measurement meters must be equipped with a manufacturer's recommended wind noise shield at all times during a measurement.
- E. All measurements unless stated otherwise shall be provided in the format of the time period average equivalent noise level (L_{EQ}) noting the time period if less than 1-hour.
- F. A calibrator as defined by the latest version of IEC 60942 shall be used for checking the calibration of hand-held noise measuring instruments in the field.
- G. Noise measuring instruments shall not be exposed to extremes of humidity, and any condensation shall be carefully avoided.

1.05 SUBMITTALS

- A. Submittals shall be in accordance with Section 01300, Submittals, and this section.
- B. Action Submittals
 - 1. The Contractor shall submit a Noise Control Plan stamped as applicable by a Professional Engineer, including drawings and calculations for noise control structures, 30 working-days prior to mobilization at access sites and

ventilation locations. The Noise Control Plan shall be authorized by the Engineer prior to start of site construction work and shall be implemented prior to site construction work unless otherwise stated in the plan. The Noise Control Plan shall include but not necessarily be limited to the following, to the extent feasible to protect the interests of the public, and to allow for project completion in light of critical work schedules, necessary work methods, and the physical constraints of Metropolitan's right-of-way and available work areas:

- a. Identification of sensitive receptors, receptor locations and elevations, and the location and approximate elevation of noise-generating activities (i.e., excavating, staging, parking, meeting areas) and equipment.
 - (1) Noise levels shall be measured at the nearest property lines.
 - (2) The Engineer may relocate or add additional locations to monitor noise levels.
- b. Pre-construction noise measurements detailing location, time, frequency, results of measurements, and source of noise.
- c. Detailed noise attenuation measures, including description of proposed construction activities, description and location of noise control measures, description of how, when, frequency, and where noise measurements shall be taken, and a sample noise monitoring form.
- d. Drawings for the types of noise control barriers to be erected for all noise-generating and stationary construction equipment showing the methods of support and anchoring, along with calculations.
- e. Proposed noise barriers with required STC ratings and noise reduction methods, modeling results, monitoring strategy, and procedures for mitigation when the noise limits specified in this section are exceeded.
 - (1) Noise levels shall be calculated/modeled at a height of 5 feet above grade at the property boundary wall at single story residences or businesses.
 - (a) If the property has a wall which meets the requirement for consideration as a noise control element, the noise level should be calculated at least 10 feet inside the wall, as authorized by the Engineer.
 - (2) Noise levels shall be calculated/modeled at a height equivalent to 5 feet above each floor level located above the first floor at multi-storied residences or businesses.
- f. Qualifications of the person utilizing the instrument to measure the noise levels demonstrating prior experience or training by an experienced professional measuring noise levels with type of instrument being used.
- g. A Nighttime Construction Management Plan, if any work is conducted during nighttime hours.

PART 2 PRODUCTS

2.01 GENERAL

- A. Noise control materials may be new or used.
 1. Used materials shall be sound and free of damage and defects and shall be of a quality and condition to perform their designed function while providing a suitable appearance.
 2. Used material must last for the duration of construction.
- B. Unless otherwise specified, noise control barrier or material shall have a minimum STC rating of 25.
 1. STC 25 requirement may be fulfilled with:
 - a. Flexible noise control curtains/blankets with a laboratory test specification of STC 25.
 - b. A double layer system consisting of two curtains/blankets with a minimum test specification of STC 18 with a 6-inch gap between them and ¾ inch thick plywood backing each of the curtains/blankets.
 - c. An alternative material with proof of STC 25 or greater noise control value.
 2. STC 32 requirement may be fulfilled with:
 - a. Flexible noise control curtains/blankets with a laboratory test specification of STC 32
 - b. A double layer system consisting of two curtains/blankets with a minimum test specification of STC 25 with a 6-inch gap between them and ¾ inch thick plywood backing each of the curtains/blankets.
 - c. Two layers of 3/4-inch thick plywood barrier material separated by stud wall constructed with 2 by 4 inch (nominal) studs, 16 inches on center with gaps between studs filled with insulation rated no less than R30.

- d. An alternative material with proof of STC 32 or greater noise control value.
- C. Noise control barriers may be constructed of plywood or alternate materials meeting STC ratings.
 - 1. All plywood used shall meet the minimum APA specification standard rating of C-D exterior grade.
- D. Noise control barriers shall be designed to withstand, and anchored properly to handle, the loading generated by high sustained winds and gusts to which the project area can be subjected. Wind speeds, both sustained and gusts, used to determine loading on noise control barriers shall be in accordance with the CBC and current local building codes and ordinances.
- E. Noise control barriers must be maintained in compliance with this specification for the duration of the Contract.
 - 1. Damage, gaps, holes, or weaknesses in the noise control barrier, or any openings between the barriers or barrier and the ground shall be promptly repaired by the Contractor.
- F. The Contractor is responsible for maintaining the safety and appearance of the noise control barrier.
- G. Noise control barriers must have flush mating surfaces of wall sides when walls are joined together or at corners.
 - 1. Gaps or cracks between wall sections and between the bottom edge of walls and grade shall be closed with material that shall completely close the gaps and be dense enough to attenuate noise.
- H. Gates and/or doors in the noise control barrier that are either hinged or rolling shall be constructed of the same or equally effective material as the noise control barrier.
 - 1. Gates and doors in the noise control barrier shall be constructed to ensure that the edges overlap the noise control barrier to eliminate gaps.
- I. Noise control barriers that do not provide an NRC rating of 0.85 for the barrier side facing the equipment shall have a construction liner provided on the equipment side of glass fiber or other appropriate type of noise-absorbing material at least two inches thick with a manufacturer's NRC rating of 0.85 or better. Construction liner coverage must be at least 85 percent of the total noise control barrier area.
- J. Noise control curtain/blanket shall be constructed of durable, flexible composite material featuring a noise barrier layer bonded to a sound-absorptive material on one side.
 - 1. Noise barrier layer shall be constructed with rugged, impervious material with a surface weight of at least one pound per square foot.
 - 2. Sound-absorptive material shall include a protective facing and securely attached to one side of the noise barrier layer over its entire surface.
 - 3. Materials shall be fire-retardant with a class A fire rating for the composite material system.
- K. Noise control curtain materials shall be corrosion-resistant to mild acids and alkalis, salts, oils, and grease. The materials shall also be abuse-resistant, exhibiting superior hanging and tear strength during construction.
 - 1. Curtain/blanket barrier material shall have a minimum breaking strength of 120 lb/in and minimum tear strength of 30 lb/in.
 - 2. Curtain/blanket absorptive material facing shall have a minimum breaking strength of 100 lb/in and minimum tear strength 7 lb/in.
 - 3. Sound-absorptive material shall be mildew-resistant, vermin proof, and non-hygroscopic.

2.02 NOISE CONTROL – VENTILATION EQUIPMENT

- A. Ventilation equipment shall be enclosed, or as directed by the Engineer.
- B. Contractor shall use electric equipment instead of diesel equipment when possible.
- C. Contractor shall implement intensive equipment maintenance program to reduce undue noise.

PART 3 EXECUTION

3.01 GENERAL

- A. The Contractor is responsible for obtaining noise variances from [name of city or county] for work outside of standard noise ordinances as detailed in Section 01010, Summary of Work.

- B. The Contractor is responsible for design, detailing, and adequacy of the footings, framework, supports, posts, attachment methods and other appurtenances required for the proper erection of noise barriers, with the applicable Professional Engineer stamp.
- C. The Contractor is responsible for the maintenance, safety, and appearance of the noise control barrier for the duration of the construction.
- D. The Contractor shall locate all noise-generating and stationary construction equipment as far as possible from near-site residential and sensitive receptors and situated so that emitted noise is directed away from the sensitive receptors.
- E. Noise-generating equipment shall be oriented such that the source of noise is facing away from the nearest sensitive receptors to the extent possible.
- F. The use of a work site noise control barrier, a barrier large enough to encompass the entire work site or a portion of the work site, shall not negate the use of noise control barriers for specific equipment, as noted herein.
- G. Reduce equipment idling time to 5 minutes on cranes and construction equipment.
- H. Areas where workers gather (break areas, shift-change areas, meeting areas, and sanitary stations) shall be located a minimum of 100 feet away from any residence, or to the greatest extent feasible.
- I. Parking areas shall be located a minimum of 150 feet from sensitive receptors. Parking areas within 500 feet of sensitive receptors shall be posted, to prohibit workers from gathering during nighttime hours, and prohibiting radios and music at any time.
- J. Fuel deliveries shall be a minimum of 500 feet from residences or to the greatest extent feasible.
- K. The Contractor shall perform all work without undue noise and shall make every effort to alleviate or prevent noise nuisances.
- L. Site preparation, excavation, site closure activities and delivery trucks shall be allowed during daytime hours only and in compliance with local noise and traffic ordinances.
- M. The Contractor's construction vehicles and equipment shall have mufflers. The Contractor shall equip all construction equipment, fixed and mobile, with properly operating and maintained noise mufflers and intake silencers, consistent with the manufacturer standards. Equipment shall be maintained to a minimum standard that includes engine noise baffles and mufflers that meet or exceed the original manufacturer requirements.
- N. The Contractor shall utilize the following types of equipment whenever possible: electrical instead of diesel powered equipment, hydraulic tools instead of pneumatic tools, and use of electric welders powered by remote generators.
- O. The Contractor shall install a noise control barrier surrounding stationary noise generating equipment in addition to any noise control barriers installed to encompass or shield a portion of the general work site that may be installed by the Contractor as required under these specifications. Noise control barrier and enclosure construction criteria shall follow general guidelines listed in the following section.
 - 1. Noise control barriers constructed by the Contractor shall be designed by a qualified professional with experience in designing noise control barriers.
 - 2. Noise control barriers for equipment shall conform to the requirements for bag filters and large compressors, air humidifiers, and generators, as specified herein.
 - 3. Noise control barriers and enclosures shall be implemented using the most appropriate material, configuration, and location, to achieve the maximum feasible noise reduction.
 - 4. All inner surfaces, including any removable roof sections of a noise control barrier must have a noise absorptive inner layer.
 - 5. Noise control barriers with gates or doors shall be kept closed, except for brief periods of time to allow access to the equipment or construction site.
 - 6. Equipment that has noise control doors shall be operated only with the doors fully closed.
- P. The Contractor shall handle, store, apply, and dispose of noise barriers consistent with all applicable federal, state, and local regulations.

3.02 NOISE MONITORING

A. General

1. The Contractor shall measure the noise level for single story and multi-storied residences or businesses in accordance with this section's submittal requirements for the Noise Control Plan.

B. Pre-Construction Noise Measurements

1. Prior to the start of construction, the Contractor shall measure noise levels at the nearest sensitive receptors, as identified in the Noise Control Plan, during daytime and nighttime hours (if nighttime work is required) and shall submit the measurements in the Noise Control Plan.
 - a. If noise levels are in excess of the noise limits specified in this section, procedures identified in the Noise Control Plan must be implemented.

C. Noise Monitoring Recordation

1. All monitoring results shall be recorded on a form supplied by the Contractor and authorized by the Engineer.
 - a. The noise monitoring form shall note the date and the time of day of the noise monitoring, noise level, noise threshold, location of measurement taken, elevation of where measurement was taken, construction activity being performed, and the person(s) performing the monitoring.
2. Monitoring results shall be submitted to the Engineer at the conclusion of the testing.
3. Only monitoring equipment with current and valid calibration dates/sticker shall be used for monitoring.
4. Monitors shall be experienced in operating the monitoring equipment.

D. Construction Noise Monitoring

1. The Contractor shall perform noise monitoring following initial setup of equipment and noise measurements to measure noise levels during work and to measure the effectiveness of noise control measures.
2. The Contractor shall plan noise measurement times to coincide with scheduled operations of onsite equipment expected to create the loudest noise impacts during the normal measurement schedule and at the beginning of each new equipment activity. Noise levels shall be measured in 30-minute increments noting the lowest and highest noise level measured within 30-minute intervals at the start of construction and at the beginning of each new activity, or as new equipment is used as directed by the Engineer. Should any equipment be in use during nighttime hours, noise levels must be measured in accordance with the above parameters.
3. If noise levels are in excess of the noise limits specified in this section, procedures identified in the Noise Control Plan must be implemented.
 - a. After initial installation of noise control barriers and operation of equipment the Contractor shall measure the noise levels at the nearest sensitive receptors.
4. The Contractor may be required to conduct additional noise monitoring following the initial measurements taken, if there are any changes made to the noise control measures, noise generating equipment is relocated, noise control barriers are not properly maintained, or nearby sensitive receptors are impacted.
5. Where measured noise levels at the property line of residences are shown to exceed the noise limits specified in this section, additional feasible noise control measures shall be implemented in an effort to achieve the specified daytime and nighttime thresholds.
 - a. Noise monitoring shall be performed to record the achieved level of noise reduction.
6. Metropolitan will have a monitor present during construction activities to ensure that all conditions are implemented and will be allowed to observe all construction activities; however, the Contractor is responsible for implementation.

END OF SECTION

THIS SECTION IS BEING UPDATED

A new version is being developed in the [Master Spec Preparation for CCB](#) folder in ProjectWise (Ctrl + Click to follow the link). Consult with the Discipline Tech Lead to determine which version to use for the project.

SECTION 02110 CLEARING, GRUBBING, AND STRIPPING

Note to Specifier (NTS): *This Master Specification is not a “standard” specification but a baseline template to tailor for specific project needs. Ensure that editing is consistent with other contract documents.*

1. **Revise text or numbers in brackets [].**
 2. **If there is text that does not apply to the project, including optional text identified with a ★, delete the text and type “(Not Used)” next to the article heading. Do not delete article section headings.**
 3. **Verify cross-references when adding or deleting any text.**
- Consult the Metropolitan discipline technical lead with any questions.**

NTS: *When using this section, include the following sections in the project specifications as applicable:*

01070, Storm Water Pollution Control Plan (SWPPP) or 01072, Water Pollution Control Plan (WPCP)

★02010, Demolition

02200, Earthwork

NTS: *Omit Submittals if the requirements in Part 3 of this section do not call for removing trees or shrubs, or the branches from existing trees.*

PART 1 GENERAL

1.01 ★ SUBMITTALS

- A. Tree sealant: The proposed tree sealant shall be submitted for approval [30 days] prior to the removal of branches from trees that are designated to remain in place.
- B. ★ Contractor shall provide submittals for removal of trees and shrubs within the limits of the trimming requirements. Submittals shall document the tree and shrub types, and the number and size of trees and shrubs.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 SCHEDULING

- A. Clearing, grubbing, and stripping shall be completed as a separate item of work before the beginning of excavation, stockpiling, trenching, or fill operations. The completed cleared areas must be approved by the Engineer before the Contractor begins subsequent earthwork items.
- B. Areas within the limits of excavation, embankment, building areas, roadways, sidewalks, and other facilities shall be cleared, grubbed, and stripped before earthwork begins.
- C. Borrow areas shall be cleared, grubbed, and stripped prior to use. These areas shall be cleared, grubbed, and stripped in stages, as necessary, to ensure that the areas are not contaminated.
- D. Areas to be used for stockpiling of material shall be cleared, grubbed, and stripped prior to stockpiling.
- E. Clearing, grubbing, and stripping of the length of trench to be excavated each day shall be completed, and material from these operations shall be stockpiled away from the trench area, before the start of trenching.

3.02 PRESERVATION OF EXISTING CONDITIONS

- A. ★ Existing trees, shrubbery, other vegetation, structures, pavements, or utilities designated to remain in place shall be protected from damage resulting from the work.

NTS: Edit the following paragraphs as necessary to ensure that environmental and permit requirements are included.

- B. ★ Special protection shall be provided at [oak trees] [plant material requiring special protection].
- C. ★ Tree branches shall be cut and removed only where, in the opinion of the Engineer, such cutting is necessary to effect construction operations. Tree branches other than those that must be removed to perform the work shall be trimmed to provide a balanced appearance. Scars resulting from the removal of branches shall be treated with an approved tree sealant.

NTS: Ensure that no agreement exists contrary to the following requirements.

- D. ★ Trees, shrubs, or plants within the limits of [work] [the easement on private property] that interfere with excavation or trenching may be removed as long as they are kept intact with their root system and protected as described in this section.
1. Plant locations shall be documented and submitted to the Engineer before the plants are removed.

NTS: Confirm that topsoil exists on the project. If present, edit the following paragraph to ensure compatibility with its use as indicated.

2. The root system of the trees, shrubs, or plants shall be balled, bound in burlap, heeled into [suitable stripped materials or soils] [the stockpiled topsoil] from the excavation, and kept watered as required.
3. Upon completion of work in the affected areas, the trees, shrubs, or plants shall be replanted in their original positions.
4. When a tree, shrub, or plant that has been disturbed or otherwise damaged by the Contractor dies within 6 months from the time that it was disturbed, damaged, or replanted; the tree, shrub, or plant shall be replaced in kind and size.

3.03 CLEARING, GRUBBING, AND STRIPPING

A. General

1. Clearing, grubbing, and stripping shall extend to five feet beyond the limits of excavations and fill slopes, but not beyond the limits of work.

NTS: The project will have either a Storm Water Pollution Control Plan (SWPPP) per Section 01070 or a Water Pollution Control Plan (WPCP) per Section 01072 depending upon the amount of land disturbance. Select the appropriate reference in the following paragraph.

2. Temporary surface, storm water, and erosion control in conformance with the approved [Storm Water Pollution Prevention Plan (SWPPP) in accordance with Section 01070 / Water Pollution Control Plan (WPCP) in accordance with Section 01072] shall be implemented concurrent with the clearing, stripping, and grubbing operations.
3. Waste-disposal areas shall be cleared, grubbed, and stripped only as necessary for the disposal of waste material.
4. Areas that have been cleared, grubbed, and stripped shall be maintained free of objectionable growth until the work has been completed.

B. Clearing

1. Clearing shall consist of cutting, removing, and disposing of objectionable material from the ground surface, such as trash, trees, brush, logs, stumps, weeds, grasses, fences, structures, and natural or artificial obstructions of any kind.
2. During the clearing process, trees shall be cut so that they fall into the area to be cleared. Trees and stumps requiring removal shall not be cut to ground level but shall be pulled completely from the ground.

3. Clearing shall also include the removal and disposal from the jobsite of trash piles and rubbish created prior to and during the construction work.

NTS: If the removal of pavements and structures is required during clearing activities for the project, then include Section 02010, Demolition, in the project specifications and include the following article.

4. ★ Prior to removal of pavement or structures, scoring or sawcutting is required as specified in Section 02010, Demolition.

C. Grubbing

1. Grubbing shall consist of digging up, removing, and disposing of objectionable material found at or below the ground surface such as trash, trees, brush, logs, stumps, roots, and natural or artificial obstructions of any kind that will interfere with the required excavations and construction.
2. Unless otherwise shown or specified, stumps, roots over one inch in diameter, buried logs, and all other objectionable materials shall be removed to a depth of 3 feet below the existing ground surface, or the structure or pipeline subgrade, whichever is deeper.

NTS: Confirm that topsoil exists on the project. If present, edit the following section to ensure that special provisions for its use are included. Section 02200, Earthwork, should also be edited to ensure compatibility with the reference indicated herein.

D. Stripping

1. Stripping shall consist of the removal of organic materials, sod, ★[topsoil,] grass, and grass roots from the areas designated to be stripped.
2. Except under previously existing paving or structures, or when otherwise shown on the drawings, existing soil materials shall be stripped to a depth of 8 inches below the original ground surface.
3. Stripped materials ★[and topsoil] shall be stored in accordance with Section 02200, Earthwork, and shall not be mixed with borrow materials, but shall be retained for placement in the top 12 inches of fill in the areas to be landscaped.
4. The Contractor shall ensure that stripped materials ★[and stockpiled topsoil] are identified and marked so that they are not incorporated into fill or embankment.

3.04 DISPOSAL OF CLEARING, GRUBBING, AND STRIPPING DEBRIS

- A. Burning of combustible materials will not be permitted.
- B. Material removed from the jobsite shall be disposed of legally.

END OF SECTION