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August 27, 2019

Mr. John Forsythe
California Public Utilities Commission
Energy Division
505 Van Ness Avenue
San Francisco, CA 94102

Re: Monterey Peninsula Water Supply Project – Notice to Proceed Request No. 1 (NTPR-1) Treated Water Pipeline within City of Seaside Roadways (except United States Army lands)

Dear Mr. Forsythe:

In April 2012, California American Water (CalAm) filed an application (A.12-04-019) with the California Public Utilities Commission (CPUC). This filing was made to the CPUC for the Monterey Peninsula Water Supply Project (MPWSP). The MPWSP is intended to secure replacement water supplies for CalAm's Monterey District in conformance with legal decisions affecting existing supplies from both the Carmel River and the Seaside Groundwater Basin. On January 13, 2017, the CPUC as the California Environmental Quality Act (CEQA) lead agency, and the Monterey Bay National Marine Sanctuary (MBNMS) as the National Environmental Policy Act (NEPA) lead agency, published the MPWSP Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS). The CPUC and MBNMS published the MPWSP Final EIR/EIS on March 30, 2018. On September 13, 2018, the CPUC certified the combined EIR/EIS, approved a modified (6.4 million gallon per day [mgd]) Project, adopted settlement agreements, and issued a Certificate of Public Convenience and Necessity (Decision 18-09-017). The modified Project, which was referred to as "Alternative 5a" in the Final EIR/EIS, consists of the construction and operations of a reduced size 6.4 mgd plant (compared with the 9.6 mgd for the originally proposed project). Decision 18-09-017, the Final EIR/EIS, and its Mitigation Monitoring and Reporting Plan (MMRP) can be accessed at:

https://www.cpuc.ca.gov/environment/info/esa/mpwsp/comms_n_docs.html

NOTICE TO PROCEED REQUEST

CalAm is submitting this NTPR-1 to proceed with the construction of 5,300 linear feet of Treated Water pipeline (also known as Transmission Mains) for conveyance of desalinated water as a component of the MPWSP, and as more thoroughly described in Decision 18-09-17 and its supporting documentation. This NTPR-1 documents current and future compliance with the applicable Final EIR/EIS mitigation measures associated with anticipated pre-construction,

construction, operational and post-operational activities (see Appendix A). This information is provided so that the CPUC may review and provide authorization to CalAm to initiate construction of the MPWSP Transmission Mains proposed within roadways in the City of Seaside (except for United States [U.S.] Army-owned roadways), as described below.

CONSTRUCTION ACTIVITIES

The project area applicable to this NTPR-1 is in the City of Seaside, Monterey County, California. Site access will be provided via existing public roadways. All work under NTPR-1 will be performed exclusively in the area shown in Appendix B. CalAm's construction contractor, Garney Construction Company, will perform the following construction tasks under NTPR-1:

Approximately 5,300 linear feet of Transmission Mains pipelines would be installed within paved roadways in the City of Seaside, specifically beneath the pavement within Lightfighter Drive and General Jim Moore Boulevard (except for portions owned by the U.S. Army). This entire segment of pipeline would be installed using conventional open-trench technology.

Typical construction equipment for pipeline installation would include flatbed trucks, backhoes, excavators, pipe cutting and welding equipment, haul trucks for spoils transport, trucks for materials delivery, compaction equipment, Baker tanks, pickup trucks, generators, air compressors, cranes, drill rigs, and skip loaders. Pipeline segments would typically be delivered and installed in 6- to 40-foot-long sections. Soil removed from trenches and pits would be stockpiled and substantially reused as backfill, to the extent feasible, or handled in accordance with conditions contained in rights-of-entry and/or encroachment permit conditions.

A conventional backhoe, excavator, or other mechanized equipment would be used to excavate trenches. The typical trench width would be 6 feet; however, vaults, manhole risers, and other pipeline components could require wider excavations. Work crews would install trench boxes or shoring or would lay back and bench the slopes to stabilize the pipeline trenches and prevent the walls from collapsing during construction.

After excavating the trenches, the construction contractor would place pipe bedding; such as sand or other appropriate material shaped to support the pipeline. Construction workers would then place pipe sections (and pipeline components, where applicable) into the trench, connect the sections together as trenching proceeded, and then backfill the trench. Most pipeline segments would have 5 feet of cover. Open-trench construction would generally proceed in a linear fashion at a rate of about 150 to 250 feet per day. Steel plates would be placed over trenches to maintain access to private driveways. The proposed pipeline installation for this NTPR-1 would require temporary lane closures. Detour opportunities will also be provided as an option when required under an encroachment permit or by another authority.

The project footprint for pipeline installation would be entirely contained within paved roadway. A project overview map and series of GIS drawings showing the proposed pipeline route and construction footprint is provided in Appendix B.

CONSTRUCTION SCHEDULE

The construction duration for completion of actions authorized under NTPR-1 is anticipated to take approximately 4 months, with initial ground-disturbing activities commencing on or about Monday, September 16, 2019. Equipment operation associated with construction of this proposed portion of Transmission Mains pipeline would typically occur for 8 hours a day. However, at times, workers and equipment could be on-site up to 12-hours per day. Thus, construction work window hours would be within 7:00 AM and 7:00 PM, Monday through Saturday. Currently, 24-hour construction work is not proposed.

A proposed work schedule is provided in Appendix C.

MITIGATION MEASURE TRACKING AND REPORTING

During the execution of work under NTPR-1, CalAm will implement all applicable mitigation measures (refer to Appendix A) as defined by the CPUC in its Decision 18-09-17. The table in Appendix A indicates the compliance status of applicable pre-construction mitigation measures, and anticipated construction period, and operational mitigation measures. Appendix D includes a compilation of all technical reports, plans and other documents that demonstrate CalAm's implementation of mitigation measures applicable to NTPR-1.

For mitigation tracking, there will be weekly reporting that summarizes daily monitoring logs, or monitoring required at other intervals under the applicable mitigation measure. The results of preconstruction surveys and construction monitoring will be tracked using a compliance-monitoring application called Wildnote (https://wildnoteapp.com/). Wildnote manages cloud-based storage technology to generate tailored electronic data sheets which can be inputted and processed offline in the field.

Qualified professionals will prepare daily monitoring compliance logs with observations and survey results using a tablet or other smart device offline in the field. Once wireless internet (WIFI) can be accessed, the data will be synced and saved in secure electronic folders. Once data is synced, Wildnote administrators with access to these secure folders would be able to view, review, print, and store the completed forms for quality review and processing prior to delivery to CPUC via electronic means, such as a FTP site or other CPUC-accessible on-line location.

The data display will generate weekly summaries of daily logs, store prior monitoring and survey results, and flag items requiring follow-up by monitoring leaders, agencies, CalAm or ESA/CPUC. Annual summaries will also be provided. A sample monitoring report is provided in the project's Mitigation Monitoring, Compliance, and Reporting Plan (MMCRP) document.

PROJECT CONTACTS

The following table contains the names and contact information for key individuals for the installation of Transmission Mains proposed within the City of Seaside (excluding U.S. Army-owned lands). A full set of contact information for all key individuals and field monitors is provided as an appendix to the MMCRP submitted to the CPUC.

Name	Title	Organization	E-mail	Phone
Tim O'Halloran	CalAm Project Manager	CalAm	tim.ohalloran@amwater.com	Office: (831) 646-3291 Cell: (831) 320-1384
John Chamberlain	CalAm Compliance Project Manager	AECOM	john.chamberlain@aecom.com	Office: (408) 961-8441 Cell: (831) 419-4272
Rosemary Laird	CalAm Lead Biologist	AECOM	rosemary.laird@aecom.com	Office: (510) 893-3600 Cell: (510) 874-3239
Ray Romero	Lead Field Monitor/Biologist	AECOM	ray.romero@aecom.com	Office: (805) 764-4025 Cell: (714) 264-6174
Sean Summers	Construction Manager[1]	Garney Construction	ssummers@garney.com	Office: (925) 800-1847 Cell: (415) 350-3219
Kevin Downs	Construction Contractor	Garney Construction	kdowns@garney.com	Office: (925) 800-1847 Cell: (925) 724-9493

CalAm respectfully requests authorization of NTPR-1. If you have any questions or require additional information, please do not hesitate to contact me. As always, thank you in advance for your time and we look forward to working with you on this project.

Sincerely,

Tim O'Halloran
Project Manager
California American Water

APPENDICES

Appendix A – Tables of Applicable Mitigation Measures Identified in FEIR MMRP

Appendix B – Project Location Overview and Construction Footprint Maps

Appendix C – Estimated Construction Schedule

Appendix D – Technical Plans, Reports and Other Documentation

[1] The Construction Manager will also serve as the Construction Disturbance Coordinator pursuant to Mitigation Measure 4.12-1a.

Appendix A

Tables of Applicable Mitigation Measures Identified in FEIR MMRP

- Applicable Pre Construction FEIR/EIS Mitigation Measures
- Applicable During Construction FEIR/EIS Mitigation Measures
- Applicable During Operation FEIR/EIS Mitigation Measures
- Applicable Post Operation FEIR/EIS Mitigation Measures

Applicable Pre Construction FEIR/EIS Mitigation Measures

Applicable Pre Construction FEIR/EIS Mitigation Measures

Mitigation Measure #	Mitigation Measure Title	NTPR-1: Seaside Transmission Main (non-Army roadways)		
		Status	Status Detail	Anticipated Completion Date
MM 4.3-4	Operational [Brine] Discharge Monitoring, Analysis, Reporting, and Compliance	N/A	Applies to brine discharge only	
APM 4.4-3	Groundwater Monitoring and Avoidance of Well Damage	N/A	Groundwater not present at proposed excavation depths. See GARNEY SOURCE	
MM 4.4-4	Groundwater Monitoring and Avoidance of Impacts on Groundwater Remediation Plumes	Complete	See Garney Submittal No. 06 - Groundwater Management Plan in Appendix D.	
MM 4.6-1a	Retain a Lead Biologist to Oversee Implementtion of Protective Measures	Complete	Lead Biologist, Rosemary Laird, AECOM, retained; biological monitor resumes submitted to agencies.	
MM 4.6-1b	Construction Worker Environmental Awareness Training and Education Program	In preparation	Video with voice-over being prepared by Lead Biologist for use prior to construction. A copy of the training transcript/DVD will be provided in advance, and names of all personnel who attended the training with signed acknowledgement forms will be submitted to the CPUC following the pre-construction training.	9/9/2019
MM 4.6-1c	General Avoidance and Minimization Measures	Complete	See Garney Submittal No. 08 - General Avoidance and Minimization Measures in Appendix D.	
MM 4.6-1d	Protective Measures for Western Snowy Plover	N/A	No habitat present or impacted. All work in paved areas.	
MM 4.6-1e	Avoidance and Minimization Measures for Special-status Plants	N/A	No habitat present or impacted. All work within paved areas.	
MM 4.6-1f	Avoidance and Minimization Measure for Smith's Blue Butterfly	N/A	No habitat present or impacted. All work within paved areas.	
MM 4.6-1g	Avoidance and Minimization Measures for Black Legless Lizard, Silvery Legless Lizard, and Coast Horned Lizard	N/A	No habitat present or impacted. All work within paved areas.	
MM 4.6-1h	Avoidance and Minimization Measures for Western Burrowing Owl	N/A	No habitat present or impacted. All work within paved areas.	
MM 4.6-1i	Avoidance and Minimization Measures for Nesting Birds	N/A	No work will be performed during nesting bird survey season.	
MM 4.6-1j	Avoidance and Minimization Measures for American Badger	N/A	No habitat present or impacted. All work within paved areas.	
MM 4.6-1k	Avoidance and Minimization Measures fro Monterey Dusky-Footed Woodrat	N/A	No habitat present or impacted. All work within paved areas.	
MM 4.6-1l	Avoidance and Minimization Measures for Special-Status Bats	N/A	No habitat present or impacted. All work within paved areas away from bridges/trees used for roosting.	
MM 4.6-1m	Avoidance and Minimization Measures for Native Stand of Monterey Pine	N/A	No habitat present or impacted. All work within paved areas.	
MM 4.6-1n	Habitat Mitigation and Monitoring Plan	N/A	No habitat present or impacted. All work within paved areas.	

Applicable Pre Construction FEIR/EIS Mitigation Measures

Mitigation Measure #	Mitigation Measure Title	NTPR-1: Seaside Transmission Main (non-Army roadways)		
		Status	Status Detail	Anticipated Completion Date
MM 4.6-1o	Avoidance and Minimization Measures for California Red-Legged Frog and California Tiger Salamander	N/A	No habitat present or impacted. All work within paved areas.	
MM 4.6-1p	Control Measures for Spread of Invasive Plants			
MM 4.6-1q	Frac-out Contingency Plan	N/A	No Jack-and-Bore or HDD proposed.	
MM 4.6-2a	Consultation with Local Agencies and the California Coastal Commission regarding Environmentally Sensitive Habitat Areas	N/A	No work proposed within Coastal Zone or ESHA.	
MM 4.6-2b	Avoid, Minimize, and Compensate for Construction Impacts to Sensitive Communities and Environmentally Sensitive Habitat Areas	N/A	No work proposed within Coastal Zone or ESHA.	
MM 4.6-3	Avoid, Minimize, and or Mitigate Impacts to Wetlands	N/A	No work proposed within wetlands.	
MM 4.6-4	Compliance with Local Tree Ordinances.	N/A	No tree removal or trimming is proposed.	
MM 4.7-2a	Health and Safety Plan	Complete	See Garney Submittal No. 04 - Site Specific Safety and Health Plan in Appendix D	
MM 4.7-2b	Soil and Groundwater Management Pan	Complete	See Garney Submittal No. 04 - Site Specific Safety and Health Plan regarding cave-ins and contaminated soils, and Submittal No. 06 - Groundwater Management Plan in Appendix D.	
MM 4.9-1	Traffic Control and Safety Assurance Plan	Complete	See Garney Submittal No. 09 - Construction Vehicle Movement Plan and City of Seaside-approved Traffic Control Plans in Appendix D.	
MM 4.9-6	Roadway Rehabilitation Program	Complete	Garney has prepared 1,400 Preconstruction Photos and Videos that are georeferenced (available upon request)	
MM 4.9-7	Construction Parking Requirements	Complete	See Garney Submittal No. 01 - Construction Equipment Efficiency Plan in Appendix D	
MM 4.9-C	Construction Traffic Coordination Plan	Complete	See Garney Submittal No. 09 - Construction Vehicle Movement Plan and City of Seaside-approved Traffic Control Plans in Appendix D.	
MM 4.10-1a	Equipment with High-Tiered Engine Standards	Complete	All Garney diesel equipment (owned and rented) are 4 years old or less and meet the most efficient Tier 4 standards (Sean Summers, Garney Project Manager).	
MM 4.10-1b	Idling Restrictions	Complete	See Garney Submittal No. 01 - Construction Equipment Efficiency Plan in Appendix D	
MM 4.10-1c	Construction Fugitive Dust Control Plan	Complete	See Garney Submittal No. 07 - Dust Control Plan - Transfer Pipeline in Appendix D.	
MM 4.10-1e	Off-site Mitigation Program	N/A	No off-site mitigation program required.	

Applicable Pre Construction FEIR/EIS Mitigation Measures

Mitigation Measure #	Mitigation Measure Title	NTPR-1: Seaside Transmission Main (non-Army roadways)		
		Status	Status Detail	Anticipated Completion Date
MM 4.11-1	GHG Emissions Reductions Plan	Drafted	See AECOM draft GHG Reduction Plan attached to MMCRP.	8/30/2019
MM 4.12-1a	Neighborhood Notice and Construction Disturbance Coordinator	Scheduled	Coordinating with CalAm, Garney and AECOM	8/30/2019
MM 4.12-1b	General Noise Controls for Construction Equipment and Activities	Complete	See Garney Submittal No. 05 - Daytime Noise Control Plan in Appendix D.	
MM 4.12-1c	Noise Control Plan for Nighttime Pipeline Construction	N/A	No nighttime work is proposed.	
MM 4.12-1d	Additional Noise Controls for ASR-5 and ASR-6 Wells	N/A	Not applicable to this work area.	
MM 4.12-1e	Offsite Accommodations for Substantially Affected Nighttime Receptors	N/A	No nighttime work is proposed.	
MM 4.13-1a	Locate and Confirm Utility Lines	Complete	See Garney emails with USA North 811 with Confirmation for Ticket to Survey the project corridor in Appendix D. Also see final potholing logs prepared for project corridor (LAWRENCE HAS?).	
MM 4.13-1b	Coordinate Final Construction Plans with Affected Utilities	Complete	Garney has received and provided utilities with USA tickets (see Appendix D).	
MM 4.13-1d	Emergency Response Plan	Complete	See Garney Submittal No. 04 - Site Specific Safety and Health Plan containing a Emergency Action Plan	
MM 4.13-1e	Notify Local Fire Departments	Complete	See Garney email to and response from affected fire department in Appendix D.	
MM 4.13-2	Construction Waste Reduction and Recycling Plan	Complete	See Garney Submittal No. 03 - Material Recycling and Disposal Plan in Appendix D.	
MM 4.13-5b	Install Protective Lining in Land Segment of M1W Ocean Outfall	N/A	Applies to brine discharge only	
MM 4.14-1	Maintain Clean and Orderly Construction Sites	On-going	To be documented by CalAm/CPUC monitors	
MM 4.14-2	Site-Specific Nighttime Lighting Measures	N/A	Nighttime work not proposed.	
MM 4.14-3a	Facility Design	As needed	To be documented by CalAm/CPUC monitors	
MM 4.14-3b	Facility Screening	As needed	To be documented by CalAm/CPUC monitors	
MM 4.15-2a	Establish Archaeologically Sensitive Areas	Complete	See AECOM Archaeological Monitoring Plan attached to MMCRP.	
MM 4.16-1	Minimize Disturbance to Farmland	N/A	All work in paved areas. No work within farmland.	
MM 4.18-1	Construction Equipment and Vehicle Efficiency Plan	Complete	See Garney Submittal No. 01 - Construction Equipment Efficiency Plan in Appendix D.	

Applicable During Construction FEIR/EIS Mitigation Measures

Applicable During Construction FEIR/EIS Mitigation Measures

Mitigation Measure #	Mitigation Measure Title	NTPR-1: Seaside Transmission Main (non-Army roadways)		
		Status	Status Detail	Anticipated Completion Date
MM 4.3-4	Operational [Brine] Discharge Monitoring, Analysis, Reporting, and Compliance	N/A	Applies to brine discharge only.	
MM 4.3-5	Implement Protocols to Avoid Exceeding Water Quality Objectives	On-going	Protocols to be conducted as-needed.	
APM 4.4-3	Groundwater Monitoring and Avoidance of Well Damage	N/A	See Garney Submittal No. 06 - Groundwater Management Plan in Appendix D.	
MM 4.6-1c	Protective Measures for Western Snowy Plover	N/A	No habitat present or impacted. All work in paved areas.	
MM 4.6-1d	General Avoidance and Minimization Measures	N/A	No habitat present or impacted. All work in paved areas.	
MM 4.6-1e	Avoidance and Minimization Measures for Special-status Plants	N/A	No habitat present or impacted. All work within paved areas.	
MM 4.6-1f	Avoidance and Minimization Measure for Smith's Blue Butterfly	N/A	No habitat present or impacted. All work within paved areas.	
MM 4.6-1h	Avoidance and Minimization Measures for Western Burrowing Owl	N/A	No habitat present or impacted. All work within paved areas.	
MM 4.6-1i	Avoidance and Minimization Measures for Nesting Birds	N/A	No work will be performed during nesting bird survey season.	
MM 4.6-1k	Avoidance and Minimization Measures fro Monterey Dusky-Footed Woodrat	N/A	No habitat present or impacted. All work within paved areas.	
MM 4.6-1l	Avoidance and Minimization Measures for Special-Status Bats	N/A	No habitat present or impacted. All work within paved areas away from bridges/trees used for roosting.	
MM 4.6-1m	Avoidance and Minimization Measures for Native Stand of Monterey Pine	N/A	No habitat present or impacted. All work within paved areas.	
MM 4.6-1n	Habitat Mitigation and Monitoring Plan	N/A	No habitat present or impacted. All work within paved areas.	
MM 4.6-1o	Avoidance and Minimization Measures for California Red-Legged Frog and California Tiger Salamander	N/A	No habitat present or impacted. All work within paved areas.	
MM 4.6-1p	Control Measures for Spread of Invasive Plants	On-going	To be performed and documented by Lead Field Monitor (AECOM).	

Applicable During Construction FEIR/EIS Mitigation Measures

Mitigation Measure #	Mitigation Measure Title	NTPR-1: Seaside Transmission Main (non-Army roadways)		
		Status	Status Detail	Anticipated Completion Date
MM 4.6-1q	Frac-out Contingency Plan	N/A	No Jack-and-Bore or HDD proposed.	
MM 4.6-2b	Avoid, Minimize, and Compensate for Construction Impacts to Sensitive Communities and Environmentally Sensitive Habitat Areas	N/A	No work proposed within Coastal Zone or ESHA.	
MM 4.6-3	Avoid, Minimize, and or Mitigate Impacts to Wetlands	N/A	No work proposed within wetlands.	
MM 4.9-1	Traffic Control and Safety Assurance Plan	Complete	See Garney Submittal No. 09 - Construction Vehicle Movement Plan and City of Seaside-approved Traffic Control Plans in Appendix D.	
MM 4.10-1c	Construction Fugitive Dust Control Plan	Complete	See Garney Submittal No. 07 - Dust Control Plan - Transfer Pipeline in Appendix D.	
MM 4.10-1e	Off-site Mitigation Program	N/A	No off-site mitigation program required.	
MM 4.11-1	GHG Emissions Reductions Plan	Drafted	See AECOM GHG Reduction Plan in attached to MMCRP.	8/30/2019
MM 4.12-1a	Neighborhood Notice and Construction Disturbance Coordinator	On-going	Performed by CalAm, Garney and AECOM.	8/30/2019
MM 4.12-1b	General Noise Controls for Construction Equipment and Activities	Complete	See Garney Submittal No. 05 - Daytime Noise Control Plan in Appendix D.	
MM 4.12-1d	Additional Noise Controls for ASR-5 and ASR-6 Wells	N/A	Not applicable to this work area.	
MM 4.12-1e	Offsite Accommodations for Substantially Affected Nighttime Receptors	N/A	No nightime work is proposed.	
MM 4.12-3	Vibration Reduction Measures	N/A	No sensitive resources are present	
MM 4.12-4	Nighttime Construction Restrictions in Marina	N/A	No nightime work is proposed.	
MM 4.12-5	Stationary-Source Noise Controls	N/A	No stationary sources of noise are proposed.	
MM 4.13-1c	Safeguard Employees from Potential Accidents Related to Underground Utilities	On-going	See Garney Submittal No. 04 - Site Specific Safety and Health Plan in Appendix D. Also see USA tickets provided to utility companies.	
MM 4.13-1f	Ensure Prompt Reconnection of Utilities	On-going	See Garney Submittal No. 04 - Site Specific Safety and Health Plan in Appendix D.	

Applicable During Construction FEIR/EIS Mitigation Measures

Mitigation Measure #	Mitigation Measure Title	NTPR-1: Seaside Transmission Main (non-Army roadways)		
		Status	Status Detail	Anticipated Completion Date
MM 4.13-5a	Replacement of WEKO seal clamps, Periodic Inspections, and As-Needed Repairs for Offshore Segment of M1W Ocean Outfall	N/A	Applies to brine discharge only.	
MM 4.13-5b	Install Protective Lining in Land Segment of M1W Ocean Outfall	N/A	Applies to brine discharge only.	
MM 4.14-2	Site-Specific Nighttime Lighting Measures	N/A	Nighttime work not proposed.	
MM 4.15-2a	Establish Archaeologically Sensitive Areas	Complete	See AECOM Archaeological Monitoring Plan attached to MMCRP.	
MM 4.15-2b	Inadvertent Discovery of Cultural Resources	On-going	See AECOM Archaeological Monitoring Plan attached to MMCRP.	
MM 4.15-4	Inadvertent Discovery of Human Remains	On-going	See AECOM Archaeological Monitoring Plan attached to MMCRP.	
MM 4.16-1	Minimize Disturbance to Farmland	N/A	All work in paved areas. No work within farmland.	

Applicable During Operation FEIR/EIS Mitigation Measures

Applicable During Operation FEIR/EIS Mitigation Measures

Mitigation Measure #	Mitigation Measure Title	NTPR-1: Seaside Transmission Main (non-Army roadways)		
		Status	Status Detail	Anticipated Completion Date
MM 4.2-10	Slant Well Abandonment Plan	N/A	No well abondonment proposed under NTPR-1.	
MM 4.3-4	Operational Discharge Monitoring, Analysis, Reporting, and Compliance	As needed	See SWPPP. Applies to final testing and conditioning of final pipeline.	
MM 4.3-4	Operational [Brine] Discharge Monitoring, Analysis, Reporting, and Compliance	N/A	Applies to brine discharge only	
MM 4.3-5	Implement Protocols to Avoid Exceeding Water Quality Objectives	On-going	See SWPPP.	
APM 4.4-3	Groundwater Monitoring and Avoidance of Well Damage	On-going	See Garney Submittal No. 06 - Groundwater Management Plan in Appendix D. No well sites associated work proposed under NTPR-1.	
MM 4.6-1a	Retain a Lead Biologist to Oversee Implementtion of Protective Measures	On-going	Lead Biologist, Rosemary Laird, AECOM, retained; biological monitor resumes submitted to agencies.	
MM 4.6-1c	General Avoidance and Minimization Measures	On-going	See Garney Submittal No. 08 - General Avoidance and minimization Measures in Appendix D.	
MM 4.6-1d	Protective Measures for Western Snowy Plover	N/A	No habitat present or impacted. All work in paved areas.	
MM 4.6-1e	Avoidance and Minimization Measures for Special-status Plants	N/A	No habitat present or impacted. All work within paved areas.	
MM 4.6-1f	Avoidance and Minimization Measure for Smith's Blue Butterfly	N/A	No habitat present or impacted. All work within paved areas.	
MM 4.6-1g	Avoidance and Minimization Measures for Black Legless Lizard, Silvery Legless Lizard, and Coast Horned Lizard	N/A	No habitat present or impacted. All work within paved areas.	
MM 4.6-1i	Avoidance and Minimization Measures for Nesting Birds	N/A	No work will be performed during nesting bird survey season.	
MM 4.6-1m	Avoidance and Minimization Measures for Native Stand of Monterey Pine	N/A	No habitat present or impacted. All work within paved areas.	
MM 4.6-1n	Habitat Mitigation and Monitoring Plan	N/A	No habitat present or impacted. All work within paved areas.	
MM 4.6-1o	Avoidance and Minimization Measures for California Red-Legged Frog and California Tiger Salamander	N/A	No habitat present or impacted. All work within paved areas.	
MM 4.6-1p	Control Measures for Spread of Invasive Plants	On-going	Conducted by Lead Field Monitor or desigee (AECOM)	

Applicable During Operation FEIR/EIS Mitigation Measures				
Mitigation Measure #	**Mitigation Measure Title**	**NTPR-1: Seaside Transmission Main (non-Army roadways)**		
		Status	**Status Detail**	**Anticipated Completion Date**
MM 4.6-2b	Avoid, Minimize, and Compensate for Construction Impacts to Sensitive Communities and Environmentally Sensitive Habitat Areas	N/A	No work proposed within Coastal Zone or ESHA.	
MM 4.6-2b	Avoid, Minimize, and Compensate for Construction Impacts to Sensitive Communities and Environmentally Sensitive Habitat Areas	N/A	No work proposed within wetlands.	
MM 4.6-6	Installation and Monitoring of Bird Deterrents at the Brine Storage Basin.	N/A	No work proposed at proposed brine storage basin	
MM 4.11-1	GHG Emissions Reductions Plan	Drafted	See AECOM draft GHG Reduction Plan in MMCRP.	8/9/2019
MM 4.13-5a	Replacement of WEKO seal clamps, Periodic Inspections, and As-Needed Repairs for Offshore Segment of M1W Ocean Outfall	N/A	Applies to brine discharge only	
MM 4.14-2	Site-Specific Nighttime Lighting Measures	N/A	Nighttime work not proposed.	
MM 4.14-3a	Facility Design	As needed	To be documented by CalAm/CPUC monitors	
MM 4.14-3b	Facility Screening	As needed	To be documented by CalAm/CPUC monitors	

Applicable Post Operation FEIR/EIS Mitigation Measures

Applicable Post Operation FEIR/EIS Mitigation Measures

Mitigation Measure #	Mitigation Measure Title	NTPR-1: Seaside Transmission Main (non-Army roadways)		
		Status	Status Detail	Anticipated Completion Date
MM 4.2-10	Slant Well Abandonment Plan	N/A	N/A (not applicable)	

Appendix B

Project Location Overview and Construction Footprint Maps

- Project Location Overview Map
- Construction Footprint Map

Project Location Overview Map

AECOM Oakland CA 8/19/2019 USER sally.shatford PATH L:\Projects\GIS\Projects\CAW_Monterey\Maps\Permitting\2019\NTPR-1\AppendixB_NTPR-1_ProjectLocationOverview.mxd

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Source: ESRI, 2019; California American Water, 2019

AECOM
California American Water
Transmission Mains and Aquifer Storage & Recovery
MONTEREY PENINSULA WATER SUPPLY PROJECT, MPWSP

APPENDIX B

NTPR - 1 Project Location Overview Map

Construction Footprint Map

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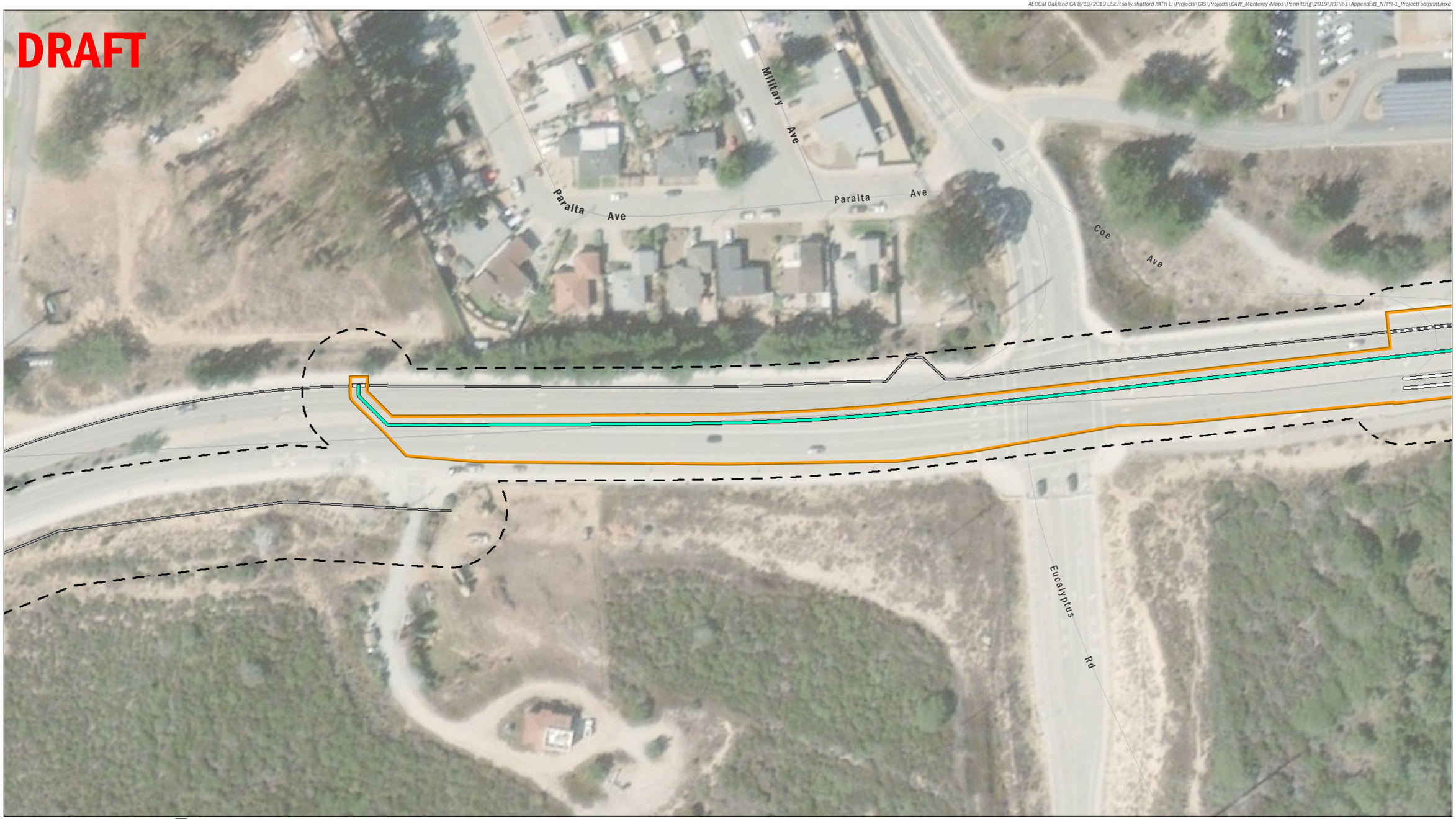

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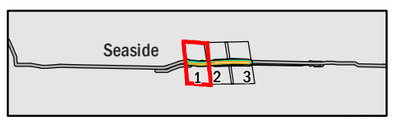
Biological Study Area
NTPR-1 Project Footprint

Pipeline Alignment
Proposed Transmission Main (in roadway)
Proposed ASR Pipelines (Conveyance, Pump-to-Waste and Recirculation)
Pipeline Existing
Pipeline Outside NTPR-1 Footprint

Source: ESRI, 2019; California American Water, 2019



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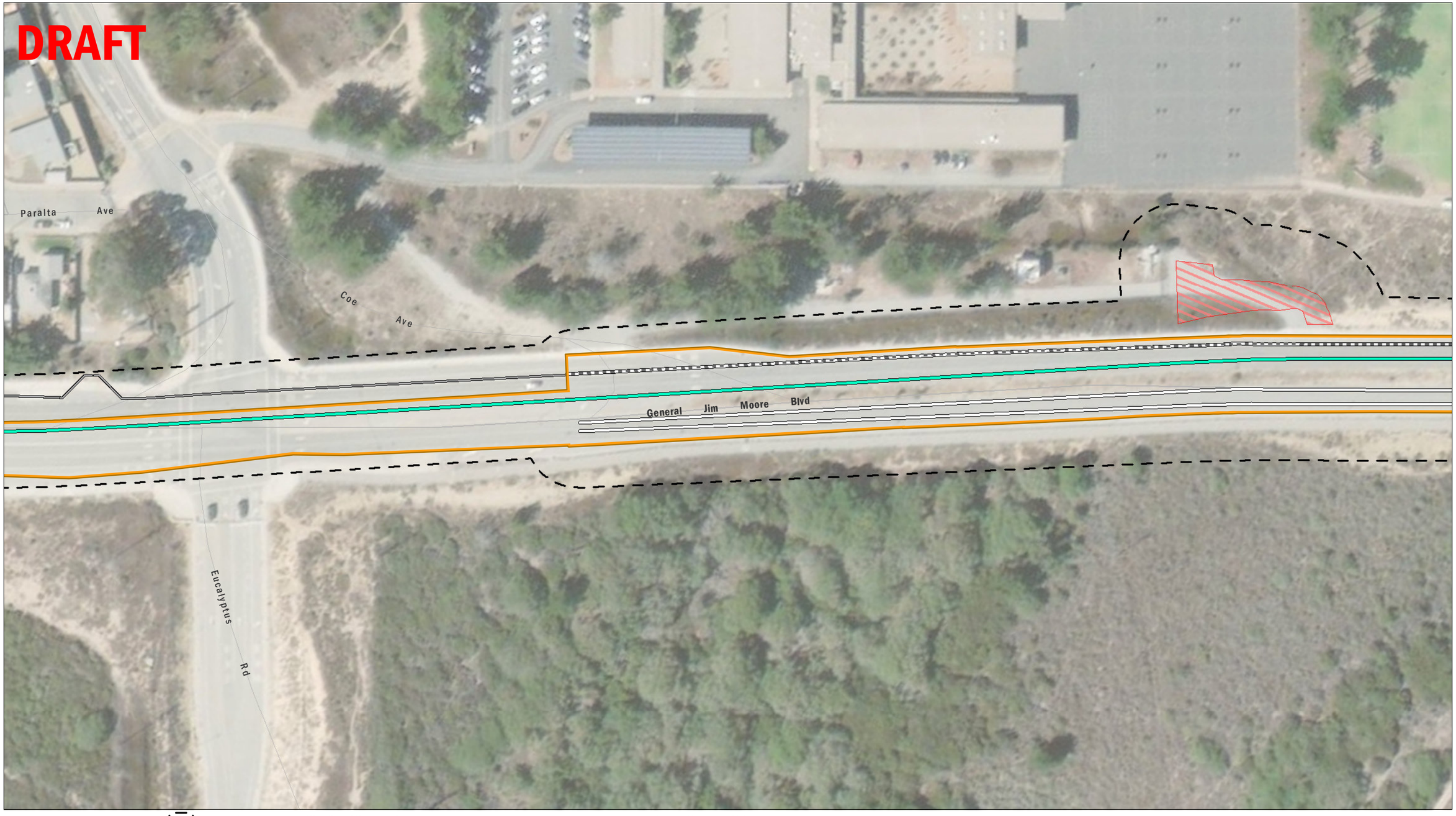

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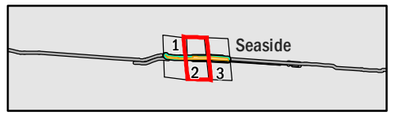
Feet

Biological Study Area
Staging Area
NTPR-1 Project Footprint

Pipeline Alignment
Proposed Transmission Main (in roadway)
Proposed ASR Pipelines (Conveyance, Pump-to-Waste and Recirculation)
Pipeline Existing
Pipeline Outside NTPR-1 Footprint

Source: ESRI, 2019; California American Water, 2019



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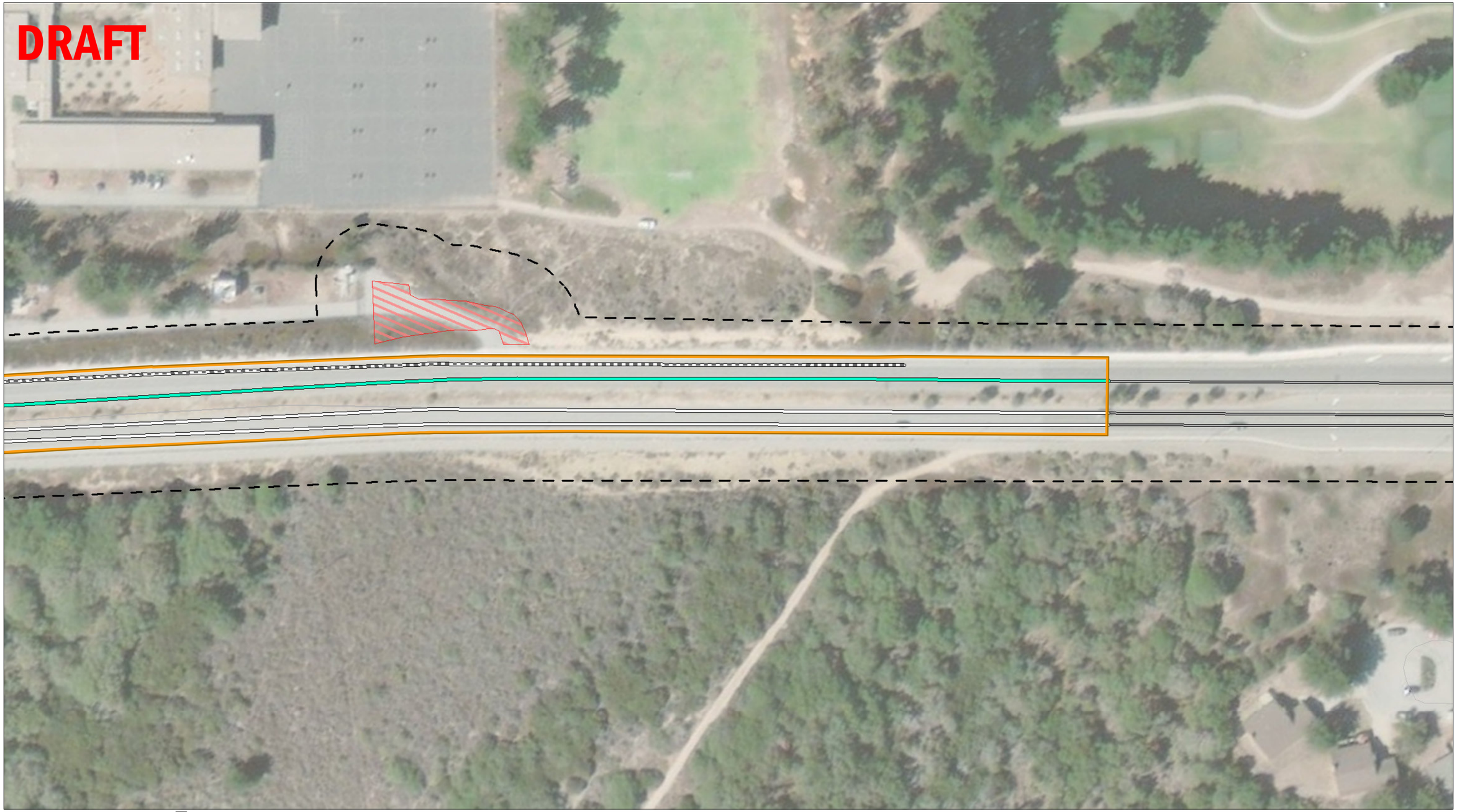

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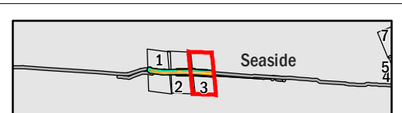
Biological Study Area
Staging Area
NTPR-1 Project Footprint

Pipeline Alignment
Proposed Transmission Main (in roadway)
Proposed ASR Pipelines (Conveyance, Pump-to-Waste and Recirculation)
Pipeline Existing
Pipeline Outside NTPR-1 Footprint

Source: ESRI, 2019; California American Water, 2019



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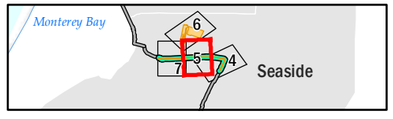
0 100 Feet

Biological Study Area
NTPR-1 Project Footprint

Pipeline Alignment
Proposed Transmission Main (in roadway)
Pipeline Outside NTPR-1 Footprint

Source: ESRI, 2019; California American Water, 2019

Source: ESRI, 2019; California American Water, 2019



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1St St

2Nd Ave

0 100
Feet

Biological Study Area
Staging Area
Staging Area Access Road
NTPR-1 Project Footprint

Source: ESRI, 2019; California American Water, 2019

AECOM
California American Water
Transmission Main and Aquifer Storage & Recovery (ASR) Facilities
MONTEREY PENNINSULA WATER SUPPLY PROJECT, MPWSP

APPENDIX B
NTPR-1 Construction Footprint Map
Page 6 of 7

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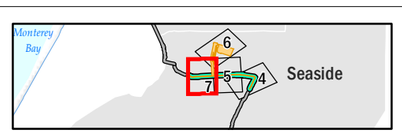
N

0 100
Feet

Biological Study Area
Staging Area Access Road
NTPR-1 Project Footprint

Pipeline Alignment
Proposed Transmission Main (in roadway)
Pipeline Outside NTPR-1 Footprint

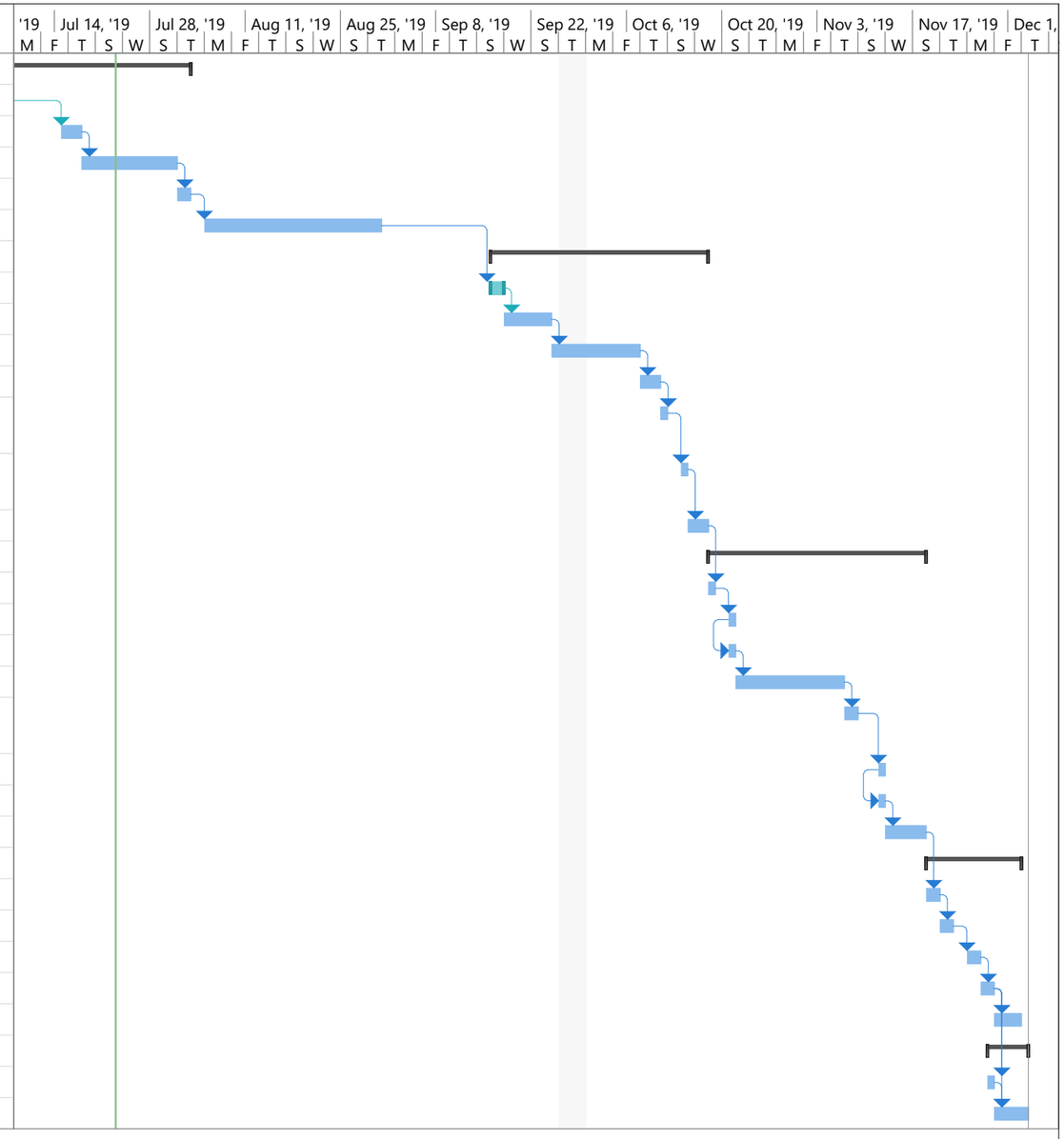
Source: ESRI, 2019; California American Water, 2019



Appendix C

Estimated Construction Schedule

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1		**Potholing**	**65 days**	**Mon 5/6/19**	**Fri 8/2/19**	
2		USA	2 days	Mon 5/6/19	Tue 5/7/19	
3		Pothole Lightfighter	3 days	Mon 7/15/19	Wed 7/17/19	2
4		Pothole General Jim Moore	10 days	Thu 7/18/19	Wed 7/31/19	3
5		Soil Sampling for AECOM	2 days	Thu 8/1/19	Fri 8/2/19	4
6		**Pot Hole Review for Design Changes**	20 days	Mon 8/5/19	Fri 8/30/19	5
7		**GENERAL JIM MOORE (Install in Seaside ROW)**	**22 days**	**Mon 9/16/19**	**Thu 10/17/19**	
8		Mobilize Equipment and Materials	2 days	Mon 9/16/19	Tue 9/17/19	6
9		Install Sta. 23+11 to Sta. 31+50 (Coe Ave.)	5 days	Wed 9/18/19	Tue 9/24/19	8
10		Install Sta. 31+50 to Sta. 42+43 (AV-1)	7 days	Wed 9/25/19	Mon 10/7/19	9
11		Install 43+32 to Sta. 47+94 (Fort Ord PL)	3 days	Tue 10/8/19	Thu 10/10/19	10
12		Remobilize Equipment/Material to General Jim STA 127+00	1 day	Fri 10/11/19	Fri 10/11/19	11
13		Install Sta. 127+00 (Fort Ord PL) to Sta. 128+16 (AV-6)	1 day	Mon 10/14/19	Mon 10/14/19	12
14		Install Sta. 128+16 to Sta. 132+21	3 days	Tue 10/15/19	Thu 10/17/19	13
15		**LIGHTFIGHTER DR**	**21 days**	**Fri 10/18/19**	**Mon 11/18/19**	
16		Install Sta. 132+21 to Sta. 132+91 (BO-7)	1 day	Fri 10/18/19	Fri 10/18/19	14
17		Install Sta. 132+91 to Sta. 133+23 (WV-7)	1 day	Mon 10/21/19	Mon 10/21/19	16
18		Install WV-7 Sta. 133+23	1 day	Mon 10/21/19	Mon 10/21/19	17SS
19		Install Sta. 133+23 to Sta. 152+06 (AV-7)	12 days	Tue 10/22/19	Wed 11/6/19	18
20		Install Sta. 152+63 to Sta. 2+88 (WV-8; STA EQ at 153+31)	2 days	Thu 11/7/19	Fri 11/8/19	19
21		Install WV-8 Sta. 2+88	1 day	Tue 11/12/19	Tue 11/12/19	20
22		Install Sta. 2+88 to Sta. 2+95 (BO-8)	1 day	Tue 11/12/19	Tue 11/12/19	21SS
23		Install Sta. 2+95 to Sta. 8+25	4 days	Wed 11/13/19	Mon 11/18/19	22
24		**Appurtenances**	**10 days**	**Tue 11/19/19**	**Mon 12/2/19**	
25		Install AV-1 Sta. 43+42	2 days	Tue 11/19/19	Wed 11/20/19	23
26		Install AV-6 Sta. 128+16	2 days	Thu 11/21/19	Fri 11/22/19	25
27		Install BO-7 Sta. 132+91	2 days	Mon 11/25/19	Tue 11/26/19	26
28		Install AV-7 Sta. 152+06	2 days	Wed 11/27/19	Thu 11/28/19	27
29		Install BO-8 Sta. 2+95	2 days	Fri 11/29/19	Mon 12/2/19	28
30		**Pavement Restoration**	**4 days**	**Thu 11/28/19**	**Tue 12/3/19**	
31		Pave Sta. 23+11 to Sta. 47+94	1 day	Thu 11/28/19	Thu 11/28/19	28FS-1 day
32		Pave Sta. 127+00 to Sta. 1+25	3 days	Fri 11/29/19	Tue 12/3/19	28,31



Project: Transfer Pipe Phase 1-
Date: Tue 7/23/19

Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone	

Appendix D

Technical Plans, Reports and Other Documentation

- Garney Construction Plans
- City of Seaside Encroachment Permit
- USA Utility Clearance Tickets
- Notification of Construction
- FORA Construction Support Plans

Garney Construction Plans

Garney CONSTRUCTION
ADVANCING WATER

324 E. 11th Street, Suite E2
Tracy, CA, 95376

Phone: 816-741-4600
Fax: 209-229-1870

Submittal No. **001**

Project: Monterey Peninsula Water Supply Project - Transfer and Feed Water Pipelines **Date: 7/17/2019**
Contractor: Garney Construction **Sub/Supplier: Garney Construction**

To: California American Water
511 Forest Lodge Rd.
Suite 100
Pacific Grove, CA 93950

Ref: X **New Submittal**
_____ **Resubmittal**

Attn: Christopher Cook

We Are Sending:		Submitted For:		Action Taken:	
	Shop Drawings	X	Approval		Approved as Submitted
X	Letter		Your Use		Approved as Noted
	Prints		As Requested		Returned After Loan
	Change Order		Review and Comment		Resubmit
	Plans		Information Only	X	Submitted
	Samples	Sent Via:			Returned
	Specifications	X	Attached		Returned for Corrections
	Other:		Separate Cover Via:		

Submittal Type: Product Data

The Following Items are Hereby Submitted:

Submittal No.	Description	Drawing / Detail #	Spec. Section	Qty	Contains Variation to Specifications Yes	No
001	Construction Equipment Efficiency Plan	N/A	01062-25, MM 4.18-1, MM 4.10-1b, MM 4.9-7	.PDF		X

Remarks:

Please find the attached submittal for equipment efficiency plan which includes language regarding our participation in the California ARB DOORS program.

Please contact the undersigned should there be any questions or comments regarding this submittal.

Contractor's Stamp
The undersigned certifies that review, approval, verification of Products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.

Signed: Nick Hansen
Nick Hansen - Garney Construction

Construction Equipment Efficiency Plan

Transfer and Feed Water Pipelines

Garney Project #1115

Overview:

Garney Construction is committed to ensuring all work will be performed with equipment that meets or exceeds efficiency and emission requirements. By utilizing our fleet of all new equipment with modern emission, noise, and safety standards, our goal is to enable our crews to work in an efficient manner with minimal impact to the surrounding area. Garney is also enrolled in the California Air Resources Board Diesel Off-Road On-Line Reporting System (Calif ARB DOORS) which ensures all equipment is registered and in compliance with all California ARB regulations. The below items provide information on our equipment idling, maintenance, electrical sources, and general material routing information in regards to the Monterey Pipeline project.

Equipment Idling:

Garney Construction will require all operators to reduce heavy equipment idling onsite to a maximum of 5 minutes per the *California Air Resources Board* requirement on Heavy Duty Diesel Vehicles. As the equipment utilized on this project is new, it is equipped with an automatic shutoff function, where the equipment will automatically shutoff after 5 minutes of idling. This removes any issues with operator error on leaving equipment idling for longer periods.

Maintenance Program:

The Garney Construction project maintenance program starts with reduction of potential mechanical issues by utilizing new equipment (4 years or newer) for all heavy equipment utilized in our fleet. This ensures all equipment used is in compliance with emission (Tier 4) and noise regulations, and reduces the potential for mechanical issues which would decrease efficiency of the equipment. This also means that all of our equipment has modern remote diagnostic monitoring of the drivetrain, and will provide live updates for the project equipment via JDLink for John Deere equipment and Vision Link for CAT equipment. Greg Lutes, Superintendent, is the point of contact for this system, and he will monitor equipment for any maintenance or replacement of parts required. See attachment 1 for online diagnostic example.

Along with the equipment diagnostic reports, all operators are required by Garney to perform an inspection of the equipment and fill out a checklist prior to commencing work everyday. This provides a visual inspection of the equipment along with the remote maintenance system. Should the operator find any issues with the equipment, he is to note it on the checklist and inform the Forman or Superintendent. See Attachment 2 for Garney Equipment checklist.

Electrical Sources:

Due to the linear nature of this project, it is difficult to effectively utilize electrical resources from the power grid for operations during the installation of the pipeline. However, Garney will commit to using electrical resources as wherever possible, including charging of monitoring equipment, battery packs, and any minor tools which run on battery power. This equipment will be charged at the end of shift daily either at the Garney construction office or at the yard in our conex boxes. However, the use of generator will be required for any corded equipment onsite.

Material Routing:

Material to be brought onsite:
In order to ensure pipe and other material for use on the project is transported in an efficient manner, Garney will utilize 3 yards along the project alignment to reduce unnecessary trucking and moving of pipe and equipment. Yards are distributed along the alignment as follows:

South Section of Work – Lightfighter at First Street and the CalAM La Playa Yard

Middle Section of Work – Yard area TBD

North Section of Work – Jefferson Ranch

In addition, Garney intends to stage pipe adjacent to construction along the alignment as allowable in order to minimize additional trucking hauling of materials.

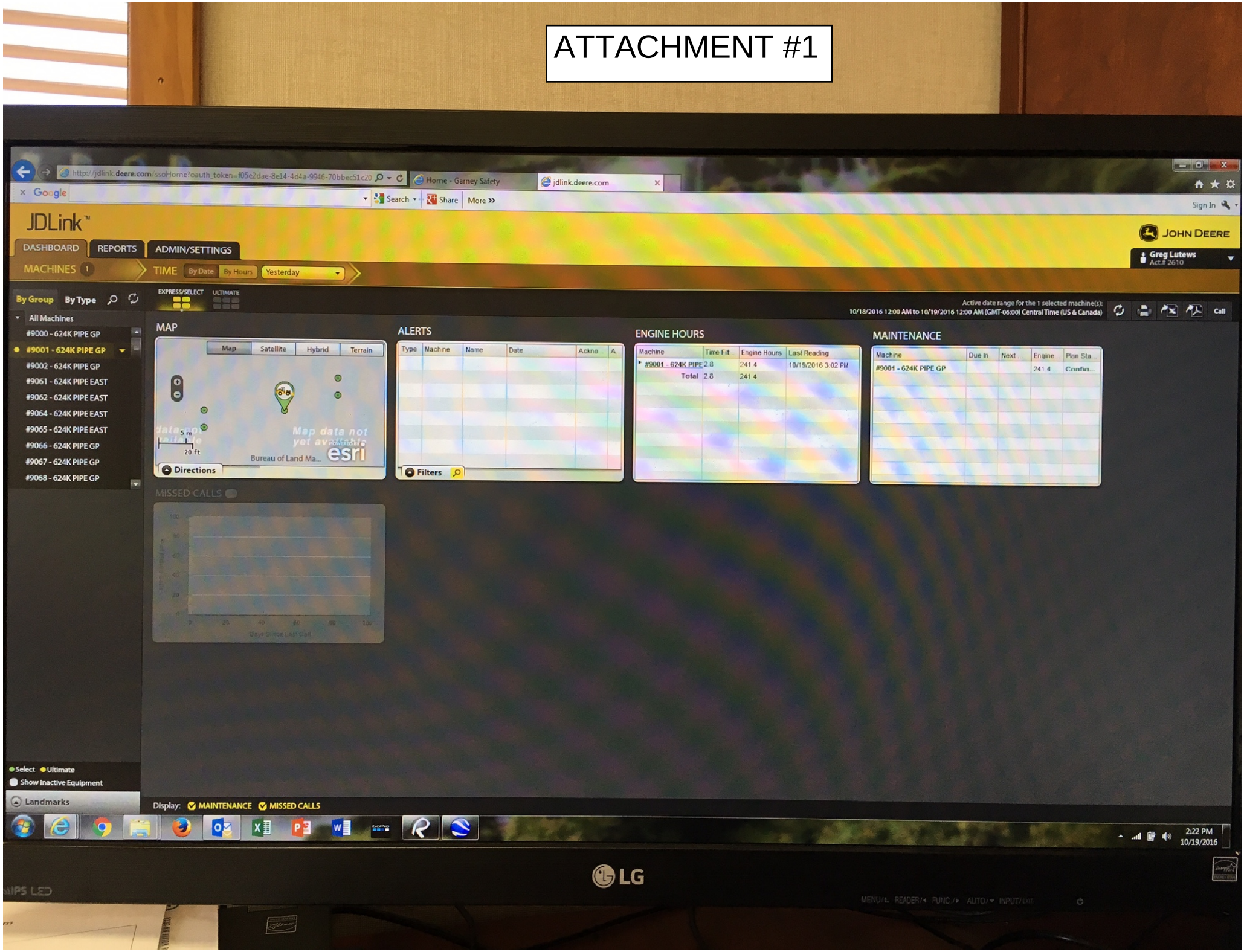
In addition, all truck routes to the project will utilize freeways and arterial routes prior to use of primary and secondary roads. This will allow for more efficient movement of material and reduce congestion issues in local neighborhoods.

Material to be Offhauled:
Offhaul of material will be performed utilizing an SBE trucking company *Arroyo Trucking, Inc*. Arroyo Trucking has been informed to minimize traffic congestion on minor streets along the alignment, as trucks will move to primary streets and arterials as efficiently as possible. All non-hazardous material and any petroleum contaminated soils will be removed to Monterey Regional Waste Management District (Waste acceptance criteria can be found in Attachment 3). This site allows for disposal of materials in the local area to minimize travel.

Any material found to be classified as hazardous will be first tested for levels, and sent to the appropriate hazmat site (to be determined once samples are analyzed).

Material in areas outside of the roadways is anticipated to be left onsite and blended therefore no trucking/road impacts will occur.

ATTACHMENT #1



ATTACHMENT #2

Daily Equipment Inspection

(Please **TYPE or PRINT** All Information)

Instructions: Use this form to document the daily walk around inspection of all equipment on the job site. This inspection sheet is to be completed by the assigned employee owner. Upon the completion at the end of the week please file the completed sheet on-site.

RENTAL EQUIPMENT		COMPANY EQUIPMENT	
PROJECT NAME		JOB NUMBER	
RENTAL COMPANY NAME		OPERATOR'S NAME	
EQUIPMENT DESCRIPTION		SIGNATURE	
UNIT NUMBER		LAST OIL CHANGE (HOURS OR MILES)	
HOURS		WEEK ENDING	

(MARK BOX IF OK)	N/A	S	M	T	W	T	F	S	(DESCRIBE REPAIRS NEEDED OR DAMAGE)
ENGINE OIL LEVEL									
RADIATOR & COOLANT									
HYDRAULIC OIL LEVEL									
TRANSMISSION OIL LEVEL									
AIR FILTER RESTRICTION INDICATOR									
SERVICE & PARK BRAKE									
STEERING									
FIRE EXTINGUISHER									
BACK-UP ALARM									
TIRES (SIDEWALL CUTS)									
CLUTCHES									
BELTS									
BATTERY & ALTERNATOR									
HYDRAULIC HOSES & FITTINGS									
TRACK ROLLERS									
TRACK ADJUSTMENT									
CHAINS & SPROCKETS									
BUCKET									
TEETH & CUTTING EDGES									
CRACKS OR MISSING HARDWARE									
GREASE FITTINGS									
CONTROLS FOR PROPER OPERATION									
GAUGES & WARNING LIGHTS									
INNER AIR FILTER									
OUTER AIR FILTER									
EQUIPMENT (IN & OUT) CLEANLINESS									

DAILY HOURS REPORTING:							
Monday		Tuesday		Wednesday		Sunday	
Thursday		Friday		Saturday			

Revision Date: 01/01/2015

SP File - 07.E.i - _____.WE. __.__.__
Equip # (mm.dd.yy)

ATTACHMENT #3

Monterey Peninsula Landfill

WASTE ACCEPTANCE CRITERIA

FOR SPECIAL WASTES

The Monterey Regional Waste Management District (MRWMD) owns and operates the Monterey Peninsula Landfill (MPL), located at 14201 Del Monte Boulevard, two miles north of Marina, California. MRWMD has developed and implemented a Waste Screening and Acceptance Program to assist in preventing hazardous and other prohibited wastes from entering the facility and to establish procedures and acceptance levels for special (nontraditional) solid wastes.

The MPL accepts non-hazardous special wastes that have been properly sampled, analyzed, and found to be acceptable for disposal at the landfill or for use as cover at the landfill. The MRWMD **does not accept** waste that is defined as hazardous by RCRA and/or CCR Title 22.

The MPL is constructed with Subtitle D cells with composite liners and leachate collection and methane management systems. The cells receive predominantly municipal solid waste (including residential and commercial waste) and construction and demolition debris. In addition, the following special wastes may also be accepted for disposal at the landfill:

- Materials which meet California's definition of non-hazardous waste
- Petroleum contaminated soils
- Treated medical wastes
- Non-friable asbestos materials
- Treated wood waste
- Well drilling mud
- Harbor and lake dredgings
- Wastewater and water treatment plant sludge, screenings, and grit containing at least 20% solids.
- Limited volumes of various liquid wastes, with moisture content of greater than 50%
- Household fireplace ash
- Agricultural film plastic

Hazardous waste, friable asbestos, radioactive waste, and untreated medical waste (biohazardous or infectious waste) **are not allowed** for disposal at the MPL

Continued.

PRE-APPROVAL REQUIREMENTS

All special wastes must be pre-approved by MRWMD prior to acceptance at the MPL. MRWMD requires the completion of a Generator Waste Profile, along with any required analytical results before pre-approval will be granted. It is the responsibility of the generator to certify that the materials for management at MPL are non-hazardous per CCR Title 22 Section 66260. For materials that require laboratory analysis, the generator must provide representative analysis. MRWMD's site permits do not require any specific testing requirements or sampling frequency for individual waste streams. The California Department of Toxic Substances Control (DTSC) has developed an Information Advisory for clean fill sampling. This Information Advisory can be found at www.DTSC.ca.gov. Contact DTSC for assistance in developing an appropriate sampling plan for your special wastes.

NON-FRIABLE ASBESTOS ACCEPTANCE PROCEDURES

All non-friable asbestos containing waste must be pre-approved by MRWMD prior to acceptance. The following information provides general requirements for acceptance of non-friable asbestos containing wastes at MPL.

Asbestos containing wastes, which are friable and contain 10,000 ppm (1%) or greater friable asbestos, are regulated as a California Hazardous Waste. Friable asbestos is one that can be reduced to a powder or dust under hand pressure when dry. This classification standard is defined in California Code of Regulations, Section 66261.24. Friable asbestos containing wastes **are not accepted** at MPL.

Non-friable asbestos containing wastes and wastes containing less than 10,000 ppm (1%) friable asbestos are non-hazardous wastes. DTSC considers non-friable asbestos containing waste to be non-hazardous regardless of its asbestos content. If non-friable asbestos has a high probability of being crumbled, pulverized, or reduced to powder, the material will be considered a Regulated Asbestos-Containing Material (RACM) and thus unacceptable for disposal at MPL.

For acceptance at the MPL, the procedures listed below must be followed:

- Non-friable asbestos containing waste must be pre-approved by MRWMD staff prior to acceptance at the MPL.
- Non-friable waste must be double wrapped and sealed in plastic of 6-millimeter (6-mil) thickness, or completely covered in the truck bed by a tightly secured tarp from which the fibers cannot escape.
- Each shipment must be accompanied by a completed Generator Waste Profile manifest form.
- Each load must be scheduled at least 72 hours prior to arrival.
  Hours of acceptance are 7:00 a.m. to 4:00 p.m., Monday – Friday.

Continued

CONTAMINATED SOIL TESTING REQUIREMENTS

The MRWMD reserves the right to require the generator to perform additional analytical testing. The minimum required sampling frequency is as follows:

Stockpiles:	Less than 100 cubic yards:	3 discrete samples.
	100 to 500 cubic yards:	5 discrete samples.
	More than 500 cubic yards:	5 discrete samples plus one additional sample per 250 cubic yards in excess of 500 cubic yards.

PETROLEUM HYDROCARBONS	CONSTITUENT	EPA METHOD
Diesel	TPH (Diesel)	3550/8015
Gasoline	TPH (Gasoline)	5030/8015
	BTEX	5030/8020
	MTBE	8020
	Lead	6020A
Waste Oil	TPH (Diesel, Gasoline, Motor Oil)	8015, 5030
	Volatile Organics	8260/8010/8020
	Semi-Volatile Organics	8270
	Organochlorine Pesticides	8081
	PCBs	8082
	CAM 17 (Title 22) Metals	6020A, 7471
Fuel Oil/Bunker Oil/Hydraulic	TPH	8015
Oil/Kerosene	BTEX	5030/8020

Continued

CONTAMINANT THRESHOLD LIMITS

The MRWMD only accepts material that is represented by analytical results indicating concentrations below the following listed threshold values:

PETROLEUM HYDROCARBONS	THRESHOLD VALUE FOR ACCEPTANCE (1)	
Contaminant	**TTLC (2) (mg/kg)**	**STLC (3) (mg/L)**
MTBE	12	0.6
Benzene	10	0.5
Toluene	24	1.2
Ethylbenzene	18	0.9
Xylene	12	0.6
TPH as Gasoline, Kerosene, or Jet Fuel	1,000	
TPH as Diesel	5,000	
TPH as Motor Oil, Hydraulic, Heating, or Bunker Oil	8,000	

(1) There is no regulatory determined concentration at which point TPH is defined by California or Federal regulations as "hazardous waste".
(2) Total Threshold Limit Concentration.
(3) Soluble Threshold Limit Concentration.

INORGANICS	THRESHOLD VALUE FOR ACCEPTANCE			
Contaminant	**TTLC (mg/kg)**	**Hazardous Waste Criteria(1) (mg/kg)**	**STLC (mg/L)**	**Hazardous Waste Criteria(1) (mg/L)**
Antimony	400	500	0.06	15.0
Arsenic	400	500	0.5	5.0
Barium	8,000	10,000	10	100
Beryllium	60	75	0.04	0.75
Cadmium	80	100	0.05	1.0
Chromium (VI)	400	500	0.5	5.0
Chromium (Total or III)	2,000	2,500	0.5	5.0
Cobalt	6,400	8,000	0.5	80
Copper	2,000	2,500	20	25
Fluoride salts	14,400	18,000	90	180
Lead	800	1,000	0.5	5.0
Mercury	16	20	0.02	0.2
Molybdenum	2,800	3,500	0.1	350
Nickel	1,600	2,000	1.0	20
Selenium	80	100	0.1	1.0
Silver	400	500	0.5	5.0
Thallium	560	700	0.005	7.0
Vanadium	1,920	2,400	0.2	24
Zinc	4,000	5,000	200	250

(1) CCR Title 22 Regulatory Limits (Division 4.5, Chapter 11, Article 2)

Continued.

CONTAMINANT THRESHOLD LIMITS

ORGANIC COMPOUNDS	THRESHOLD VALUE FOR ACCEPTANCE		
Contaminant	**TTLC (mg/kg)**	**STLC (mg/L)**	**TCLP (mg/L)**
Aldrin	1.4	0.14	0.5
Benzene	10	0.5	0.5
Carbon Tetrachloride		0.5	
Chlordane	2.5	0.25	0.03
Chlorobenzene			100
Chloroform			6
Cresols			200
2,4-Dichlorophenoxyacetic acid	100	10	10
DDT, DDE, DOD	1.0	0.1	
1,4-Dichlorobenzene			7.5
1,2-Dichloroethane			0.5
1,1-Dichloroethylene			0.7
2,4-Dinitrotoluene			0.13
Dieldrin	8	0.8	
Dioxin (2,3,7,8-TCDD)	0.01	0.001	
Endrin	0.2	0.02	
Heptachlor	4.7	0.47	0.008
Hexachlorobenzene			0.13
Hexachlorobutadiene			0.5
Hexachloroethane			3.0
Kepone	21	2.1	
Lindane	4	0.4	0.4
Methoxychlor	100	10	10
Methyl Ethyl Ketone			200
Mirex	21	2.1	
Nitrobenzene			2.0
Pentachlorophenol	17	1.7	100
Perchorate	10		
Polychlorinated Biphenyls (PCB's)	50	5	
Pyridine			5.0
Tetrachloroethylene			0.7
Toxaphene	5	0.5	0.5
Trichloroethylene (TCE)	2,040	204	0.5
2,4,5-TP (Silvex)	10	1.0	1.0
2.4,5-Trichlorophenol			400
2,4,6-Trichlorophenol			2.0
Vinyl Chloride			0.2

Continued.

THE DISTRICT DOES NOT ACCEPT WASTE THAT IS DEFINED AS HAZARDOUS UNDER RCRA or CCR Title 22.

For Special Projects requiring information from District Engineer,
contact David Ramirez, P.E.
at dramirez@mrwmd.org or 831-384-5313

Garney CONSTRUCTION
ADVANCING WATER

324 E. 11th Street, Suite E2
Tracy, CA, 95376

Phone: 816-741-4600
Fax: 209-229-1870

Submittal No. **002**

Project: Monterey Peninsula Water Supply Project - Transfer and Feed Water Pipelines **Date:** **7/18/2019**

Contractor: Garney Construction **Sub/Supplier: Kaz and Associates**

To: California American Water
511 Forest Lodge Rd.
Suite 100
Pacific Grove, CA 93950

Ref: X **New Submittal**

_____ **Resubmittal**

Attn: Lawrence Tam

We Are Sending:		Submitted For:		Action Taken:	
	Shop Drawings	X	Approval		Approved as Submitted
X	Letter		Your Use		Approved as Noted
	Prints		As Requested		Returned After Loan
	Change Order		Review and Comment		Resubmit
X	Plans		Information Only	X	Submitted
	Samples	Sent Via:			Returned
	Specifications	X	Attached		Returned for Corrections
	Other:		Separate Cover Via:		

Submittal Type: Product Data

The Following Items are Hereby Submitted:

Submittal No.	Description	Drawing / Detail #	Spec. Section	Qty	Contains Variation to Specifications Yes	No
002	Storm Water Pollution Prevention Plan	N/A	01062	.PDF		X

Remarks:

Please find the attached submittal for the storm water pollution prevention plan.

Please contact the undersigned should there be any questions or comments regarding this submittal.

Contractor's Stamp

The undersigned certifies that review, approval, verification of Products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.

Signed: Nick Hansen

Nick Hansen - Garney Construction

KAZ ASSOCIATES
ENVIRONMENTAL SERVICES

Storm Water Pollution Prevention Plan (SWPPP)

For

Transmission Mains for Monterey Peninsula Water Supply Project (TMMPWSP)

Transfer Pipeline

County of Monterey and Cities of Seaside and Marina

California

LUP Type 1

WDID# _____

Owner:

California American Water Company

511 Forest Lodge Road, Suite 100

Pacific Grove, California 93950

LRP: Tim O'Halloran

Prepared For:

Garney Construction

324 E. 11th St, Suite E2

Tracy, CA 95376

SWPPP Prepared By:

Kaz & Associates, LLC

6600 Goodyear Road

Benicia, CA 94510

Start of Construction:

September 1. 2019

Estimated Completion Date:

January 31, 2021

SWPPP Preparation Date:

July 17, 2019

CONTACT NAME AND PHONE NUMBERS

The following **California American Water Company, Garney Construction** personnel and contracted consultant will be responsible for implementation of the **Transmission Mains Monterey Peninsula Water Supply Project (TMMPWSP) - Transfer Pipeline;** Storm Water Pollution Prevention Plan Program. These personnel will be contacted if any questions arise:

NAME	TITLE	PHONE
Tim O'Halloran	Engineering Manager – LRP/AS California American Water Company	(831) 646-3291
Sean Summers	Project Manager Garney Construction	(415) 350-3219
Brian Thompson	Project Superintendent Garney Construction	(209) 665-9922
Nick Hansen	Project Engineer Garney Construction	(214) 535-1486
Sean Kazemi	QSD/P & Consultant* Kaz & Associates, LLC	(707) 816-2748

On site Project Managers, Superintendents and Construction Foreman are responsible for the following:

- Under the guidance of the site Qualified SWPPP Practitioner (QSP), site managers will conduct routine inspections and documentations of the site to ensure compliance with the General State Construction NPDES Permit including pre-storm, post –storm, and during extended storms
- Elimination of unauthorized discharges
- Implementation of SWPPP, and updating site plan as needed to reflect site conditions and BMPs implemented
- Non-storm water management
- Signing of inspection reports prepared by contracted consultant

*Contracted to prepare SWPPP & site plan, complete SWPPP amendments/update plans, inspect the site and sample run off as necessary or requested by **Garney Construction,** prepare annual report and NOT, and train site staff. Inspections and observations, including areas of concern that need immediate attention will be direct to **Garney Construction** Project Managers and Project Lead Foreman.

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SWPPP Certification by Qualified SWPPP Developer (QSD)

Kaz & Associates, LLC certifies that this Storm Water Pollution Prevention Plan (SWPPP) Amendment and all attachments were prepared by a Qualified SWPPP Developer (QSD) to meet the requirements of the California Construction NPDES General Permit, Order No. 2009-0009-DWQ.

QSD Signature:

QSD Name: Sean Kazemi

Telephone Number: (707) 816-2748

QSD Professional Registration: QSD # 01036

SECTION 1.0 SWPPP REQUIREMENTS

1.1 Introduction

The **Monterey Peninsula Water Supply Project (TMMPWSP) - Transfer Pipeline** will disturb more than one (1) acre of land and is required to apply for coverage under California's General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (General Permit) Order No. 2009 0009 DWQ as amended by Order No. 2010-0014-DWQ (NPDES No. CAS000002) and Order No. 2012-0006-DWQ issued by the State Water Resources Control Board (State Water Board). This Storm Water Pollution Prevention Plan (SWPPP) for construction activities at the **TMMPWSP - Transfer Pipeline** was developed in accordance with Title 40, Code of Federal Regulations (CFR), Parts 122, 123, and 124 under the NPDES Program administered by the California Environmental Protection Agency (CAL EPA) and the SWRCB. This plan was prepared to conform to the requirements outlined in the General Permit (also referred as the Construction General Permit) for a LUP Type 1 project (Attachment A and A.1 of the General Permit).

This SWPPP identifies potential pollutant sources from construction activities at the project that may impact storm water quality and provides effective tools for pollutant prevention and reduction both during construction phases and post construction storm water discharges.

The objective of this site specific SWPPP are the following:

1. To describe the project construction activities
2. To identify the project Risk Classification to comply with General Permit
3. To identify potential construction related sources of storm water pollution associated with all phases of construction activity
4. To identify, eliminate, control or treat all authorized and unauthorized non-storm water discharges.
5. To describe, implement and maintain effective Best Management Practices (BMPs) through the use of Best Available Technology/Best Control Technology (BAT/BCT) standards to reduce or eliminate storm water pollution during all phases of construction
6. Calculations and design details, as well as BMP controls for site run-on

7. Identify post-construction BMPs which will be used to reduce or eliminate pollutants after construction is completed.
8. Identify and provide methods to implement the project Inspection and Monitoring (I & M) program, which includes visual monitoring, Rain Event Action Plan (REAP) and Construction Site Monitoring Program (CSMP) requirements to comply with the General Permit

All Permit Registration Documents (PRDs) will be submitted to the SWRCB via the Stormwater Multi Application and Report Tracking System (SMARTS) by the project owner's (California American Water Company) Legally Responsible Person (LRP) or their Approved Signatory prior to the start of construction. All PRD's will be uploaded to the SMARTS system in order to gain coverage under the Construction General Permit by the California American Water Company's LRP. PRDs include the following:

- Project's Notice of Intent (NOI)
- Risk Assessment Calculations
- Site Map(s) – Appendix C
- Annual Fee
- Electronic Certification Statement from the owner LRP
- QSD/QSP certifications

*Hard copies of the above referenced documents are located in Appendix A.

1.2 SWPPP Availability, Implementation, Amendments

The General Permit (Section XIV.C) requires the SWPPP be available at the construction site during working hours while construction is occurring and shall be made available upon request by a State or Municipal inspector. When the original SWPPP is retained by a crewmember in a construction vehicle and is not currently at the construction site, current copies of the BMPs and map/drawing will be left with the field crew and the original SWPPP shall be made available via a request by radio/telephone. The SWPPP shall be implemented concurrently with the start of ground disturbing activities and throughout all phases of construction. Hard copies of the site specific SWPPP will be located at the on-site construction trailer/office. This site specific SWPPP was developed under the supervision of the following Qualified SWPPP Developer (QSD) listed on the next page:

Name: Sean Kazemi QSD # 01036 Company: Kaz & Associates, LLC

SWPPP Amendments:

Per the General Permit requirements (Section XIV.A), all SWPPP amendments or revisions will be conducted by the QSD or another designated professional who is a QSD. The Amendments must be signed by a QSD (Section VII.B.6) and will be noted in the ***Amendment Log*** located in **Appendix D.**

The following changes have been designated by the QSD as "to be field determined" and constitute minor changes that the QSP may implement based on field conditions.

List of Changes to be Field Determined

Candidate changes for field location or determination by QSP(1)	**Check changes that can be field located or field determined by QSP**
Increase quantity of an Erosion or Sediment Control Measure	*X*
Relocate/Add stockpiles or stored materials	*X*
Relocate or add toilets	*X*
Relocate vehicle storage and/or fueling locations	*X*
Relocate areas for waste storage	*X*
Relocate water storage and/or water transfer location	*X*
Changes to access points (entrance/exits)	*X*
Change type of Erosion or Sediment Control Measure	*X*
Changes to location of erosion or sediment control	*X*
Minor changes to schedule or phases	*X*
Changes in construction materials	*X*
(1) Any field changes not identified for field location or field determination by QSP must be approved by QSD	

1.3 Retention of Records

The General Permit *(Sections I.J.69 and IV.G)* requires that all dischargers maintain a paper or electronic copy of all required records for three years from the date generated or date submitted, whichever is last. These records must be available at the construction site until construction is completed. The discharger shall furnish to the Local State Regional Water Quality Control Board (RWQCB), or US Environmental Protection Agency (EPA), within a reasonable time, any requested information to determine compliance with this General Permit. RWQCB's may require records to be retained for longer periods as they deem necessary. The project construction manager will maintain these records as required by the General Permit in the construction trailer.

During active construction, copies of the SWPPP, site inspections, corrective actions, photo documentation, annual reports, sampling data/results and any other storm water related documents will be maintained on-site in the construction trailer and or on-site electronic database. After construction is completed, all documents will be stored at the permit holder's offices until 3 years of the date the document(s) were generated/submitted.

1.4 Non-Compliance Reporting

Depending on the project Risk Level certain storm water quality requirements are outlined in the General Permit. In the event that a discharge occurs outside of these requirements where pollutants are discharged into storm water that may contribute to a violation of the permit the discharger is responsible to report the discharge(s). The General Permit identifies several areas of non-compliance reporting. It is the responsibility of the permittee to properly document reportable discharges or other violations of the General Permit. Exceedances and violations should be reported using the Water Board SMARTS system and Non-Compliance Reports will include the following:

- For all LUP Sites, Self-reporting of any other discharge violation(s) or to comply with RWQCB enforcement actions, including local Basin Plans; and

- Discharges which contain a hazardous substance in excess of reportable quantities established in 40 CFR §§ 117.3 and 302.4, unless a separate NPDES Permit has been issued to regulate those discharges.

- Discharge conditions per the project's site-specific Groundwater Dewatering Control and Disposal Plan (final approved plan was in progress at time of SWPPP creation).

1.5 Annual Reports

The General Permit requires that all permittees prepare, certify, and electronically submit an Annual Report no later than September 1 of each year. The annual report will be due by September 2017. The project LRP or Authorized Signatory will file the Annual Report through the State Water Board's SMARTS System. Reporting requirements are identified in Section XVI of the General Permit and include (but are not limited to) providing a summary of:

1. Summary of the construction activities during the year.
2. Sampling and analysis results including laboratory reports, analytical methods and reporting limits and chain of custody forms (Risk Levels 2 and 3);
3. Corrective actions and compliance activities, including those not implemented;
4. Violations of the General Permit;
5. Date, time, place, and name(s) of the inspector(s) for all sampling, inspections, and field measurement activities;
6. Visual observation and sample collection exception records; and
7. Training documentation of all personnel responsible for General Permit compliance activities.

1.6 Changes to Permit Coverage

The General Permit is not transferable, however when changes in construction occur the General Permit allows the discharger to change/alter the permit acreage in certain situations. Per Section II C of the General Permit, the permittee is allowed to reduce or increase the total acreage covered under the General Permit under the following:

1. When a portion of the project is complete and/or conditions for termination of coverage have been met;
2. When ownership of a portion of the project is sold to a different entity; or
3. When new acreage is added to the project.

In order to change the acreage covered, the permittee must electronically file modifications to PRDs that include the revision of the project NOI, site map, SWPPP as appropriate, and provide a certification that new landowners have been notified of applicable requirements to obtain permit coverage (including name, address, phone number, and e-mail address of new landowner) in accordance with requirements of the General Permit within 30 days of a reduction or increase in total disturbed area. All changes to the project PRDs will be submitted via SMARTS and noted in the SWPPP Amendment Log in **Appendix D**.

1.7 Notice of Termination

To terminate coverage under the General Permit, a Notice of Termination (NOT) must be submitted electronically via SMARTS. A "final site map" and photos are required to be submitted with the NOT. Filing a NOT certifies that all General Permit requirements have been met. The NOT is submitted when the construction project is complete and within 90 days of meeting all General Permit requirements for termination and final stabilization (Section II.D) including:

- The site will not pose any additional sediment discharge risk than it did prior to construction activity.
- All elements of the SWPPP have been completed.
- All construction related equipment, materials and any temporary BMPs no longer needed are removed from the site.
- The site is in compliance with all local stormwater management requirements.
- The LRP has submitted a NOT and has received approval for termination from the local RWQCB

The LUP discharger shall ensure that all disturbed areas of the construction site are stabilized prior to the termination of coverage under this General Permit. Final Stabilization for the

purposes of submitting an NOT is satisfied when all soil disturbed activities are completed and one of the following criteria is met.

- Disturbed areas that were vegetated prior to construction must be re-established to a uniform vegetative cover equivalent to 70% coverage of the preconstruction cover.
- Where no vegetation is present prior to construction, the site is returned to its original line and grade and/or compacted to achieve stabilization.
- Equivalent stabilization measures have been employed. These measures include, but are not limited to the use of such BMPs as blankets, reinforced channel liners, fiber matrices, geotextiles, hyrdoseeding, etc.

*The project LRP or Authorized Signatory will file an NOT through the State Water Board's SMARTS system.

SECTION 2.0 PROJECT INFORMATION

2.1 Project and Site Description

The **Transmission Mains for Monterey Peninsula Water Supply Project** (**TMMPWSP) - Transfer Pipeline** project part of the Monterey Peninsula Water Supply project that is owned by the California American Water Company. All construction activities for the Transfer Pipeline will be conducted by the general contractor Garney Construction and their subcontractors.

The **TMMPWSP - Transfer Pipeline** will consist of the installation of approximately 51,000 linear feet (LF) of 36" diameter transmission main pipe installation. The Transfer Pipeline will deliver product water from the Desalination Plant to the existing 30-inch shared pipeline and the aquifer storage and recovery (ASR) system. The Transfer Pipeline will begin at the proposed Desalination Plant and connect to the shared pipeline approximately 1,000 LF south of the intersection of General Jim Moore Blvd. and Coe Avenue in Seaside. There are four jack and bore locations along the alignment, as well as all associated appurtenances, flow meter vaults (3), an above grade pressure regulating station and numerous pressure reducing vaults.

The Transfer Pipeline alignment will be installed through several local communities, (City of Seaside and Marina; County of Monterey) and other government agencies. The pipeline will generally be located within existing roadways and rail rights-of-way. The project pipeline alignment/vicinity map is located in **Appendix B.**

The project will consist of following main components:

- Pot Holing for existing utilities throughout the pipeline alignment
- Construction of the Transmission Mains and appurtenances, including testing, disinfections, and startup
    - Four (4) jack and bore pipe installation areas
- Construction of flow meter vaults, above grade pressure regulation station and all pressure reducing values, including startup and testing of associated power and telemetry systems

- Handling, transport, disposal of surplus excavated materials during pipe and structure install
- Treatment and discharge of encountered groundwater and construction water
- Site backfill, finish grading, paving and restoration of all work areas.

The pipeline project's disturbed areas/rights-of-way, including the designated storage yard encompass approximately 49.59-acres. Disturbed areas were calculated using the following information:

Pipe Installation within streets: 13,000 LF x 20' ROW area = 260,000 sf = 5.97-acres

Pipe Installation outside of streets: 38,000 LF x 50' ROW area = 1,900,000 = 43.62-acres

Total Disturbed area = 49.59-acres

Site activities are scheduled to begin September 2019 with a temporary shutdown anticipated for January 2020 through February 2020. Restart of pipe installation will commence in March or April 2020 through project completion. The project site, including the recommended BMPs and general drainage areas are included in the Erosion and Sediment Control Map in **Appendix C**. The purpose of this Storm Water Pollution Prevention Plan (SWPPP) is to ensure the construction activities by Garney Construction comply with the Construction General Permit. Plan updates will be completed for recommencement of work prior to the recommencing of construction anticipated for March or April 2020.

2.1.1 Existing Site Features, Watercourses, Soil Conditions, and Groundwater

Existing Site Features:

The **TMMPWSP - Transfer Pipeline** activities will take place within public roads, shoulders and common areas in the Seaside and Marina. The Transfer Pipeline extends from General Jim Moore Boulevard, about 1,100 feet south of Coe Avenue. The alignment trends north along General Jim Moore Boulevard and then turns west onto Lightfighter Drive, gradually descends in elevation, crosses under State Route 1 a few hundred feet north of the State Route 1/ Lightfighter Drive overpass in a jack-and-bore crossing and turns north along the Transportation Agency for Monterey County (TAMC) right-of-way.

The alignment continues along the TAMC right-of-way through old dune deposits west of State Route 1 and the City of Marina and east of Beach Range Road. The alignment crosses under one set of tracks in a jack-and-bore crossing at about Station 188+00 and continues along the east side of the TAMC right-of-way. Near Station 280+00 the alignment passes under State Route 1 at the South Marina Overhead along the west shoulder of Del Monte Boulevard within the TAMC right-of-way, where the alignment enters into mixed business and residential areas of Marina. The alignment continues within the TAMC right-of-way between Del Monte Boulevard and crosses the tracks in a jack-and-bore crossing about Station 288+00 and then continues along the west side of the TAMC right-of-way. The alignment reaches a low point at about Elevation 15 feet near Station 325+00 north of Reservation Road and adjacent to a small lake at Locke-Paddon Park.

The ground surface elevation gradually climbs north of this point and the alignment leaves the developed area of Marina at about Station 380+00. At about Station 393+00, the pipeline crosses under the railroad track by jack-and-bore and continues along the east side of the TAMC right-of-way and west of Lapis Road through undeveloped older dune deposits. Approximately 2,300 feet south of the Salinas River the alignment turns east leaving the TAMC right-of-way, following a dirt road for about 4,800 feet into the Desalination Plant site and its termination point.

Watercourses:

All runoff generated by the project within or along the existing roads will flow to the existing curb/gutters with storm drain inlets and discharge to the local municipal storm drain system, (Cities of Marina and Seaside). Other pipeline sections will discharges to the existing drainage conveyances or open space areas. The project tis located within the Monterey Bay watershed and will discharge to the Monterey Bay/Pacific Ocean. The project is not located within an area that is a designated sensitive watershed per the SMARTs receiving water database.

Soil Conditions:

The following information was obtained from the Revised Preliminary Geotechnical Assessment

Report by AECOM October 28, 2017. In general, the pipeline will cross a wide range of geologic units, including:

- Fill and surficial soils;
- Quaternary-age alluvium, flood plain and basin deposits;
- Quaternary-age stabilized and older sand dune deposits;
- Quaternary-age marine terrace deposits;
- Tertiary-age Monterey Shale, and;
- Cretaceous-age basement granitic rocks.

Detailed subsurface soils conditions are outlined in geotechnical report.

Groundwater:

The project site is located within the Salinas Valley Groundwater Basin (Monterey County Water Resources Agency, 2013), which includes two sub-basins within the project area: the 180/400 foot aquifer located in the area north of Marina, and the Seaside sub-basin extending from Marina south to the Monterey Peninsula.

Shallow groundwater also may be encountered along the proposed Transfer pipeline in Marina between about Station 320+00 to 327+00, where the alignment will pass near the small lake in Locke-Paddon Park. The remaining sections of all the other pipelines are generally above the regional groundwater level. However, local perched groundwater may be present with the alluvium at drainage crossings, in poorly drained areas, and during the winter months during periods of prolonged rainfall.

2.2 Stormwater Run-On From Offsite Areas

Potential run-on to active pipeline installation areas exists due to the varying topography of the site. As construction progress and moves along the pipeline alignment, appropriate BMPs will be deployed around disturbed areas to divert any observed run-on away from the construction area. Detail information for the run-on BMPs that will be used to divert run-on are described **in Section 3.**

2.3 Construction Site Sediment and Receiving Water Risk Determination

Requirements for LUP type projects are outlined in Attachment A and A.1 of the General Permit. The **TMMPWSP - Transfer Pipeline** Construction Project has been determined to be LUP Type 1 project based per Attachment A.1 Flow Chart and pipeline segment risk determinations. See **Appendix A** for Risk Determination Documents. This SWPPP has been designed to comply with the guidelines of State Water Board Order No. 2009-0009-DWQ, Attachment A and A.1 for a LUP Type 1 project. The project activities will comply with the following effluent standards:

- Storm water discharges and authorized non-storm water discharges shall not contain a hazardous substance equal to in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4, unless a separate NPDES Permit has been issues to regulate those discharges.
- Dischargers shall minimize or prevent pollutants in storm water discharges and authorized non-storm water discharges through the use of controls, structures, and management practices that achieve BAT for toxic and non-conventionak pollutants and BCT for conventional pollutants.
- LUP Type 1 projects are NOT subject to Numeric Action Level (NAL) effluent standards for Turbidity and pH.
- Discharges must comply with the site specific Groundwater Dewatering Control and Disposal Plan.

The Project has been subdivided into four (4) segements based on anticpated schedules. All areas were determined at LUP Type 1 risk levels.* ***See Appendix A for segment risk determinations.*

2.4 Project Construction Activities

Pipeline construction occurs as a continuous operation along the alignment, with various activities taken place at one time. Pipes will be installed in prepared trenches, while simultaneously excavation activities ahead of the pipeline installation area will be active. In addition, completed areas will be backfilled per the project specifications and restored to pre-construction conditions within a feasible timeframe or temporary stabilization ed before predicted rain events. A **General Site Vicinity Map** of the project is shown in **Appendix B**. The

Erosion and Sediment Control Site Maps showing the pipeline alignment, storage areas, drainage conveyances or street inlets and a description of the recommended Best Management Practices (BMPs) for construction are included in **Appendix C**.

NOTE: Site maps for 2019 pipeline construction are included in this SWPPP. All site maps for pipeline construction scheduled for Marhc/April 2020 will be incorpated into this plan via a SWPPP Amendment a minimum of one month prior to the recommence of construction.

The construction activities will be located within the designated ROW areas within existing streets and other ROW areas per the approved plans. Construction activities will include, but are not limited to the following:

- Mobilization of construction materials and equipment
    - Pot Holing for existing utilities
    - Staging and storage yard set up
- Pipe Installation Activities
    - Saw cutting and existing paved area removal
    - Excavation and backfilling
    - Jack and Bore pipe installation
    - Soil export and import of approved fill material
    - Pipe installation and backfilling activities (main pipe, utility relocation, etc.)
    - Grinding and Paving activities
    - Dewatering of Groundwater and Discharing
    - Storage of materials and equipment
    - Vertical Construction of Engineered Structures
    - AC/PCC installation
- Site restoration and stabilization
    - Temporary Erosion/Sediment Control BMPs
    - Good Housekeeping Practices
    - Paving and grinding operations
- Punch List and Demobilization of equipment

2.5 Construction Schedule

The **TMMPWSP - Transfer Pipeline** Construction Project activities will be phased. Phase 1 construction activities are anticipated to commence in early September 2019 and continue through end of December 2019. The project is schedule then to be shut down for the months of January and February 2020 with recommencement of construction anticipated for March/April 2020 for the remaining of the pipeline work areas. The following summarizes the anticipated work schedule and general phases for the project.

- Phase 1 – Pot holing and pipeline installation for part of General Jim Moore Blvd and for Lightfighter Drive (plans sheets 3C01-3C03 & 3C12-3C16) – September 1, 2019 – December 31, 2019.
- Shut Down Phase – January 2020 – February 2020.
- Phase 2 – Pipeline Recommencement
    - Remainder of General Jim Moore Blvd – March 2020 – May 2020
    - Hwy 1 Bore and TAMC to Marina Drive – March 2020 – June 2020
    - Marina Drive to North Terminus – June 2020 – Jan 2021
- Punch List and Site Completion – November 2020 – Jan 2021

The detailed estimated construction schedule is located in **Appendix K**.

2.6 Potential Construction Site Pollutant Sources

Construction activities that have the potential to contribute sediment to storm water discharges include but are not limited to; clearing and grubbing operations, saw cutting activities, utility excavations operations, export/import operations, asphaltic and concrete paving, pipe installation (open cut or trenchless) and site stabilization/restoration. The following is a list of construction materials that will be used and will have the potential to contribute pollutants, other than sediment, to storm water runoff.

- Vehicle and Equipment Storage, Cleaning and Maintenance - vehicle and equipment

fluids, oil, grease, fuel, lubricants, paints, solvents, thinners, coatings, glues, and adhesives

- General litter handling and disposition
- Sanitary/septic wastewater and sewage handling and disposition
- Site preparation, clearing, and grubbing – Disturbed soil areas and vegetation
- Pipe cutting/replacement and installation of pipes and valves – metals and metal-plated products, cleaning solutions, and agents
- Pipe Testing and Flushing – pipeline water containing chlorine and chlorination byproducts, and residual dechlorination agents (sodium bisulfite, calcium bisulfite)
- Soil handling, storage and off-hauling/import
- Dewatering of Excavation Trenches and Groundwater – contain precipitation and groundwater removal from excavation and wet soil
- Excavation and backfilling for pipeline installation – soil and other materials from pipeline, and utility excavation
- Concrete mixing, pouring, curing, and finishing – concrete residue and debris associated with concrete pouring, curing, and finishing
- Grinding and replacement of paved roads – asphaltic emulsions associated with asphalt-paving or import of rock aggregate
- Landscaping and vegetation restoration – landscaping materials (topsoil, plant materials)

Locations of recommended and or installed Best Management Practices (BMPs) of this project are shown on the project Erosion and Sediment Control maps in **Appendix C**. A detailed list of construction materials and potential pollutant sources is located in **Appendix H**.

2.7 Potential Soil and/or Groundwater Contamination Locations

There was no data available in regard to potential soil or groundwater contamination. Per the project documents, groundwater is anticipated to be encountered and all discharge activities will be compliant with the site specific Groundwater Dewatering Control and Disposal Plan. In the event that Contaminated Soil is encountered during construction, the California American Water

Company designated contact will be contacted immediately and activities will be shut down until the materials are removed.

2.8 Identification of Non-Stormwater Discharges

Discharge of material other than storm water to the storm water collection system is prohibited. Per General Permit Order No. 2009-0009-DWQ certain non-storm water discharges are approved and/or authorized if they are related to construction activity and are necessary for the completion of a construction project.

Authorized non-storm water discharges are: dechlorinated potable water sources such as: fire hydrant flushing, irrigation of vegetative erosion control measures, pipe flushing and testing, water to control dust, dewatering, uncontaminated ground water from dewatering, and other discharges not subject to a separate general NPDES permit adopted by a Regional Water Board. The General Permit requires (Section XIV.A.2"SWPPP Requirements") that dischargers identify all non-stormwater discharges (where not otherwise required to be under a Regional Water Quality permit) and that discharges be eliminated, controlled, or treated.

The discharge of non-storm water is authorized under the following conditions:

1. The discharge does not cause or contribute to a violation of any water quality standard;
2. The discharge does not violate any other provision of the General Permit;
3. The discharge is not prohibited by the applicable Basin Plan;
4. The discharger has included and implemented specific BMPs required by this General Permit to prevent or reduce the contact of the nonstorm water discharge with construction materials or equipment.
5. The discharge does not contain toxic constituents in toxic amounts or (other) significant quantities of pollutants;
6. The discharge is monitored and meets the applicable NALs and NELs;

Anticipated Non Storm Water Discharges at the **TMMPWSP - Transfer Pipeline** Project are the following:

- Groundwater – See Groundwater Dewatering Control and Disposal Plan
- Pipe flushing and testing
- Water to control dust

Required sampling protocols are outlined in the ***Construction Site Monitoring* Program *(CSMP)*** in **Appendix F**. All sampling documents and reports for nonvisible pollutants will be incorporated in the project Annual Report to be submitted via SMARTS by September 1 of each year. Site Specific dewatering permits may be required for groundwater dewatering activities (discharge to sewer or storm conveyance based on baseline samples). All sampling data and reports will be submitted to the City, Sanitary Sewer District, and or Regional Board based on the approved discharge location, conditions, permit, etc.

SECTION 3.0 BEST MANAGEMENT PRACTICES

Best Management Practices (BMPs) are those practices, procedures and controls implemented onsite that best achieve the reduction of pollutants in the storm water and protection of water quality. Appropriate BMPs are good housekeeping practices, using Best Available Technology (BAT) practices to minimize the contact of storm water run-off with potential pollutants, and reduce or abate non-storm water discharges. Locations of the recommendated BMPs to minimize soil exposure and potential pollutant discharges are located on the project Site Map in **Appendix C.** CASQA BMP fact sheets are located in **Appendix M** for all of the selected BMPs in Section 3**.** BMPs are to be installed prior to the start of construction and will be maintained year-round.

3.1 Schedule for BMP Implementation

Implementation of appropriate erosion and sediment control BMPs in a timely manner is paramount to minimize potential discharges and for compliance with the General Permit. Prior to the commencement of construction appropriate perimeter control BMPs will be deployed at project limits, along drainage conveyances, any operational storm drain inlets, and at the storage yard. During all phases of construction, particularly important during the rainy season (October 1 through April 30th), the site construction manager will ensure that an *appropriate combination of erosion and sediment control measures* are deployed to minimize potential pollutant discharges.

Prior to the start of construction the following actions and BMPs will be deployed:

EC-1 Scheduling/Pre Construction Surveying:

Site activities are scheduled to begin in early September 2019 and continue through the end of the year. Construction activities will require a proactive approach to SWPPP implementation during pipeline installation. Weather forecasts will be monitored daily and pipe installation activities will be adjusted accordingly. All active areas will be assessed prior to rain and additional BMPs installed within active areas per the site plans. Perimeter controls will be established at all staging areas, stockpile areas and where deemed necessary by QSP.

EC-2 Preservation of Existing Vegetation/Site Features:

- After the pipeline alignment has been delineated and areas required to be cleared and grubbed are completed, the surrounding area vegetation or hard surfaces will be preserved in place until removal is necessary to complete construction.

Diversion of Run-on:

- Run-on from Streets: Garney Construction will deploy appropriate BMPs to divert run-on away from the active areas and into existing storm drain inlets.

    - Gravel Bag or Sandbag Check Dams – will be used within the existing street to temporarily divert run-on water to other nearby storm drain inlets.

    - Material Management – All dirt or material piles within the street section will be covered with secondary containment in place prior to and during rain.

3.2 Erosion and Sediment Control

3.2.1 Erosion Control (EC): Soil Stabilization

Erosion control, also referred to as soil stabilization, consists of source control measures that are designed to prevent soil particles from detaching and becoming transported in stormwater runoff. Erosion control BMPs protect the soil surface by covering and/or binding soil particles.

This construction project will implement the following practices to provide effective temporary and final erosion control during construction:

- Preserve existing vegetation where required and when feasible.
- The area of soil disturbing operations shall be controlled such that the Contractor is able to implement erosion control BMPs quickly and effectively.
- Stabilize non-active areas within 14 days of cessation of construction activities.
- Control erosion in concentrated flow paths by applying erosion control blankets, check dams, erosion control seeding or alternate methods.
- Prior to the completion of construction, apply permanent erosion control to

remaining disturbed soil areas.

Under the discretion of the site Qualified SWPPP Practitioner (QSP), the following temporary Erosion Control (EC) Practices will be or will be considered for implementation at the site during construction activities by Garney Construction.

EC-4 Hydroseed

Upon completion of work, a mixture of wood fiber, seed, fertilizer, and stabilizing emulsion will be applied with hydro-mulch equipment, to provide temporarily protection of exposed soil until seed can germinate. The approved hydroseed mix and application rate will be applied to the completed disturbed areas upon completion of work that is outside of existing pavement. Hydroseed application will need to be per local requirements based on soil conditions and vegetation cover that will establish efficiently.

EC-16 Non-Vegetative Stabilization

Non-Vegetative Stabilization practices will be used for temporary stabilization of the active/inactive pipe installation areas, as well as other disturbed areas within the project to minimize exposed soil areas to raindrop impacts and potential wind erosion. The CGP requires disturbed areas that will be inactive for greater than 14 days to be stabilized. Below outlines the BMPs that are incorporated into EC-16 Non-Vegetative Stabilization BMP and will be deployed to protect the soil surface, minimize erosion and potential sediment laden discharges.

EC-7 Geotextiles and Mats

Geotextile covers and mats will be used to cover exposed soil and other earthen material stockpiles to minimize exposure to rain based on the site conditions under the direction of the QSP or trained staff. Mattings of natural materials will be used to cover the exposed soil ad stockpile surfaces to reduce erosion from rainfall impact, hold soil in place, and absorb and hold moisture near the soil surface. Erosion Control Blankets will be used in areas where potential concentrated flows of run-on or runoff for soil stabilization per the manufacture's specifications for flow strength. In addition, erosion control blankets will be used to stabilize any disturbed slopes to minimize soil exposure and potential erosion during rain events.

- Plastic Liner or Tarps use will used to provide temporary cover for material and dirt stockpiles associated to pipeline installation to prevent exposure to rain. All Plastic Liners or Tarps must be anchored appropriately to minimize potential damaged by wind. CGP discourages the use of plastic of long-term applications.
- EC-7 will be installed at active areas on trench spoils prior to rain events to minimize soil exposure with secondary containment BMPs at the base of the spoils.

WE-1 Wind Erosion Control

Wind erosion control will consist of applying water and/or other dust palliatives as necessary to prevent or alleviate airborne emissions from exposed areas from the forces of wind. Dust control will be applied in accordance with CASQA standard practices, as well as the project's Site Management Plan for demolition and remediation activities. Active areas and other exposed dirt areas (stockpiles) will be watered appropriately to prevent dust emissions. Water will be applied by a means of pressure-type distributors (Water Trucks or pull behind trailers) or pipelines equipped with a spray system or hoses and nozzles that will ensure even distribution. Materials applied as temporary soil stabilizers and soil binders will also provide wind erosion control benefits and access to these stabilized areas will be minimized. Covering of small stockpiles or areas will be an alternative to applying water or other dust palliatives.

The following actions will be taken during pipeline construction activities:

- Limit on-site vehicle speed to approximately 15 miles per hour or less as needed to minimize visible dust generation on exposed soils;
- Apply water to the areas to be excavated and/or graded, and continue watering throughout the grading and/or excavation activities to minimize visible dust generation;
- Suspend excavation/grading activities when wind speeds during high wind conditions that result in visible dust emissions (deploy additional water trucks or application to prevent dust);
- Keep soil stockpiles adequately wetted or covered when not in use and at the end of each work day;
- Clean track-out on paved public roads a minimum of weekly, but as necessary to abate track out

*All stabilized disturbed areas will be assessed frequently to ensure that the installed BMPs are in good condition and have not been damaged. Corrective actions will be implemented to address any damaged BMPs, the exposed soil areas and construction materials as described in the Rain Event Action Plan (REAP) in *Section 4.3.*

The following Permanent Erosion Control Measures will be implemented on-site:

- All disturbed areas will be restored to the preconstruction or equivalent conditions (repaving, restoring open space to pre-construction conditions and hydroseeding, etc.)

3.2.2 Sediment Control (SC): Secondary Containment

Sediment Control measures are used for secondary containment to trap dislodged sediment particles due to erosion and/or from exposed soil areas. Sediment controls are intended to complement and enhance the selected erosion control measures and reduce sediment discharges from active construction areas. The project will incorporate sediment control measures required by regulatory agency permits, contract documents, and other measures selected by the QSD. Effective sediment perimeter controls will be established and maintained during all phases of construction. Installation specifications and maintenance requirements of the BMPs will be according to the measures outlined in the applicable CASQA Handbook BMP fact sheets contained in **Appendix M**.

Under the discretion of the site Qualified SWPPP Practitioner (QSP), the following temporary Sediment Control (SC) Practices will be implemented during pipeline installation activities.

SE-1 Silt Fence

Silt fencing or equivalent will be used to provide a temporary barrier of permeable fabric designed to intercept and slow the flow of sediment laden runoff. Silt fence will potentially along pipeline alignment areas with potential for off-site runoff and at staging areas to establish perimeter limits and secondary containment. Additional locations for silt fence will be field determined as deemed necessary by the QSP.

SE-4 Check Dams

Small barriers constructed of rock, gravel bags, sandbags, fiber rolls, or reusable products will be placed in gutters on paved roads, thereby reducing the velocity of flowing water, allowing

sediment to settle and reducing erosion or sediment laden run-off.

SE-5 Fiber Rolls

Straw, flax, or other similar materials bound into a tight tubular roll will be staked and trenched in behind the curb of active and inactive areas to intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide removal of sediment from the runoff. Fiber roll or equivalent sediment control rolls will be installed along pipeline alignment where necessary to provide secondary containment for active, inactive or completed pipe segments-based on need. Fiber rolls will be used to provide secondary containment for trench spoils prior to rain.

SE-10 Storm Drain Inlet Protection

Based on site activities and location through existing developed areas, SE-10 will be the main sediment control BMP deployed. This BMPs consist of a sediment filter or an impoundment around or upstream of a storm drain, drop inlet, or curb inlet. Storm drains inlet protection measures temporarily pond runoff before it enters the storm drain, allowing sediment to settle. *Storm drain inlet protection will be implemented and maintained at all nearby municipal storm drain inlets. Filter fabric and gravel bags will be installed at all operational inlets per the project specifications.*

TC-1 Tracking Controls

Stabilized Construction Entrance/Exit – Stabilized construction entrance/exist will be installed and maintained between areas paved to unpaved areas of ingress/egress along the pipeline alignment. Stabilization material is recommended to be the following for entrance/exits.

- *Stabilization material will consist of 3 to 6-inch diameter aggregate (soil cut down 6-12 inches and rock aggregate underlain with geo-textile fabric), or steel rumble plates and or equivalent BMPs to minimize track out onto paved roads.* It is recommended that the entrances are flared where it meets the existing road to provide an adequate turning radius (mainly used at Storage Yard).
- Street sweeping will be performed daily, prior to rain, and as necessary to address track out from construction activities.

Additional Erosion and Sediment Control BMPs will be implemented as needed at the project site depending on the status of construction and the forecasted weather to ensure compliance with the General Permit and local regulations.

3.3 Good Housekeeping - Non-Stormwater and Materials Management

As described in Section 2.6 of this SWPPP, non-stormwater discharges other than storm water are prohibited, with the exceptions described in Section 2.6 of this SWPPP. The General Permit (Section XIV. A.2) requires the SWPPP to identify non-stormwater BMPs that will effectively reduce pollutants associated with Material Storage, Material Use, Waste Management, and reduce/properly manage "non-stormwater" that is generated on-site. The following are the BMPs that will be used on-site that meet requirements for LUP Type 1 projects.

3.3.1 Non-Stormwater Management BMPs

NS-1 Water Conservation Practices

Water application rates will be monitored to prevent over watering and possible ponding of water. Irrigation lines will be tested to ensure effective watering and water times will be adjusted to ensure that the appropriate amount of water is being used and to prevent runoff and erosion formation.

NS-2 Dewatering Operations

Dewatering operations are practices that manage the discharge of contained runoff precipitation and non-storm water that must be removed from a work location so that construction work may be accomplished. Non-storm water includes, but is not limited to groundwater, waters used during construction activities for dust control and pipe flushing/testing (potable). Various methods are acceptable for containing the water and treatment before release. Dewatering activities are anticipated to occur at the site related to groundwater removal for construction to be completed. Garney Construction is in the process of finalizing the Groundwater Dewatering Control and Disposal Plan. All activities must be conducted in compliance with the approved plan.

NS-3 Paving, Saw Cutting and Grinding Operations

The Contractor will prevent or reduce the discharge of pollutants from paving operations, by using measures to prevent run-on and runoff pollution, properly disposing of wastes, and training employees and subcontractors.

When Paving, Saw Cutting and Grinding activities are to be conducted in the rainy season, activities will be completed when there is a window of clear weather with appropriate BMPs installed to minimize potential discharges.

- All nearby storm drain inlets will be temporarily blocked off or covered to prevent wash water from entering the storm drains (when rain is not in the forecast).

- Following the completion of all Grinding and Sawcutting operations, the streets will be swept, inlet covers removed and inlets inspected for the presence of any paving debris that needs to be removed.

- No paving, saw cutting or grinding waste water will be washed into nearby inlets or othere drainage conveyances. All wash water will be vaccummed and or recycled on vegetated land if feasible.

NS-6 Illicit Connection/Illegal Discharge Detection and Reporting

Garney Construction staff will implement the illegal connection/illegal discharge report BMP during all phases of construction if anytime an illicit connection or discharge is discovered or illegally dumped material is found on the construction site.

NS-8 Vehicle and Equipment Cleaning

Several types of construction vehicles will be on site during construction. All vehicles will be monitored and inspected frequently to prevent any fuel or oil leaks and to assess the overall condition of equipment. Vehicle and equipment cleaning will be avoided to the maximum extent feasible.

If onsite vehicle and equipment cleaning will only occur if unavoidable, these actions will be conducted in a temporary washing station within any of the project limits away for any storm darin inlets or other senstive areas. The washing station will be properly contained (e.g., dirt berms) to prevent any offsite runoff. Vehicles will be washed in such a manner as to prevent non-storm water discharges to surface waters.

NS-9/NS-10 Vehicle and Equipment Fueling and Maintenace

If fueling or maintenance is to be conducted on site, a dedicated fueling, maintenance and vehicle storage area will be protected with berms and/or dikes to prevent run-on, runoff, and to contain spills.

Main source of fueling will be mobile fuel trucks.

- The fuel trucks will be used for on site fueling and all trucks will use drip pans and or have spill cleanup materials available during mobile fueling. Drip pans or absorbent pads will be used for vehicle and equipment maintenance activities that involve grease, oil, solvents, or other vehicle fluids. A worker education program will include information on proper fueling procedures.

Vehicles and equipment will be inspected daily and before coming on site for signs of leaks and be on a regular maintenance schedule. Maintenance of construction equipment and machinery will occur offsite, unless unavoidable.

- If on-site maintenance is required at the project site, all activities will be conducted within the project's temporary storage-laydown yard. Equipment maintenance areas will be protected from storm water run-on and runoff and will be located at least 100 feet away from storm drain facilities and watercourses on level ground. Drip pans or absorbent pads will be used during vehicle and equipment maintenance work that involves fluids, unless the maintenance work is performed over an impermeable surface in a dedicated maintenance area. A worker education program will include information on proper vehicle and equipment maintenance procedures.

NS-12/NS13 Concrete Curing & Finishing

All concrete pouring and finishing activities will be monitored and excess material will be disposed of at designated locations. Perimeter control measures will be installed to allow concrete ample time to cure.

- Any residue from concrete finishing work shall be removed and swept from paved areas.
- Nearby storm drain inlets will be protected prior to the application of any concrete additives and excess cure water will be disposed of appropriately. All cure water will be directed away from storm drains and gutters to temporary collection areas for proper removal.
- Designated washout pits appropriately built and lined with be used on-site or all concrete trucks will self washout and remove waste water from the project site for proper disposal.
- No waste water will be washed onto the pervious or imperivous surfaces per the General Permit requirments.

3.3.2 Waste Management: Materials Storage and Materials Use

The following sources also may be present in varying quantities at the project during construction activities. Table 1 in **Appendix H** shows a list of potential pollutants. All materials will be stored within the construction area and/or designated storage areas. Typical control measures that will be implemented at the construction sites for controlling the potential sources of pollution are discussed below, as well as in the CASQA BMP Fact Sheets located in **Appendix M**.

Material Delivery, Storage and Use:

WM-1 Material Delivery and Storage

Material delivery and storage BMP will be implemented during all phases of construction to prevent and minimize the discharges of construction materials during delivery and storage. The general material storage and laydown areas are to be determined at time of SWPPP creation. Upon identification, the storage area will be protected with appropriate sediment control

BMPs at the limits and the storage area will be kept clean, well organized and equipped with cleanup supplies appropriate for the materials being stored. Fully enclosed metal bins will be used to store the majority of materials. Fuel, petroleum, waste oil drums and/or equivalents if present at the site, will be stored on secondary containment pallets with a capacity of 10 percent or greater than the amount of stored material.

WM-2 Material Use

When materials are used that could potentially be exposed to rain and discharge into existing drainage conveyances, proper procedures will be utilized to minimize or eliminate exposure of these materials. This applies to potential construction related pollutants, such as limes, acids, concrete products, fertilizers, pesticides, herbicides and other related hazardous chemicals.

WM-3 Stockpile Management

Stockpile Management will be implemented within the designated areas of the site, as well as within the active areas. All active and inactive stockpiles will be monitored and watered appropriately to prevent dust. In addition, plastic covers, tarps or other erosion control BMPs will be used to cover material and dirt stockpiles prior to rain events. It is recommended that soil stockpiles not exceed 500 cubic yards each, with a total volume of less than 2,000 cubic yards, and should not be greater than 10 feet in height.

WM-4 Spill Prevention and Control

Spill Prevention and Control shall be implemented to contain and clean-up spills and prevent material discharges to the storm drain system. All leaks or spills will be cleaned and disposed of immediately. Appropriate equipment and materials (Spill Kits) will be stored on-site in order to immediately address any spill or leak that may occur during construction. On-site personnel will be trained in spill prevention/clean up to implement appropriate correction actions when there is a spill or leak by the site QSP and or trained staff.

Spills and Leaks:

All leaks or spills will be cleaned and disposed of immediately. No leaks will be washed into the storm drain. Per the General Permit the following BMPs and actions will be taken if a spill or leak occurs on-site due to construction.

1. Appropriate equipment and materials will be stored on-site in order to immediately address any spill or leak that may occur during construction.

2. On-site personnel will be trained in spill prevention/clean up and will be assigned to implement appropriate correction actions when there is a spill or leak.

    a. Garney Construction will implement their Emergency Response Plan and Notify the California American Water Company in the event that a spill has occurred.

Minor Spills: Minor spills consist of quantities of oil, gasoline, paint, or other materials that are small enough to be controlled by a first responder upon discovery of the spill without a discharge into a storm drain inlet or other conveyance. Clean up a minor spill using the following procedures:

1. Contain the spread of the spill
2. Recover the spilled material using absorption
3. Clean the contaminated area
4. Dispose of the contaminated material and absorbents promptly and properly based on the spilled material and local provisions for disposal

Semi-Significant Spills: Semi-significant spills consist of spills that can be controlled by a first responder with help from other personnel without a discharge into a storm drain inlet or other conveyance. Clean up a semi-significant spill immediately using the following procedures:

1. Contain the spread of the spill.
2. On paved or impervious surfaces, encircle and recover the spilled material with absorbent materials. Do not allow the spill to spread widely.
3. If the spill occurs on soil, contain the spill by constructing an earthen dike and dig up the contaminated soil for disposal.

4. If the spill occurs during precipitation, cover the spill with 1 0-mil plastic sheeting or other material to prevent contamination of runoff.
    a. If the spill or leak has come into contact with rain and observed discharges enter a storm drain or other conveyance the runoff must be sampled. Two (2) separate samples must be collected for analysis.
    b. Refer to the Construction Site Monitoring Program (Appendix F of SWPPP) for sampling procedures.
5. Dispose of the contaminated material and absorbents promptly and properly based on the spilled material and local provisions for disposal.

Significant or Hazardous Spills: Significant or hazardous spills consist of spills that cannot be controlled by job site personnel. Immediately notify qualified personnel of a significant or hazardous spill. Take the following steps:

1. Do not attempt to clean up the spill until qualified personnel have arrived
2. Notify local emergency response teams by dialing 911 and county officials by using the emergency phone numbers retained at the job site
3. The Governor's Office of Emergency Services Warning Center will be notified at **(800) 852-7550**
    a. Notify the National Response Center at **(800) 424-8802** regarding spills of Federal reportable quantities under 40 CFR 110, 119, and 302
4. Notify other agencies as appropriate, including:
    a. City of Monterey Public Works at **(831) 646-3920**
    b. City of Seaside at **(503) 738-5112**
    c. City of Marina at **(831) 884-1212**
    d. Central Coast Regional Water Quality Control Board (Region 3) San Luis Obispo office at **(805) 549-3147**

Significant or Hazardous Spill Notification will be first made by telephone and followed with a written report within seven working days or sooner.

- A spill cleanup contractor will be contacted immediately to address the spill.

- The Emergency telephone number of the project manager will be posted at the construction office for notification in case of a spill.

***No Toxic Materials spills are anticipated to be encountered during construction, however if Toxic Materials are encountered during construction the City and County will be contacted immediately and activities will be shut down until the materials are removed.**

WM-5 Solid Waste Management

Solid Waste Management shall be implemented to minimize storm water contact with waste materials and prevent waste discharges. Where feasible, solid wastes will be loaded directly onto trucks for offsite disposal, however when onsite storage is necessary, solid wastes shall be stored in watertight dumpsters. Solid waste, including rubble stockpiles, will be covered appropriately until material is removed and disposed offsite.

WM-6 & 7 Hazardous Waste and Contaminated Soil Management

None are anticipated at the project site. In the event that Hazardous Waste or Contaminated Soil is encountered that is not outlined in the existing project documents, Garney Construction will ensure appropriate actions are taken to ensure that proper disposal actions are taken. Appropriate temporary controls will be deployed to contain material within the work area and prevent off-site discharges until disposal.

WM-9 Sanitary-Septic Waste Management

Portable toilets will be located and maintained designated locations within the main storage yard and within active areas away from equipment. The portable toilets will be stored on level surfaces and away from drainage ditches. Secondary containment will be provided beneath all portable toilets. All portable toilets will be inspected frequently for leaks and spills. Weekly maintenance will be provided by an approved subcontractor and all wastes will be disposed offsite.

WM-10 Liquid Waste Management

Liquid wastes generated as part of an operational procedure will be contained on-site and not allowed to flow into drainage channels, or other surface waters prior to treatment. Liquid

wastes will be contained in a controlled area such as a holding pit or portable tank. All containment devices will be structurally sound, leak free and inspected frequently. Containment devices will be of sufficient quantity or volume to completely contain the liquid wastes generated.

3.4 Post-Construction Stormwater Management Measures

Per the General Permit Order No. 2009-0009-DWQ, all dischargers shall comply with the runoff reduction requirements unless they are located within city or county jurisdiction subject to post construction standards of an active Phase I or II municipal separate storm sewer system (MS4) permit (Cities) that has an approved Storm Water Management Plan (SWMP). The **TMMPWSP - Transfer Pipeline** is an LUP Type 1 site and all disturbed areas will be returned to the preconstruction or equivalent conditions upon completion of pipeline activities.

SECTION 4 BMP INSPECTION, MAINTENANCE AND RAIN EVENT ACTION PLAN

4.1 BMP Inspection and Maintenance

To maintain compliance with the General Permit, BMP Inspection and Maintenance (I & M) program has been established for the construction site. To ensure compliance, a designated ***Qualified SWPPP Practitioner (QSP)*** has been assigned to the project to oversee the installation of BMPs, maintenance of BMPs and to train site personnel to conduct the routine inspections and maintenance. The QSP listed below will train the site construction managers that will be in charge of routine inspections of the active/inactive disturbed construction areas, areas used for storage of hazardous or non-hazardous material, structural control BMPs, and points of vehicular ingress and egress.

Qualified SWPPP Practitioner (QSP):

Name: Sean Kazemi

Company: Kaz & Associates, LLC

Certification: QSD/P No. 01036

Phone: 707-816-2748

A copy of the QSP Certifications are located with all PRDs in **Appendix A.** The QSP will monitor and inspect the project's construction activities and the installation of appropriate BMPs. In addition, the QSP will train the following Garney Construction staff to conduct the routine site inspections and maintenance requirements.

Garney Construction Staff to be trained by QSP:

Name: Brian Thompson Title: Superintendent

4.2 Inspection Frequencies and Documentation

The **TMMPWSP - Transfer Pipeline** has LUP Type 1. The dischargers will ensure that all inspection, maintenance, repair and sampling activities at the project will be performed or supervised by a Qualified SWPPP Practitioner (QSP) representing the discharger. The QSP may

delegate any or all of these activities to an employee trained to do the task(s) appropriately, but shall ensure adequate deployment.

The following information outlines the minimum Inspection frequencies for LUP Type 1 segments of the project alignment:

- LUP Type 1 dischargers will ensure that all inspections are conducted by trained personnel.

- All visual inspections will be conducted daily during working hours and in conjunction with other daily activities in areas where active construction is occurring. The daily visual inspections will verify that appropriate BMPs for storm water and non-stormwater are being implemented and in place in areas where active construction is occurring, including staging areas.

- LUP Type 1 dischargers will ensure that photographs of the site taken before, during, and after storm events are taken during inspections, and submitted through the State Water Board's SMARTS website once every three rain events. All photos taken during inspections by California American Water Company representative will be submitted to SMARTS database.

- Inspections may be discontinued in non-active construction areas where soil-disturbing activities are completed and final soil stabilization is achieved.

- Inspection programs are required for LUP Type 1 project where temporary and permanent stabilization BMPs are installed and are to be monitored after active construction is completed until minimum vegetation coverage is established in accordance with Section C.1 of Attachment A of Order No. 2009-0009-DWQ.

- Non-stormwater and Non-Visible Pollutant discharge monitoring are addressed in the site specific Construction Site Monitoring Program (CSMP) in **Appendix F.**

The General Permit requires dischargers to begin implementing corrective actions within 72 hours for deficiencies identified during inspections. As indicated in this SWPPP, all

amendments shall be prepared by the QSD if warranted by the problem encountered and corrective action required. All corrective measures will be implemented during day light hours and safe working conditions.

For each conducted inspection, dischargers shall complete a written or electronic inspection form using the form located in **Appendix G** or another equivalent inspection form. The inspection document will include the following information.

1. Inspection date and date the inspection report was written.
2. Weather information, including presence or absence of precipitation, estimate of beginning of qualifying storm event, duration of event, time elapsed since last storm, and approximate amount of rainfall in inches.
3. Site information, including stage of construction, activities completed, and approximate area of the site exposed. A description of any BMPs evaluated and any deficiencies noted.
4. If the construction site is safely accessible during inclement weather, list the observations of all BMPs: erosion controls, sediment controls, chemical and waste controls, and non-storm water controls. Otherwise, list the results of visual inspections at all relevant outfalls, discharge points, downstream locations and any projected maintenance activities.
5. Report the presence of noticeable odors or of any visible sheen on the surface of any discharges.
6. Any corrective actions required, including any necessary changes to the SWPPP and the associated implementation dates.
7. Photographs taken during the inspection, if any.
8. Inspector's name, title, and signature.

All inspections will be stored in the construction trailer. These inspections will either be placed in the SWPPP binder or another binder labeled for SWPPP site inspections or inspections will be saved in an electronic folder within the on-site computer. Electronic copies of completed inspections by contracted third party inspectors (QSP) will also be saved in an appropriate data file of the on-site computer and or be printed and placed with all other inspections.

4.3 Rain Event Action Plans (REAP)

Per the CGP, a REAP is not required for LUP Type 1 projects. REAPs are designed to ensure site compliance by the implementation or maintenance of the appropriate BMPs prior to anticipated rain events that are 50% or greater per the National Oceanic and Atmospheric Administration (NOAA) weather service (www.noaa.gov/). All weekly weather reports will be from the NOAA weather service listed above. In general, a simple REAP includes the following activities that will be conducted prior to each rain event regardless of the site Risk Classification.

Simple Rain Event Action Plan (REAP) for the site:

At a minimum, 48 hours before a predicted storm event, defined as a forecasted 50% chance of rain by the NOAA, the REAP for the project will be implemented to assure the site is effectively protected from potential pollutants that may discharge into the storm drains.

The Plan consists of two key elements: ***Inspection and Maintenance***

Inspection: During the rainy season, appointed personnel will inspect the project site 24 to 48 hours before a predicted storm event. The inspector will use the form located in **Appendix G** or an equivalent inspection form.

Maintenance: Any necessary maintenance and repairs of existing erosion control, sediment control, and pollutant abatement measures discovered during the inspection will be carried out during day light and safe working conditions.

The following actions will be taken:

- Installed erosion and sediment control BMPs will be assessed and damaged measures replaced.
- All sensitive area BMPs will be assessed to ensure effectiveness and BMP measures replaced as needed.
- Exposed soil areas on active and inactive areas will have appropriate sediment control measures installed and exposed areas covered to the extent feasible with temporary measures to prevent exposure to rain.

- Material and dirt stockpiles will be covered with plastic liner, tarps and/or stored under cover in designated locations.
- Paved areas will be swept to abate any track out of dirt and minimize sediment laden runoff.
- Any debris or dirt will be removed from storm drain inlets BMPs and damaged BMPs replaced.
- All waste water washout pits will be emptied and/or covered to prevent exposure and potential discharge.
- All storage areas will be assessed to ensure that there are no spills, leaks and that all materials that could potentially contaminate runoff are stored appropriately and securely to prevent exposure.
- Additional BMPs will be deployed and implemented as needed.
- All inspections and repairs will be performed during daylight hours, each 24-hour period, assuming it is safe to do so.
- All subcontractors working on-site will be notified of the potential rain event and directed to address the active areas appropriately to minimize potential pollutant discharges.
- Report to Water Board and the local authorities' in the event of any significant BMP failures or discharges, followed by corrective report within 14 calendar days.

*For more detail regarding construction site monitoring and sampling protocols, refer to the site specific ***Construction Site Monitoring Program (CSMP)*** located in ***Appendix F.***

SECTION 5.0 CONSTRUCTION SITE TRAINING

Per the General Permit (Section VII) all elements of the SWPPP will be developed by the Qualified SWPPP Developer (QSD) and will be implemented by a Qualified SWPPP Practitioner (QSP). The QSP may delegate tasks to trained employees provided adequate supervision and oversight is provided.

The QSP will train site personnel pertaining to individual roles and responsibilities on the project. The appropriate personnel will receive training on SWPPP implementation, BMP inspection and maintenance, and record keeping. A record of all training activities (formal and informal) will be retained in the SWPPP in **Appendix I**. This training record will also be submitted as part of the site Annual Report. Certification of the QSD and QSP will also be located with the PRDs in **Appendix A**.

SECTION 6 RESPONSIBLE PARTIES AND OPERATORS

6.1 Responsible Parties

The General Permit requires (Section VII.B.4) that the name of any "Approved Signatory" be listed in the SWPPP, and a copy of the written agreement or other mechanism that provides this authority from the Legally Responsible Person (LRP) be provided in the SWPPP. The following personnel will responsible for SWPPP activities for the construction project by the LRP.

California American Water Company:

Name:	Tim O'Halloran	Title:	Engineering Manager – LRP/AS
Contact:	(831) 646-3291	Email:	Tim.Ohalloran@amwater.com

Garney Construction Site Contacts:

Name:	Sean Summers	Title:	Project Manager
Contact:	(415) 350-3219	Email:	ssummers@garney.com
Name:	Brian Thompson	Title:	Superintendent
Contact:	(209) 665-9922	Email:	bthompson@garney.com
Name:	Nick Hansen	Title:	Project Engineer
Contact:	(214) 535-1486	Email:	nhansen@garney.com

Kaz & Associates Environmental Services Site Contacts:

Name:	Sean Kazemi	Title:	Principal – QSD/P
Contact:	(707) 816-2748	Email:	s.kazemi@kazandassoc.com
Name:	Erica Colunga	Title:	Environmental Specialist – QSD/P
Contact:	(408) 832-2534	Email:	e.colunga@kazandassoc.com

*LRP Certification Statement and QSD/P certification documents are located in **Appendix A.**

6.2 Contractor List

The General Permit requires (Section VII.B.5) that the SWPPP include a list of names of all contractors, subcontractors, and individuals who will be directed by the QSP. The Contractor List is located in **Appendix J.**

The list is required to include telephone numbers and work addresses and the specific areas of responsibility of each subcontractor and emergency contact numbers.

SECTION 7 REFERENCES

The following documents are made a part of this SWPPP by reference:

- State Water Resources Control Board (SWRCB) Order No. 2009-0009-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002, Waste Discharge Requirements (WDRs) for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance.

- California Stormwater Quality Association, Stormwater Best Management Practice Handbook Portal: Construction

- Caltrans Storm Water Quality Handbooks

- California Regional Water Quality Control Board, San Francisco Region, Erosion and Sediment Control Field Manual

- Revised Preliminary Geotechnical Assessment Report Transmission Mains Monterey Peninsula Water Supply Project, AECOM, October 28, 2017

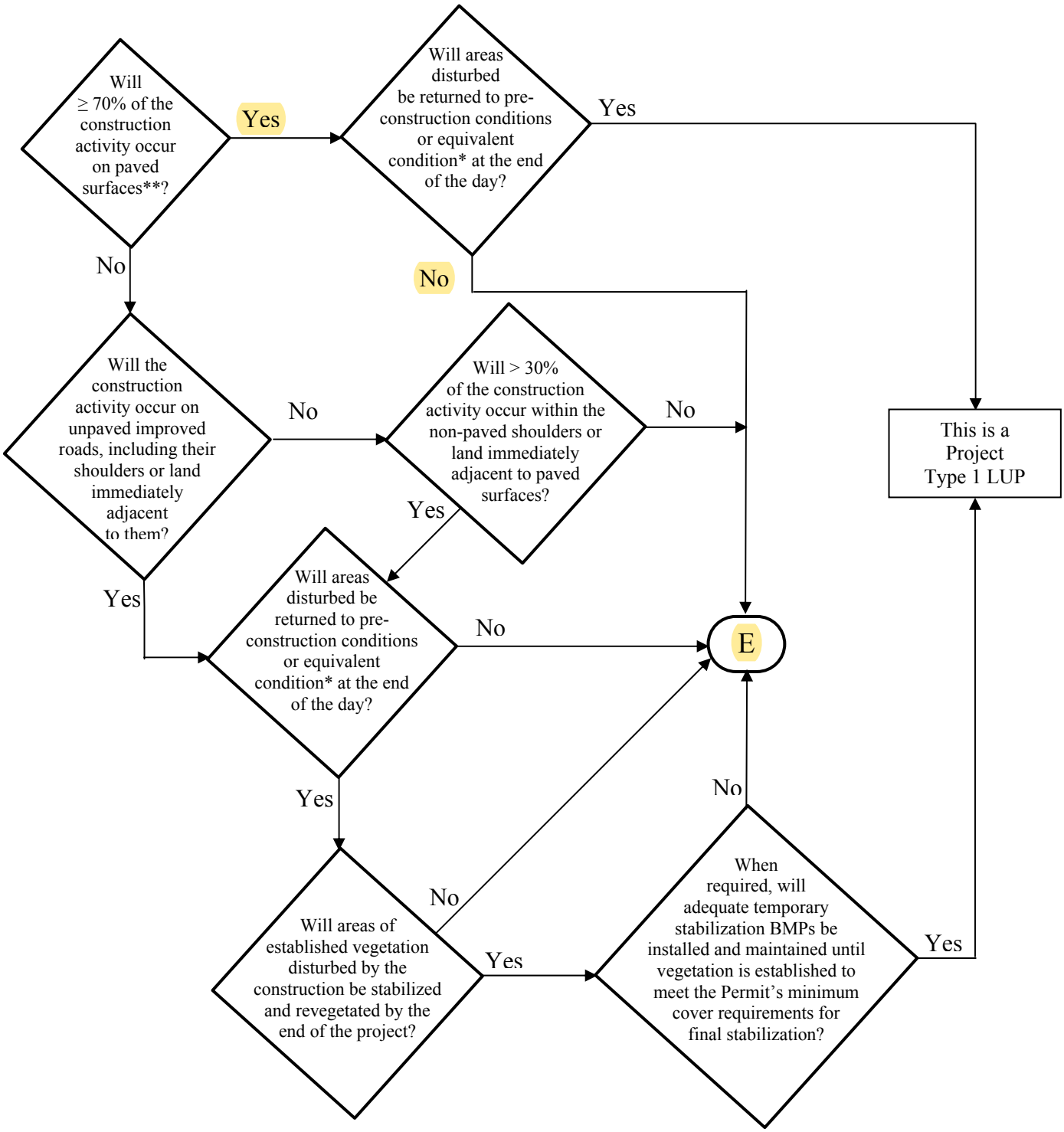
SECTION 8: LIST OF APPENDICES

APPENDIX A	PERMIT REGISTRATION DOCUMENTS (PRDs) - NOI, RECEIPT LETTER, QSD /QSP CERTIFICATIONS, RISK DETERMINATION
APPENDIX B	SITE VICINITY MAP
APPENDIX C	EROSION AND SEDIMENT CONTROL SITE MAPS
APPENDIX D	SWPPP AMENDMENT LOG
APPENDIX E	ATTACHMENT A OF GENERAL PERMIT ORDER NO. 2009-0009-DWQ
APPENDIX F	CONSTRUCTION SITE MONITORING PROGRAM (CSMP)
APPENDIX G	STORM WATER INSPECTION REPORT FORM
APPENDIX H	POTENTIAL POLLUTANT SOURCE LIST
APPENDIX I	TRAINING CERTIFICATION DOCUMENTATION
APPENDIX J	LIST OF SUB-CONTRACTORS
APPENDIX K	CONSTRUCTION SCHEDULE
APPENDIX L	INTENTIONALLY LEFT BLANK
APPENDIX M	CASQA BMP HANDBOOK FACT SHEETS
APPENDIX N	ANNUAL REPORT DOCUMENTS
APPENDIX O	COMPLETED SWPPP AMENDMENTS

APPENDIX A **PERMIT REGISTRATION DOCUMENTS (PRDs)**

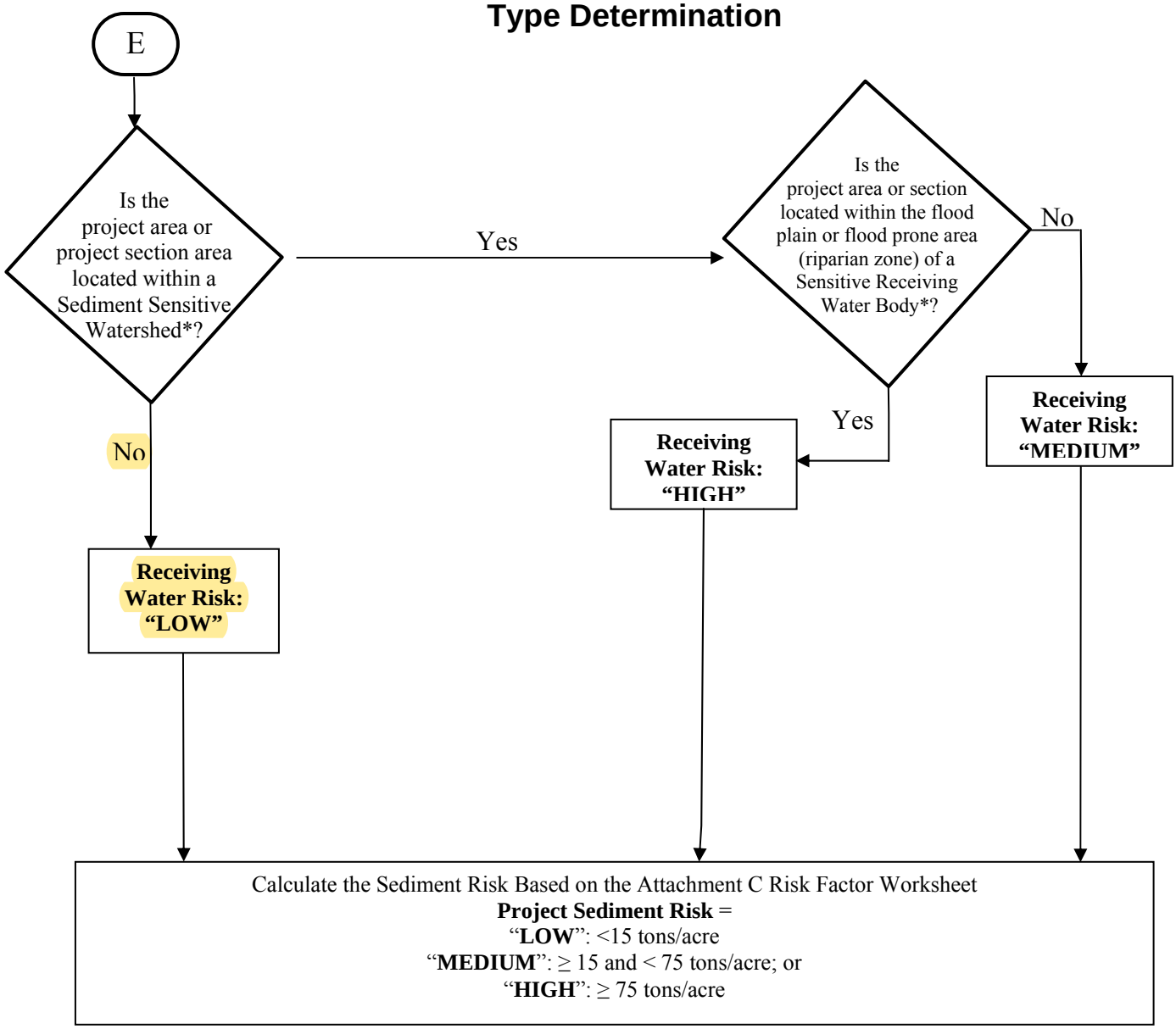
NOI, RECEIPT LETTER, QSD /QSP CERTIFICATIONS

ATTACHMENT A.1
LUP Project Area or Project Section Area Type Determination



*See Definition of Terms
** Or: "Will < 30% of the soil disturbance occur on unpaved surfaces?

ATTACHMENT A.1
LUP Project Area or Project Section Area Type Determination



* See Definition of Terms

PROJECT SEDIMENT RISK

RECEIVING WATER RISK	LOW	MEDIUM	HIGH
LOW	Type 1	Type 1	Type 2
MEDIUM	Type 1	Type 2	Type 3
HIGH	Type 2	Type 3	Type 3

Risk Determination Document

Transmission Mains Monterey Peninsula Water Supply Project (TMMPWSP)

Transfer Pipeline

Cities of Seaside and Marina

Monterey County, CA

General Jim Moore Blvd and Lightfighter Drive Pipeline Segment

Sediment Risk Determination:

RUSLE: A = R x K x LS x C (1) x P (1)

R Factor per EPA Erosivity Waiver = **17.54**

Google Earth SMARTs Populated K Factor = **0.10**

Google Earth SMARTs Populated LS Factor = **1.74**

A = **17.54** (R Factor) x **0.10** (K Factor) x **1.74** (LS Factor) = **3.05 tons/acre/year**

Project's Sediment Risk = **Low**

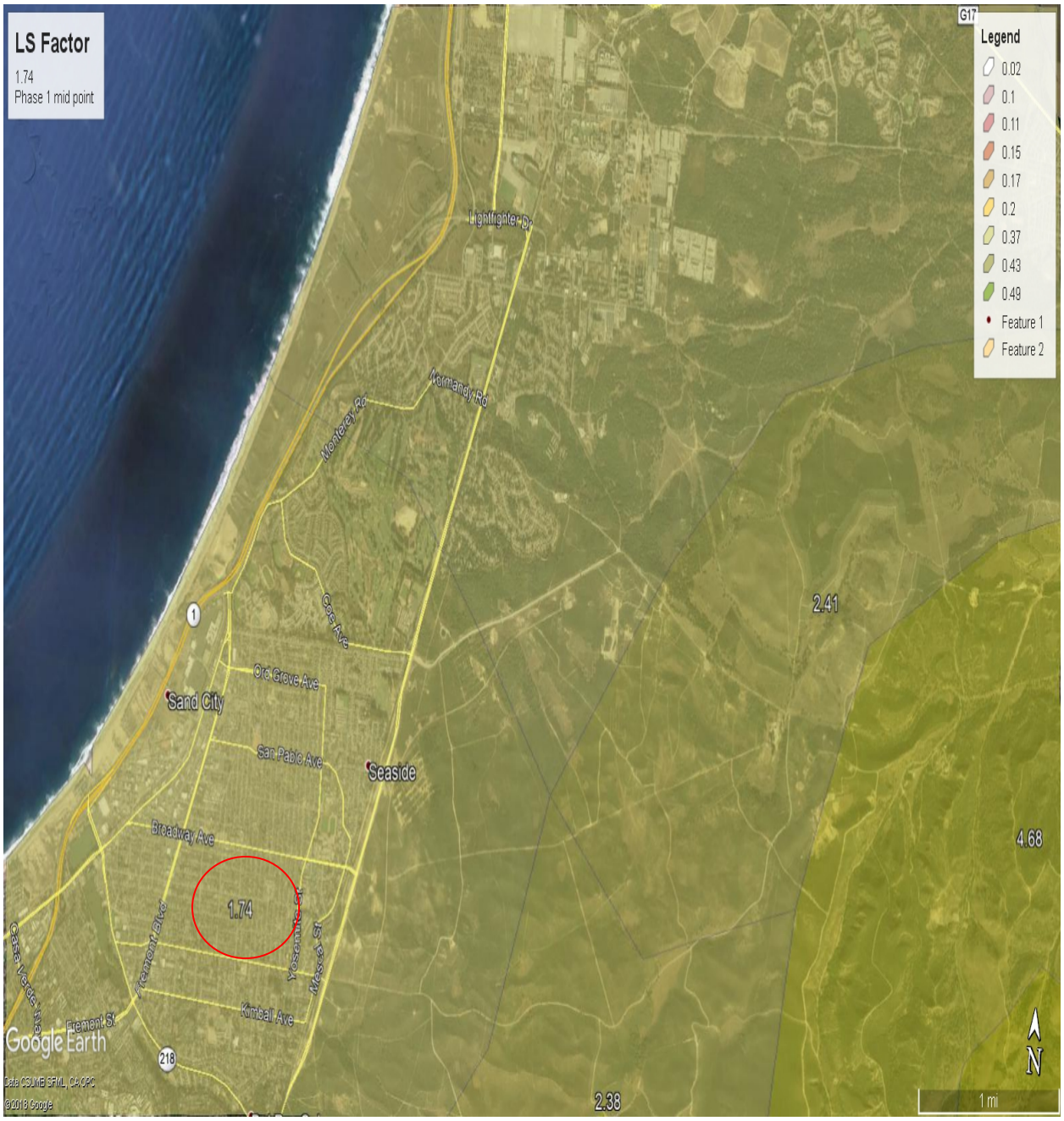
Receiving Water Risk per SMARTS and Flow Chart: **Low**

Combined Risk Level

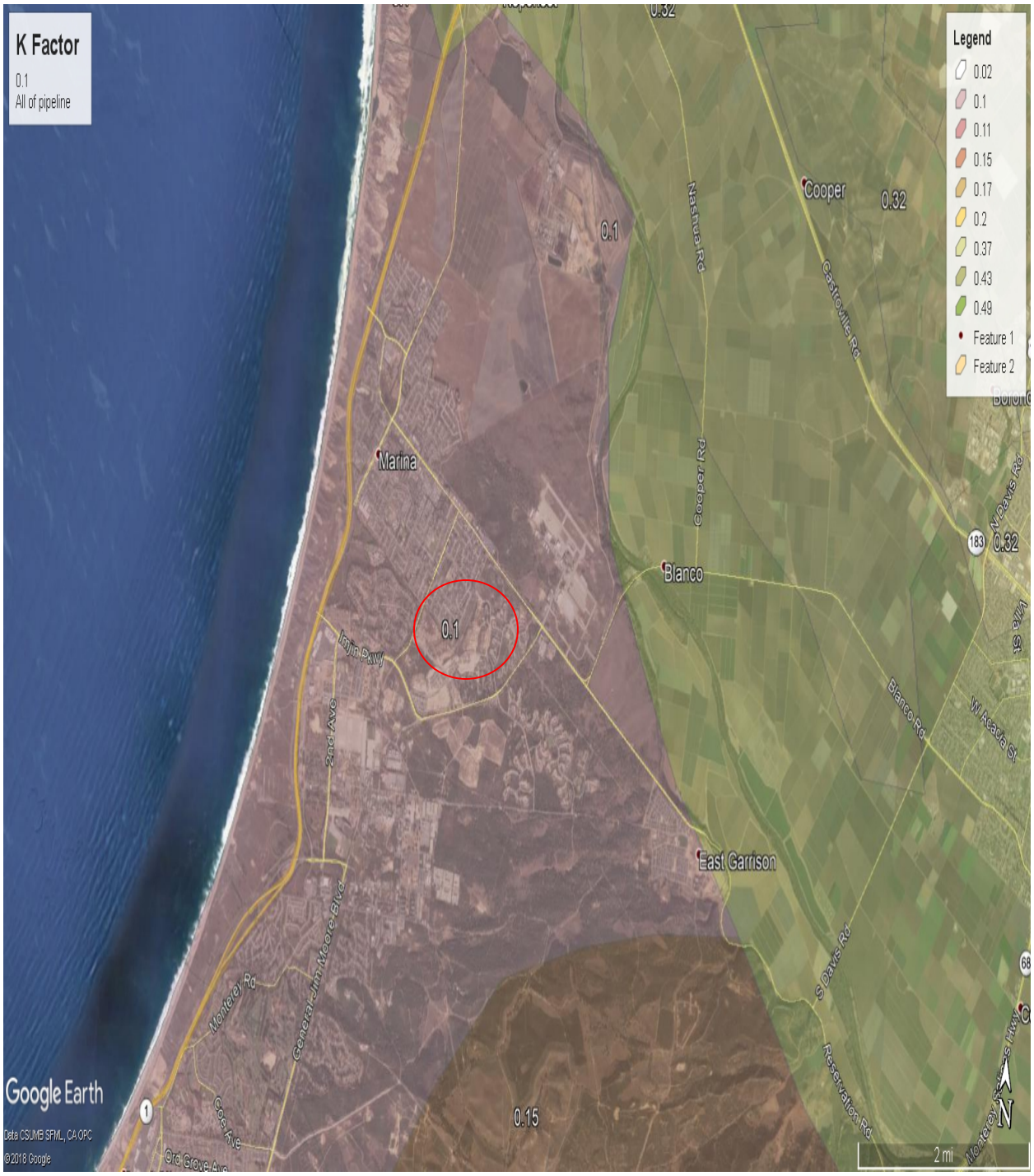
		Project Sediment Risk		
		LOW	**MEDIUM**	**HIGH**
Receiving Water Risk	**LOW**	**Type 1**	Type 1	Type 2
	MEDIUM	Type 1	Type 2	Type 3
	HIGH	Type 2	Type 3	Type 3

Project Segment has been determined to be an LUP Type 1 Site.

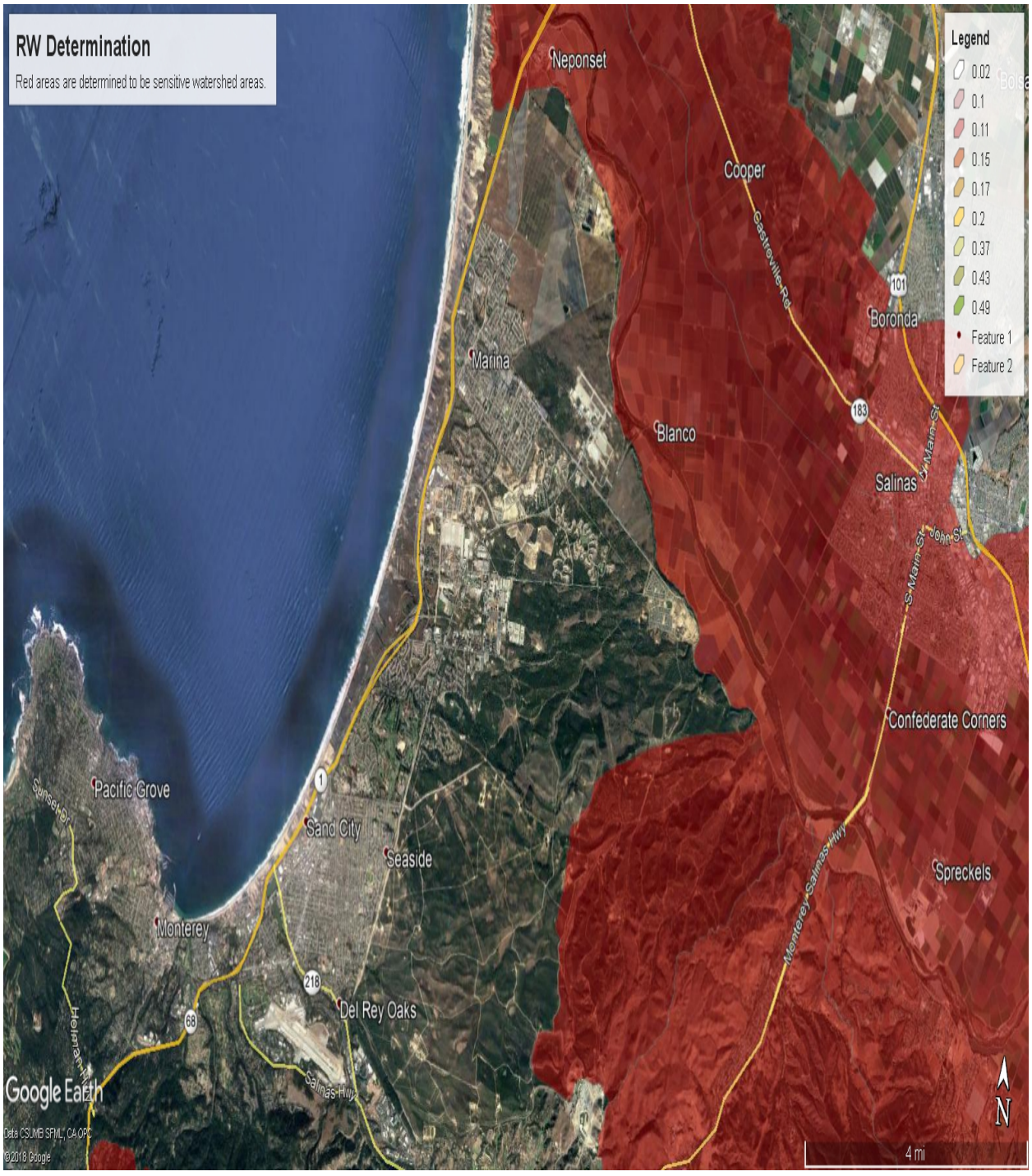
LS Factor per Google Earth for Approximate Pipeline Segment Mid-Point Location



K Factor per Google Earth for Approximate Pipeline Segment Mid-Point Location



Receiving Water per Google Earth for Approximate Pipeline Segment Mid-Point Location



Facility Information

Start Date: 09/01/2019	**Latitude:** 36.6372
End Date: 12/31/2019	**Longitude:** -121.8099

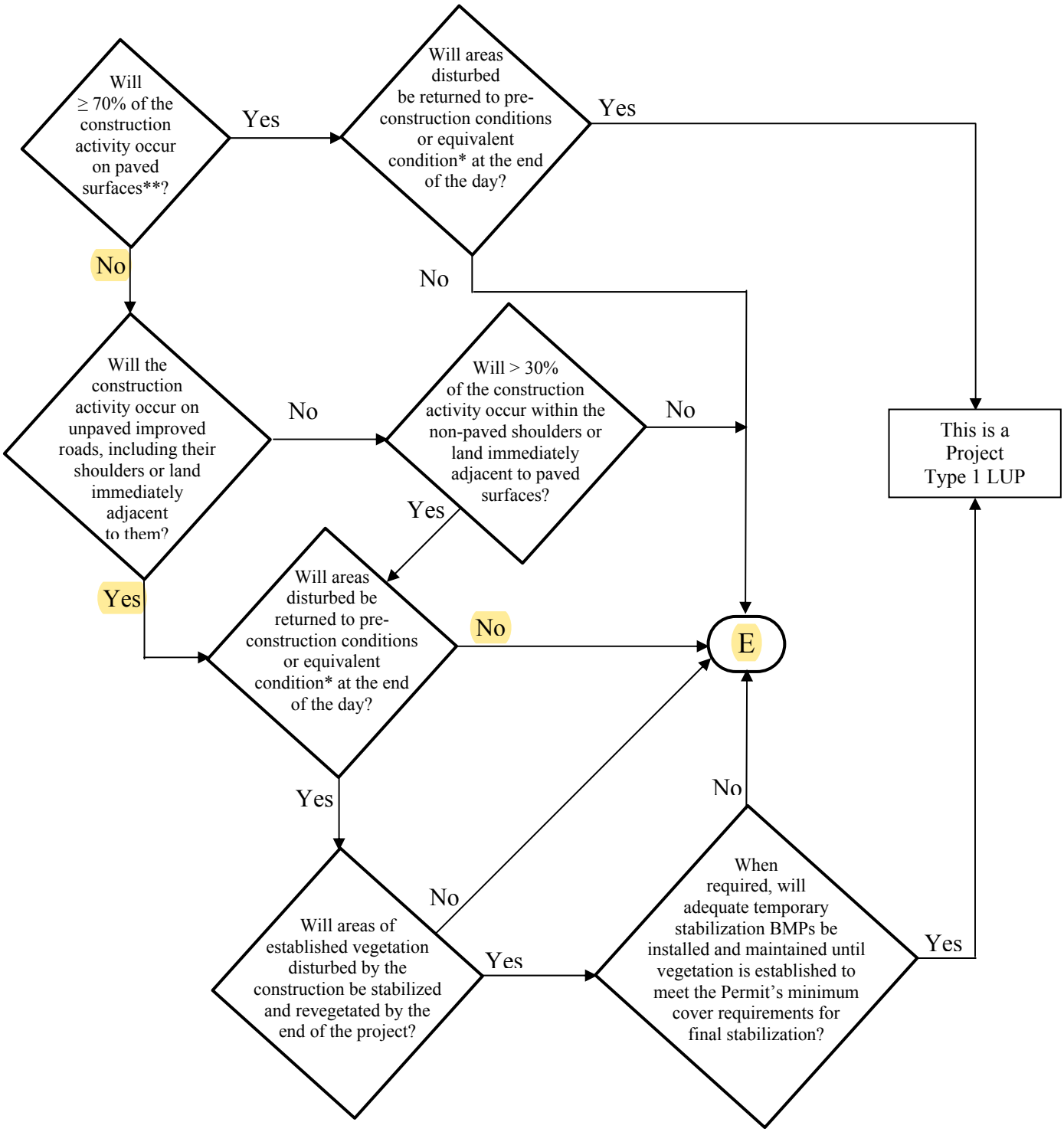
Calculation Results

Rainfall erosivity factor (R Factor) = **17.54**

A rainfall erosivity factor of 5.0 or greater has been calculated for your site's period of construction.

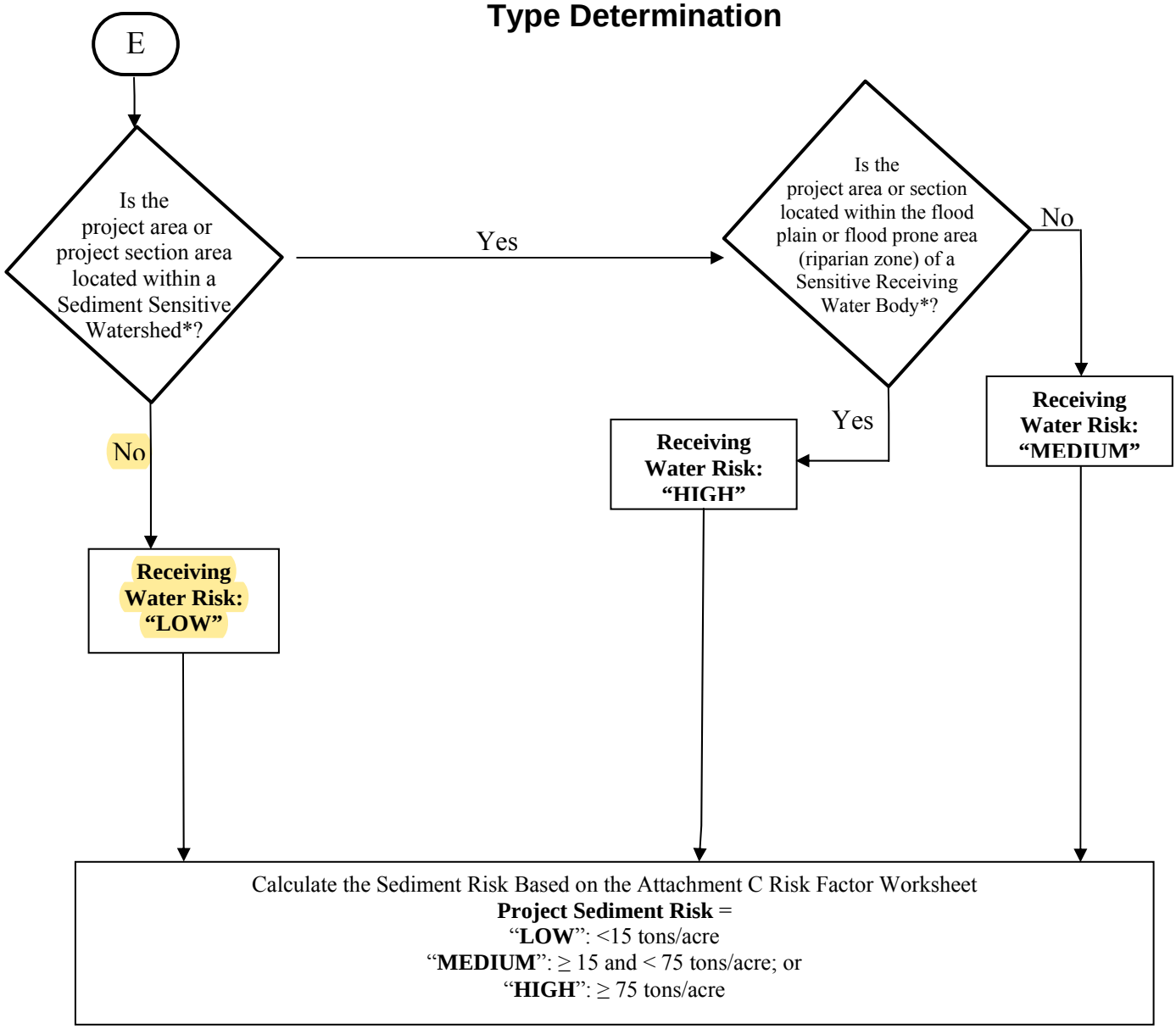
You do NOT qualify for a waiver from NPDES permitting requirements and must seek Construction General Permit (CGP) coverage. If you are located in an area where EPA is the permitting authority, you must submit a Notice of Intent (NOI) through the NPDES eReporting Tool (NeT).Otherwise, you must seek coverage under your state's CGP.

ATTACHMENT A.1
LUP Project Area or Project Section Area Type Determination



*See Definition of Terms
** Or: "Will < 30% of the soil disturbance occur on unpaved surfaces?

ATTACHMENT A.1
LUP Project Area or Project Section Area Type Determination



* See Definition of Terms

PROJECT SEDIMENT RISK

RECEIVING WATER RISK	LOW	MEDIUM	HIGH
LOW	Type 1	Type 1	Type 2
MEDIUM	Type 1	Type 2	Type 3
HIGH	Type 2	Type 3	Type 3

Risk Determination Document

Transmission Mains Monterey Peninsula Water Supply Project (TMMPWSP)

Transfer Pipeline

Cities of Seaside and Marina

Monterey County, CA

General Jim Moore Blvd Recommencement Pipeline Segment

Sediment Risk Determination:

RUSLE: A = R x K x LS x C (1) x P (1)

R Factor per EPA Erosivity Waiver = **8.85**

Google Earth SMARTs Populated K Factor = **0.10**

Google Earth SMARTs Populated LS Factor = **1.41**

A = **8.85** (R Factor) x **0.10** (K Factor) x **1.41** (LS Factor) = **1.25 tons/acre/year**

Project's Sediment Risk = **Low**

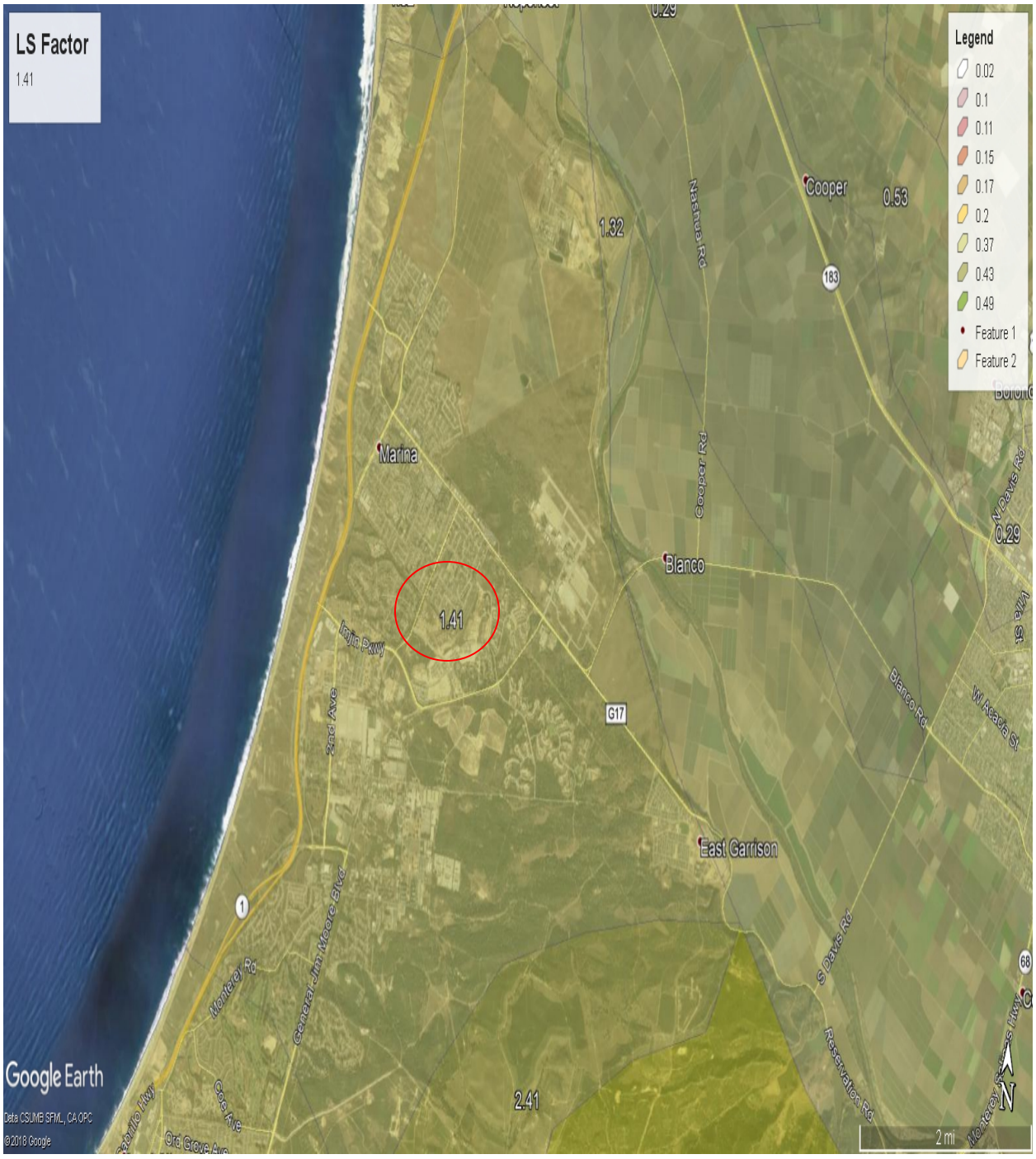
Receiving Water Risk per SMARTS and Flow Chart: **Low**

Combined Risk Level

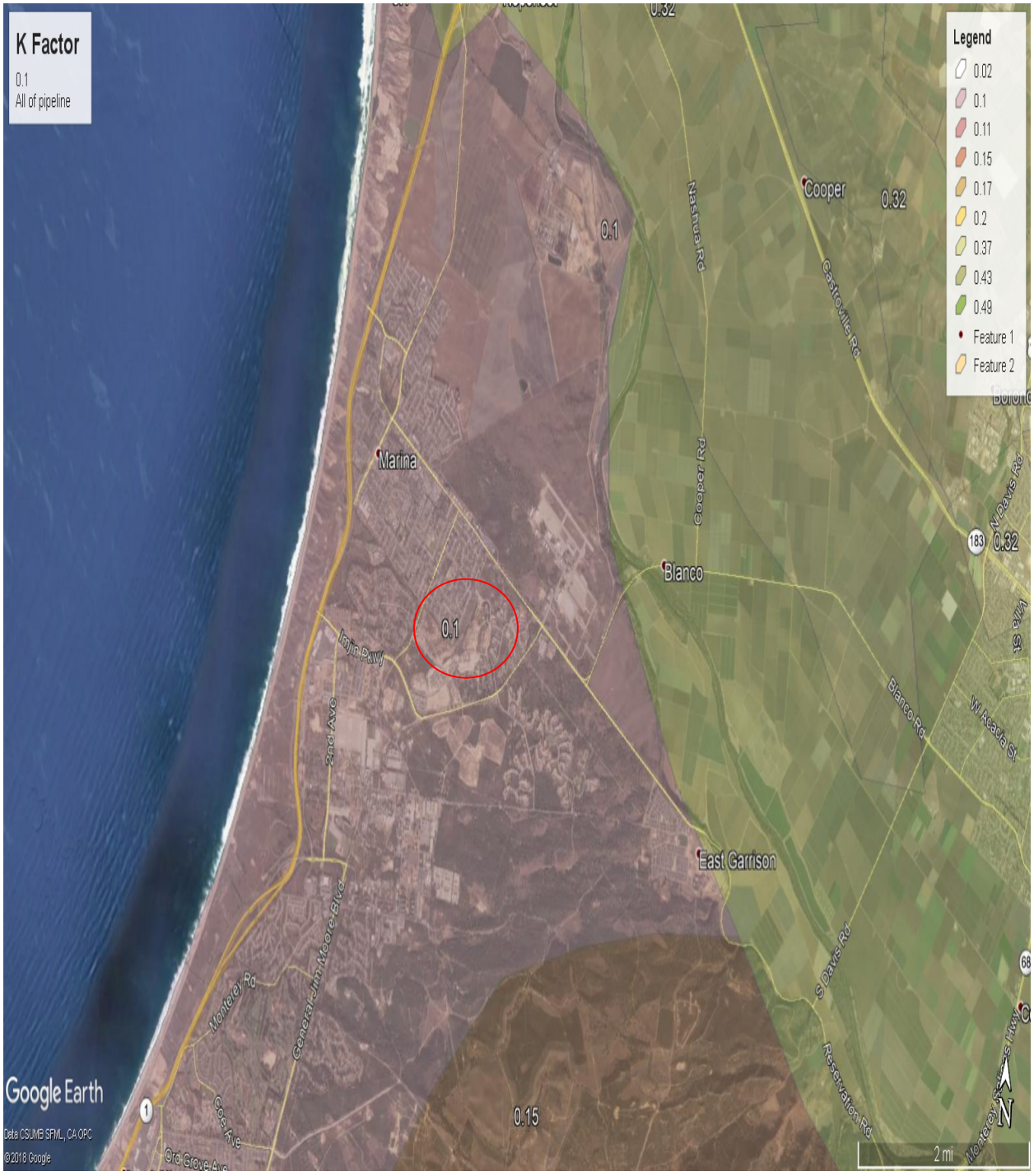
		Project Sediment Risk		
		LOW	**MEDIUM**	**HIGH**
Receiving Water Risk	**LOW**	**Type 1**	Type 1	Type 2
	MEDIUM	Type 1	Type 2	Type 3
	HIGH	Type 2	Type 3	Type 3

Project Segment has been determined to be an LUP Type 1 Site.

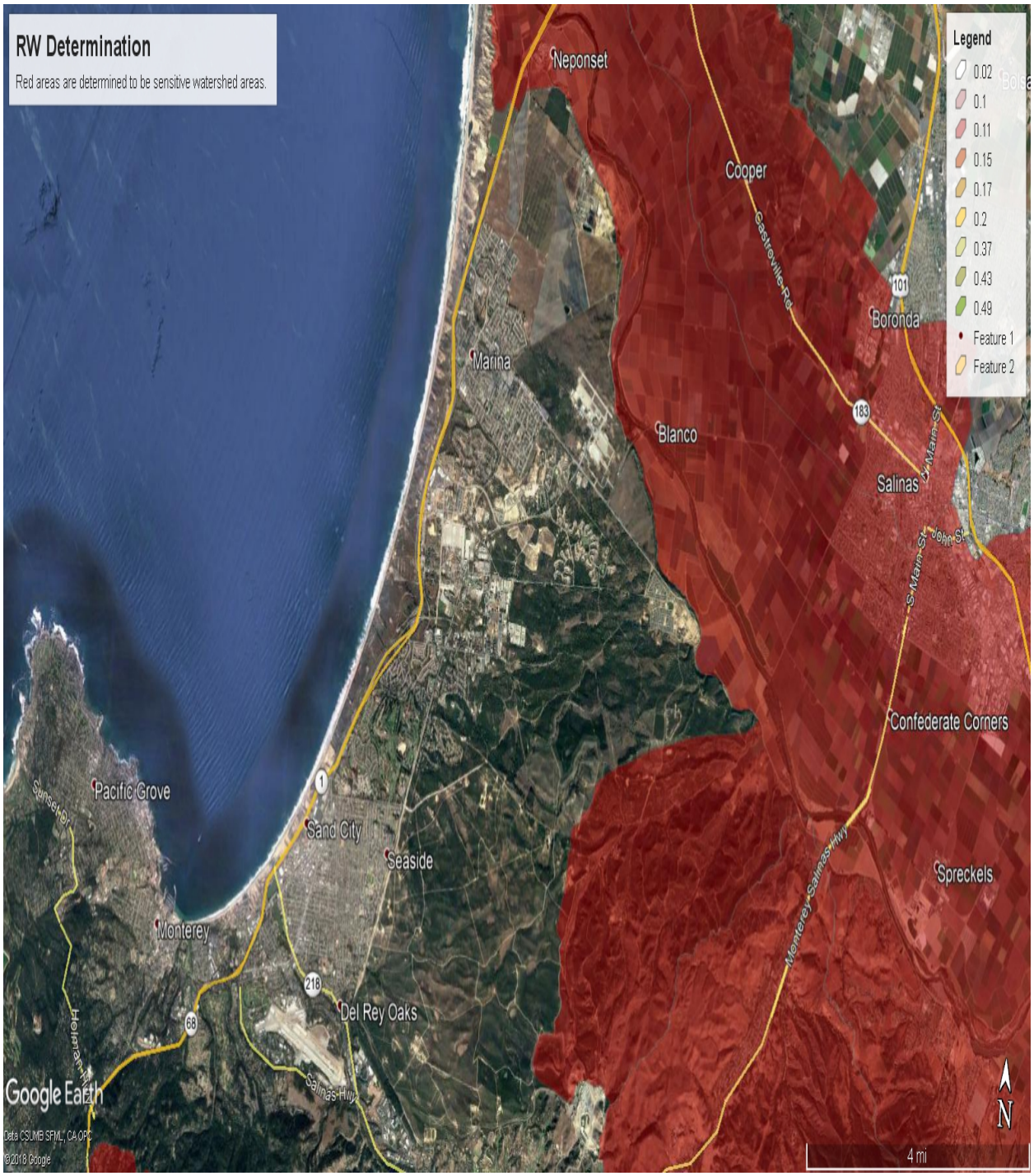
LS Factor per Google Earth for Approximate Pipeline Segment Mid-Point Location



K Factor per Google Earth for Approximate Pipeline Segment Mid-Point Location



Receiving Water per Google Earth for Approximate Pipeline Segment Mid-Point Location



Facility Information

Start Date: 03/01/2020	**Latitude:** 36.6372
End Date: 05/31/2020	**Longitude:** -121.8099

Calculation Results

Rainfall erosivity factor (R Factor) = **8.85**

A rainfall erosivity factor of 5.0 or greater has been calculated for your site's period of construction.

You do NOT qualify for a waiver from NPDES permitting requirements and must seek Construction General Permit (CGP) coverage. If you are located in an area where EPA is the permitting authority, you must submit a Notice of Intent (NOI) through the NPDES eReporting Tool (NeT).Otherwise, you must seek coverage under your state's CGP.

Risk Determination Document

Transmission Mains Monterey Peninsula Water Supply Project (TMMPWSP)

Transfer Pipeline

Cities of Seaside and Marina

Monterey County, CA

Hwy 1 Bore and TAMC to Marina Drive Pipeline Segment

Sediment Risk Determination:

RUSLE: A = R x K x LS x C (1) x P (1)

R Factor per EPA Erosivity Waiver = **8.95**

Google Earth SMARTs Populated K Factor = **0.10**

Google Earth SMARTs Populated LS Factor = **1.41**

A = **8.85** (R Factor) x **0.10** (K Factor) x **1.41** (LS Factor) = **1.26 tons/acre/year**

Project's Sediment Risk = **Low**

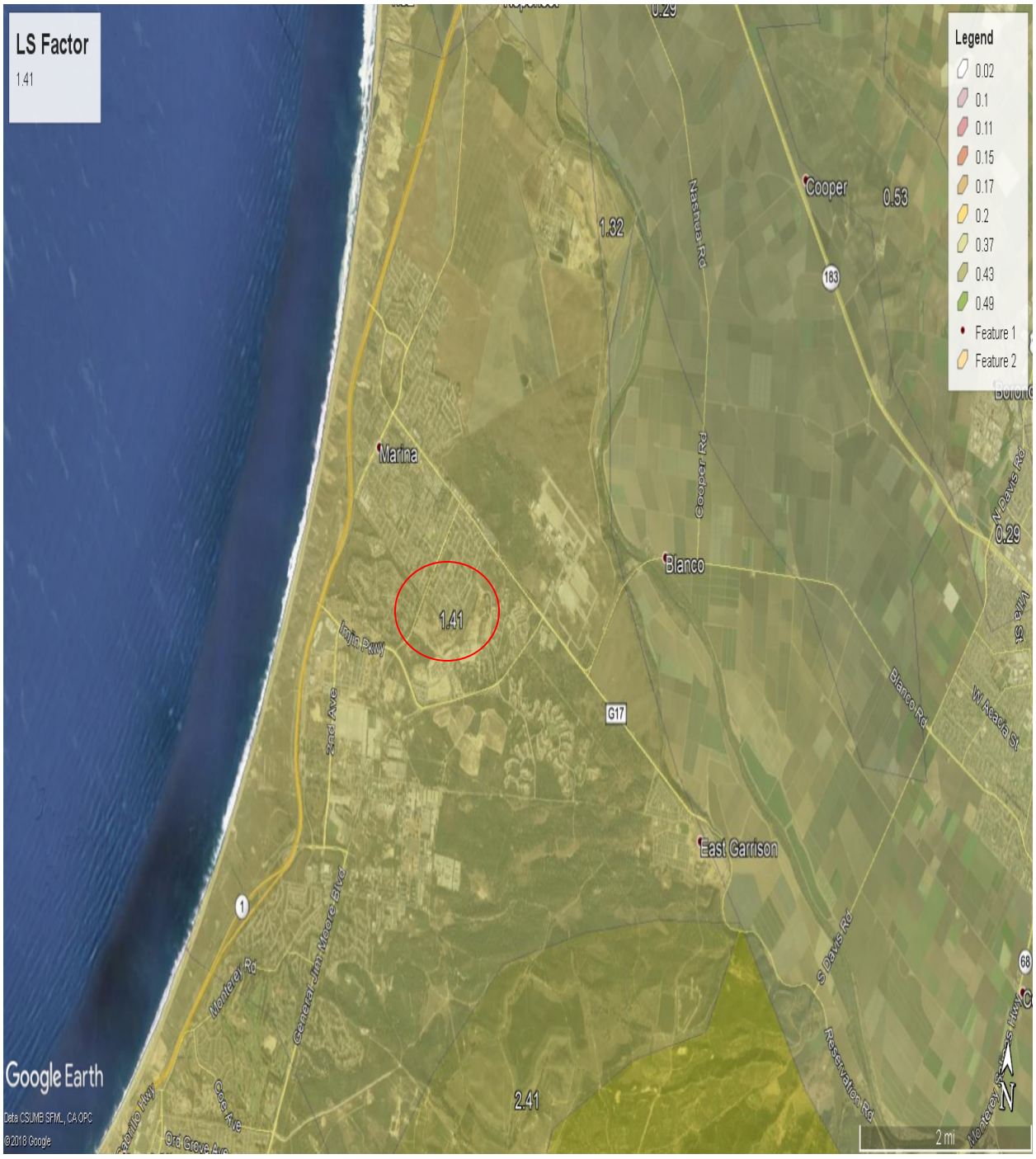
Receiving Water Risk per SMARTS and Flow Chart: **Low**

Combined Risk Level

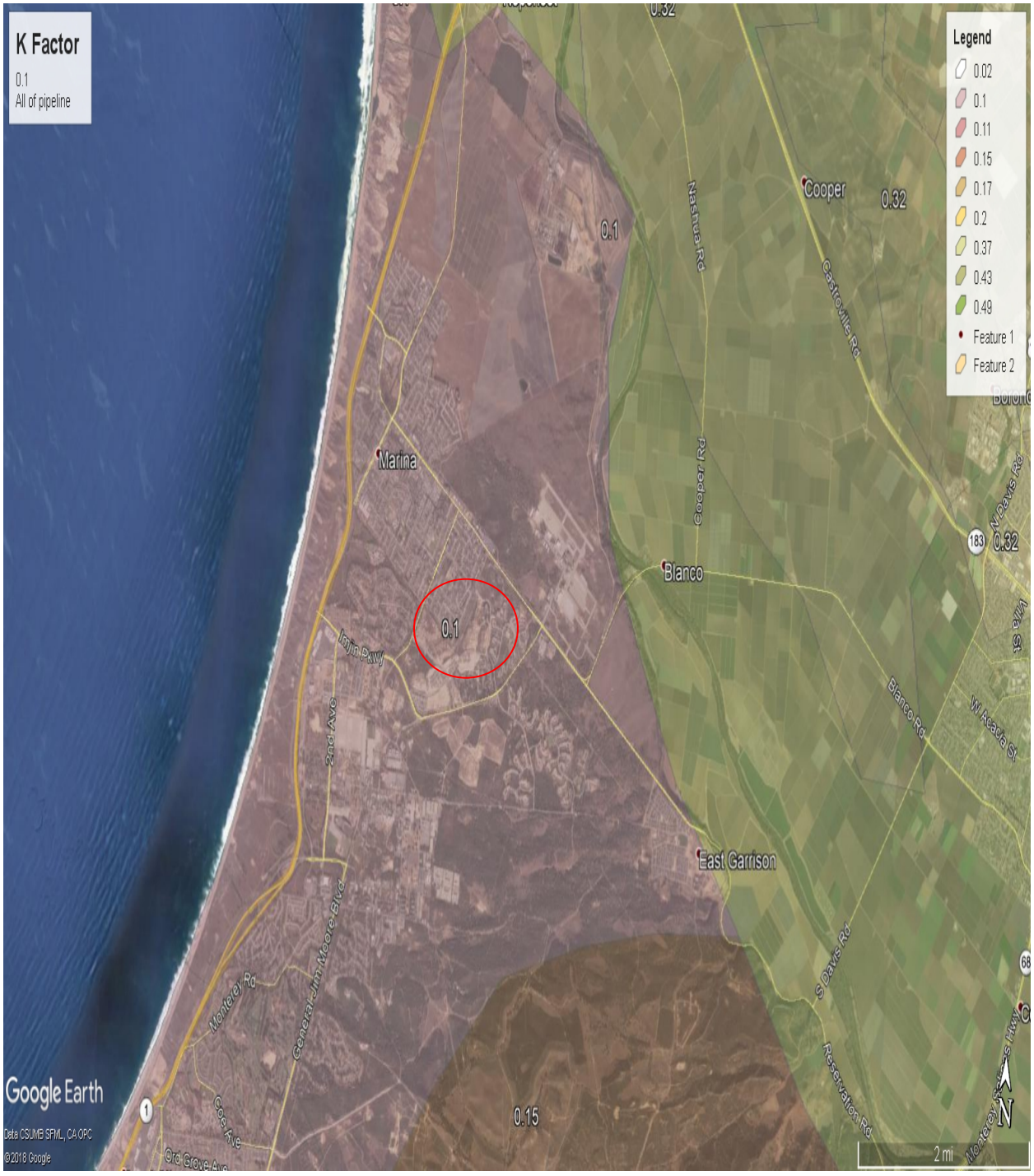
		Project Sediment Risk		
		LOW	**MEDIUM**	**HIGH**
Receiving Water Risk	**LOW**	**Type 1**	Type 1	Type 2
	MEDIUM	Type 1	Type 2	Type 3
	HIGH	Type 2	Type 3	Type 3

Project Segment has been determined to be an LUP Type 1 Site.

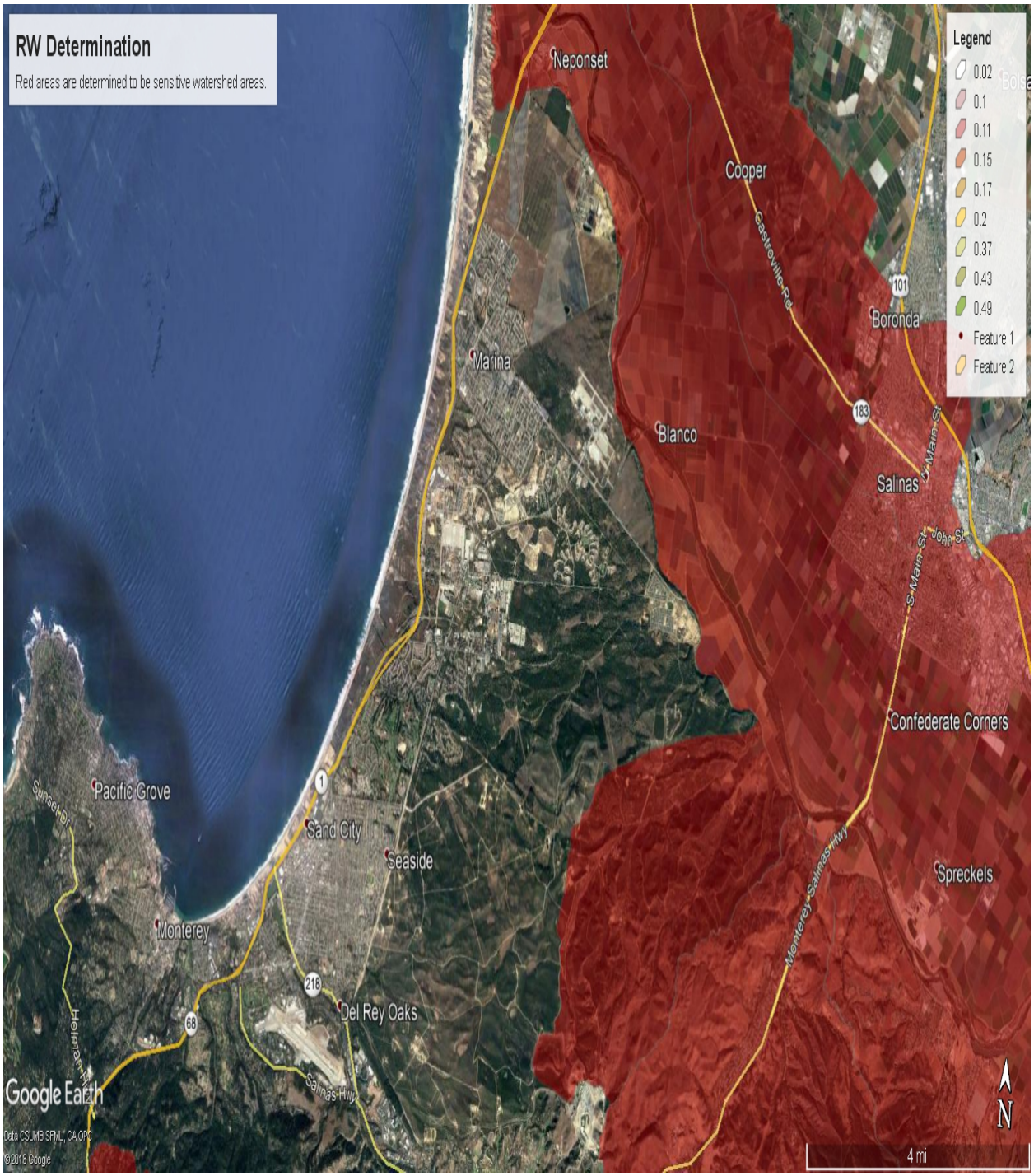
LS Factor per Google Earth for Approximate Pipeline Segment Mid-Point Location



K Factor per Google Earth for Approximate Pipeline Segment Mid-Point Location



Receiving Water per Google Earth for Approximate Pipeline Segment Mid-Point Location



Facility Information

Start Date: 03/01/2020	**Latitude:** 36.6372
End Date: 06/30/2020	**Longitude:** -121.8099

Calculation Results

Rainfall erosivity factor (R Factor) = **8.95**

A rainfall erosivity factor of 5.0 or greater has been calculated for your site's period of construction.

You do NOT qualify for a waiver from NPDES permitting requirements and must seek Construction General Permit (CGP) coverage. If you are located in an area where EPA is the permitting authority, you must submit a Notice of Intent (NOI) through the NPDES eReporting Tool (NeT).Otherwise, you must seek coverage under your state's CGP.

Risk Determination Document

Transmission Mains Monterey Peninsula Water Supply Project (TMMPWSP)

Transfer Pipeline

Cities of Seaside and Marina

Monterey County, CA

Marina Drive to North Terminus Pipeline Segment

Sediment Risk Determination:

RUSLE: A = R x K x LS x C (1) x P (1)

R Factor per EPA Erosivity Waiver = **103**

Google Earth SMARTs Populated K Factor = **0.10**

Google Earth SMARTs Populated LS Factor = **1.41**

A = **103** (R Factor) x **0.10** (K Factor) x **1.41** (LS Factor) = **14.52 tons/acre/year**

Project's Sediment Risk = **Low**

Receiving Water Risk per SMARTS and Flow Chart: **Low**

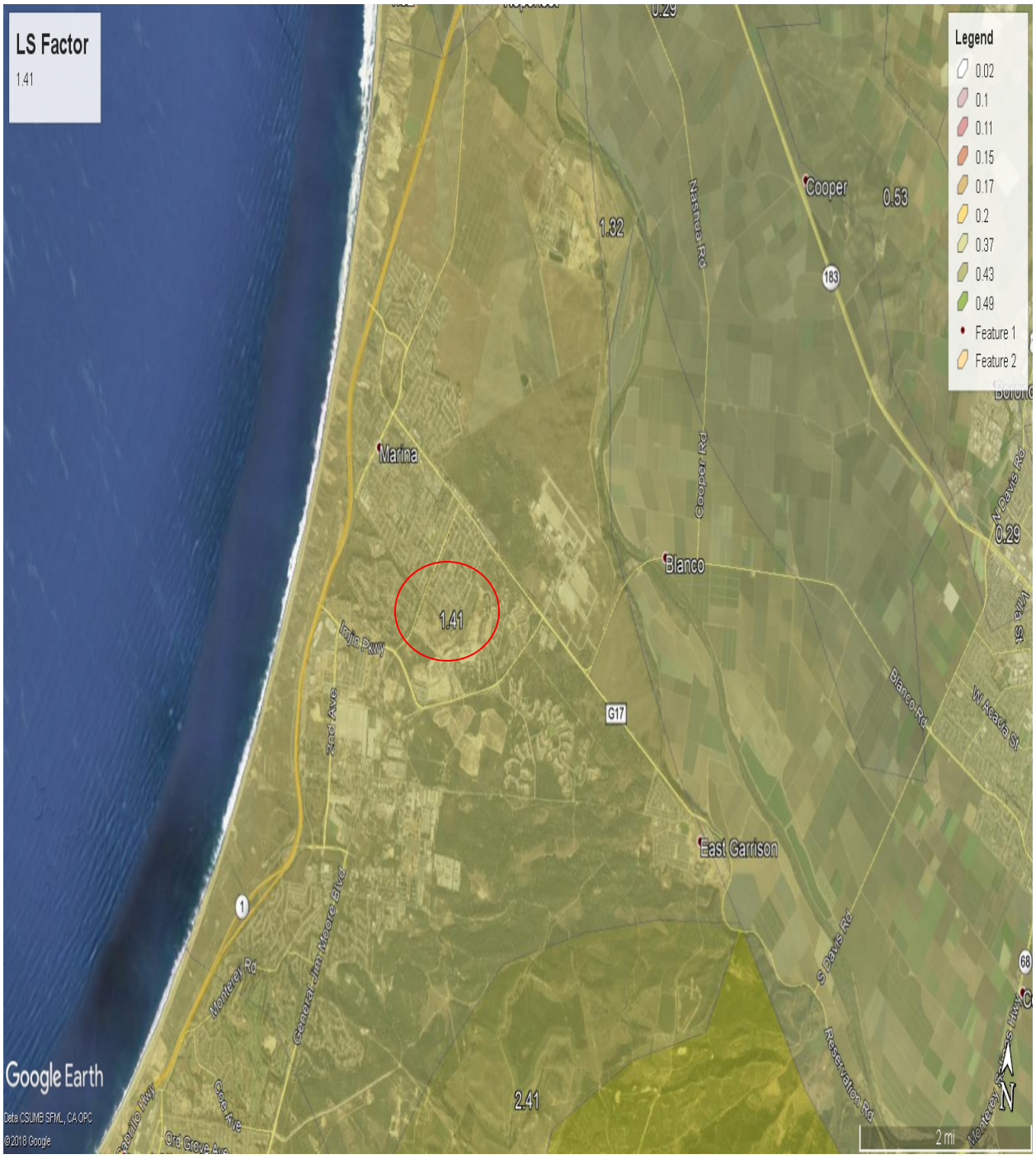
Combined Risk Level

Project Sediment Risk

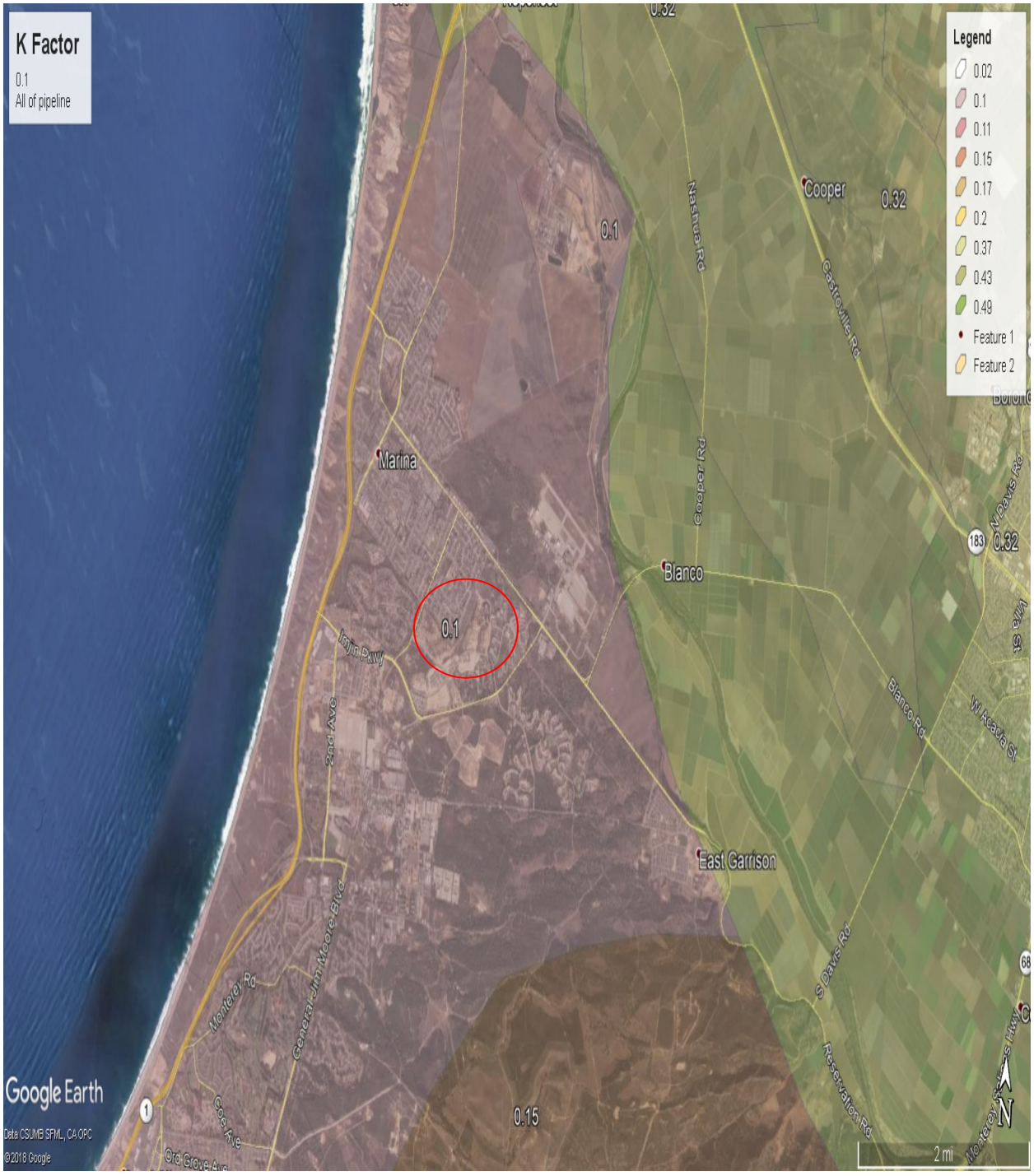
Receiving Water Risk	LOW	MEDIUM	HIGH
LOW	**Type 1**	Type 1	Type 2
MEDIUM	Type 1	Type 2	Type 3
HIGH	Type 2	Type 3	Type 3

Project Segment has been determined to be an LUP Type 1 Site.

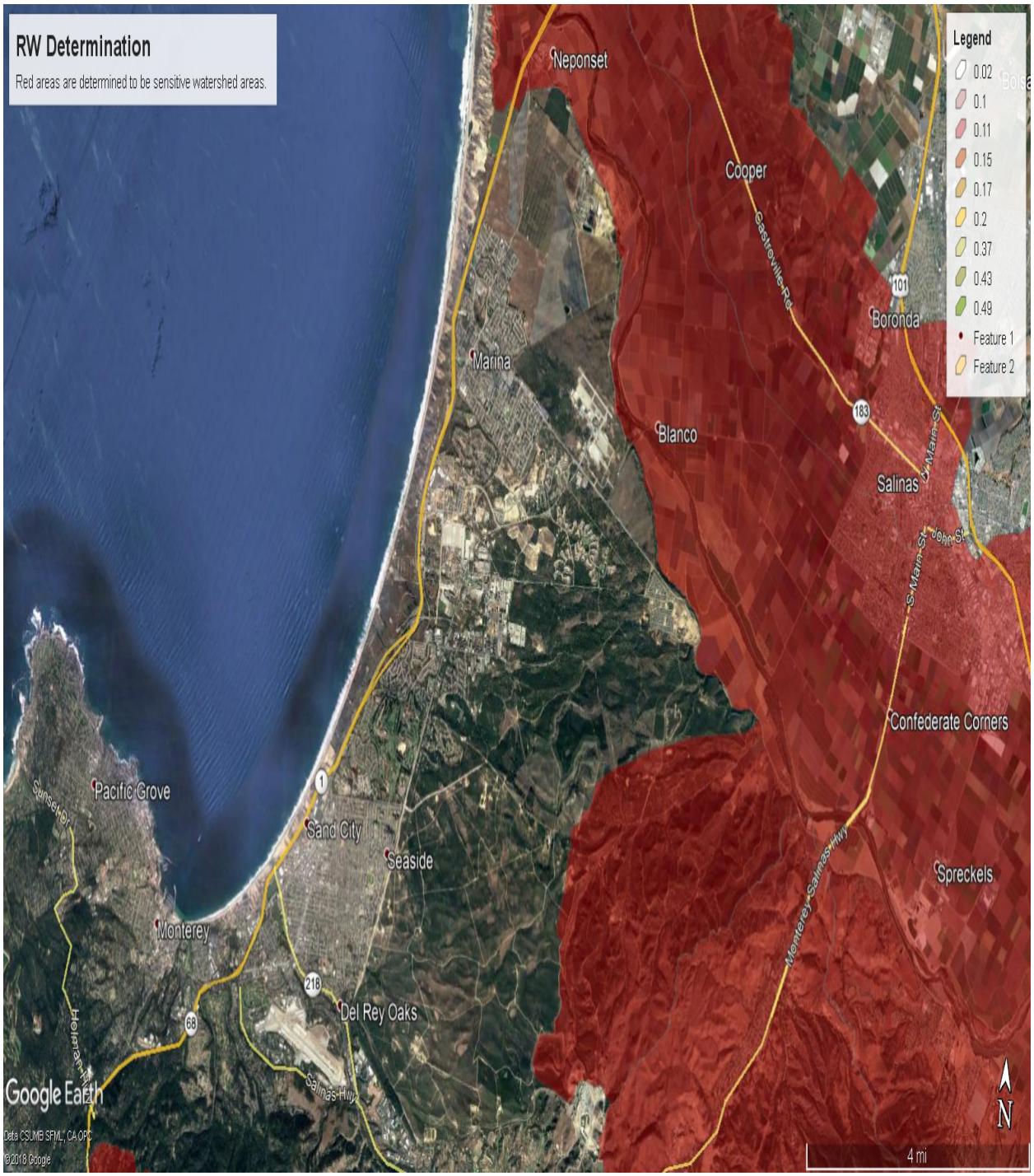
LS Factor per Google Earth for Approximate Pipeline Segment Mid-Point Location



K Factor per Google Earth for Approximate Pipeline Segment Mid-Point Location



Receiving Water per Google Earth for Approximate Pipeline Segment Mid-Point Location



Facility Information

Start Date: 06/01/2020	**Latitude:** 36.6999
End Date: 01/31/2021	**Longitude:** -121.7922

Calculation Results

Rainfall erosivity factor (R Factor) = **103**

A rainfall erosivity factor of 5.0 or greater has been calculated for your site's period of construction.

You do NOT qualify for a waiver from NPDES permitting requirements and must seek Construction General Permit (CGP) coverage. If you are located in an area where EPA is the permitting authority, you must submit a Notice of Intent (NOI) through the NPDES eReporting Tool (NeT).Otherwise, you must seek coverage under your state's CGP.

CERTIFICATE OF TRAINING

CALIFORNIA CONSTRUCTION GENERAL PERMIT

QUALIFIED SWPPP DEVELOPER (QSD)
AND
QUALIFIED SWPPP PRACTITIONER (QSP)

Sean Kazemi

May 22, 2019 - Jul 22, 2021

Certificate # 01036

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION®

California Stormwater Quality Association and
California Construction General Permit Training Team

CERTIFICATE OF TRAINING

CALIFORNIA CONSTRUCTION GENERAL PERMIT

QUALIFIED SWPPP DEVELOPER (QSD)
AND
QUALIFIED SWPPP PRACTITIONER (QSP)

Erica Colunga

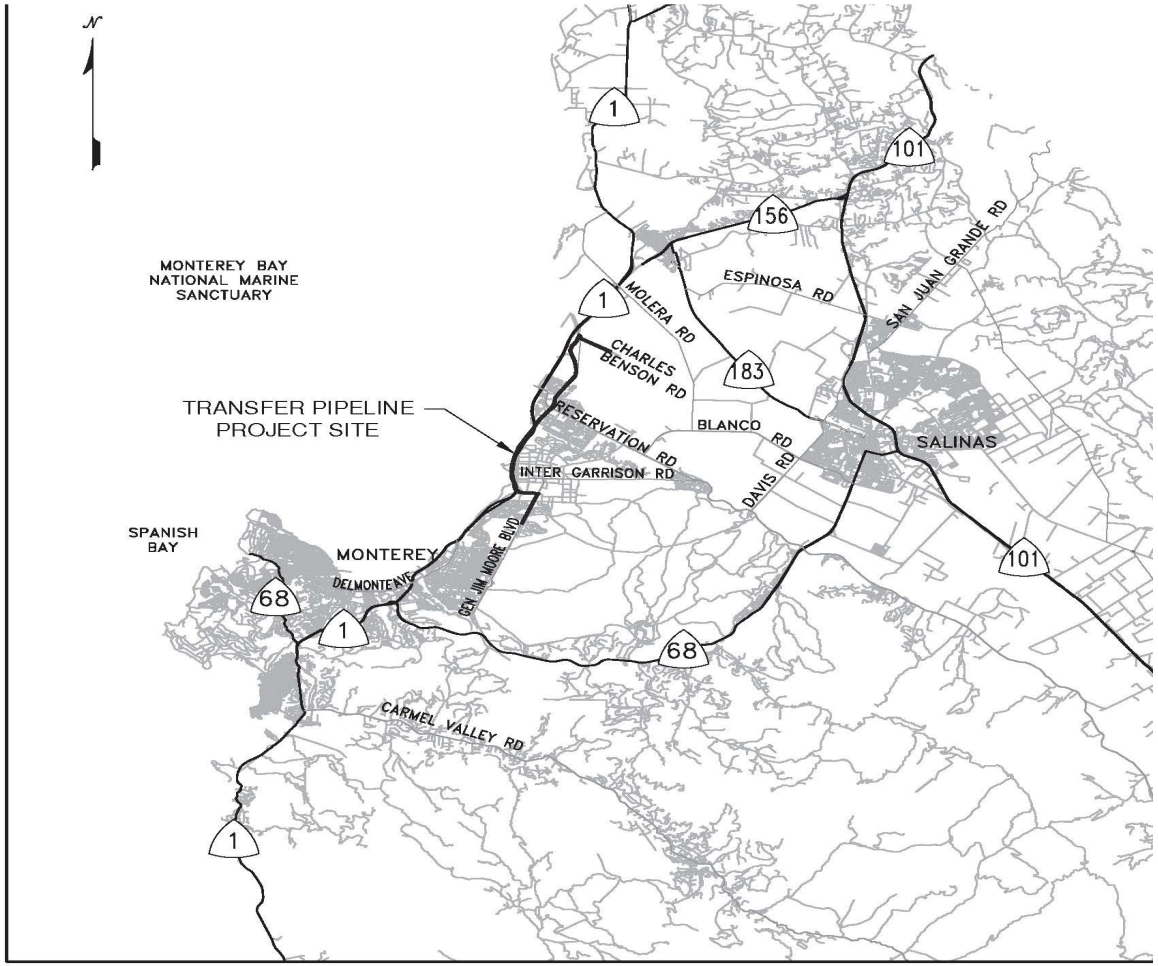
Dec 25, 2017 - Feb 23, 2020

Certificate # 26511

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION®

California Stormwater Quality Association and
California Construction General Permit Training Team

APPENDIX B SITE VICINITY MAP



SITE LOCATION MAP
NTS

LEGEND

N

Pipeline Alignment

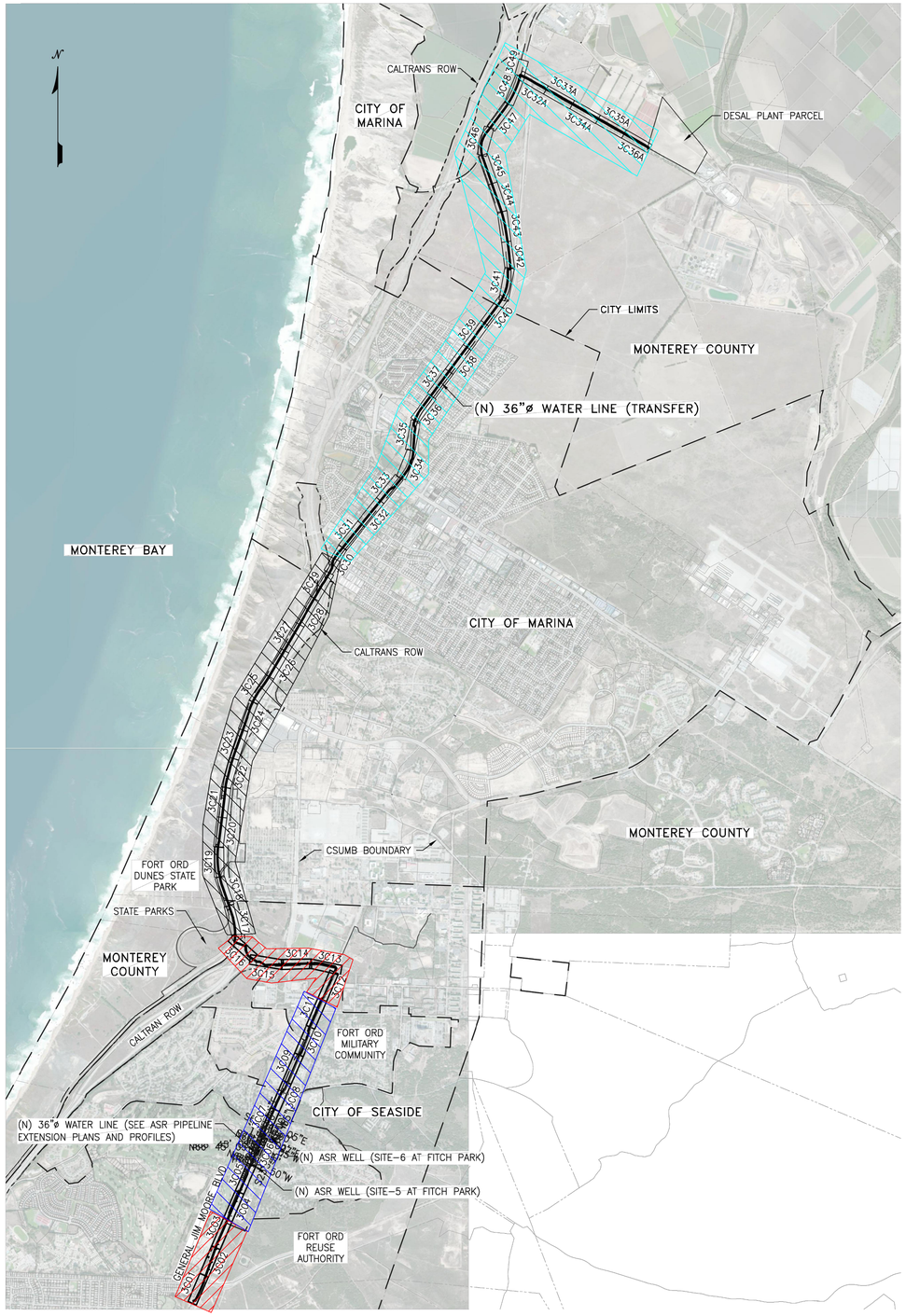
Transmission Mains Monterey Peninsula Water Supply Project (TMMPWSP)
Transfer Pipeline

Cities of Seaside and Marina
Monterey County, CA

Appendix B

KAZ ASSOCIATES
ENVIRONMENTAL SERVICES

APPENDIX C EROSION AND SEDIMENT CONTROL MAPS

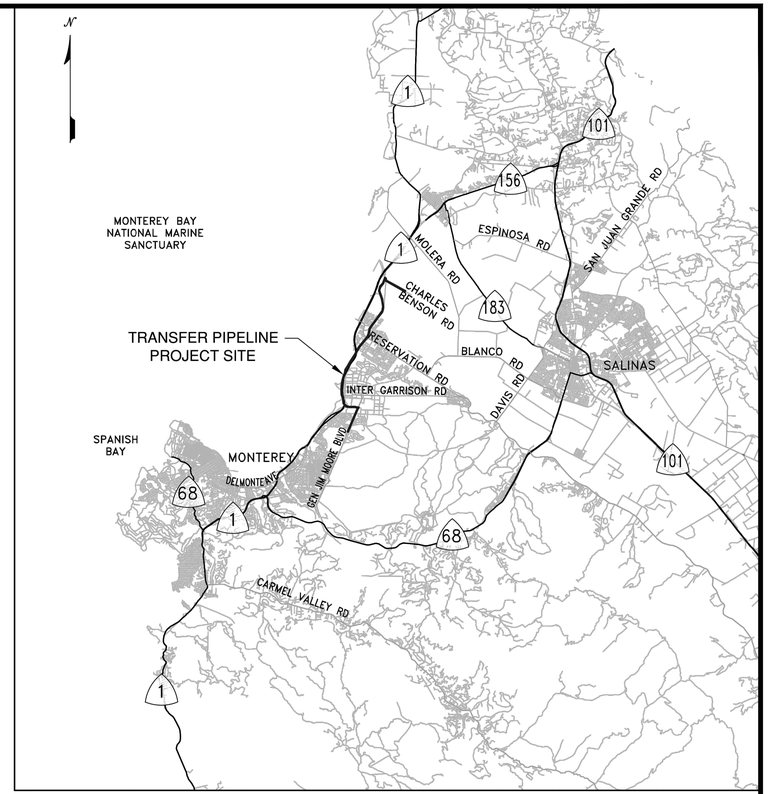


KEY MAP
1"=2.000'

0 2000 4000 6000
SCALE: 1" = 2,000'

LEGEND

- PIPELINE SEGMENT GENERAL JIM MOORE AND LIGHTFIGHTER ACTIVE SEPTEMBER 2019 THRU DECEMBER 2019
- PIPELINE SEGMENT GENERAL JIM MOORE RESTART ACTIVE MARCH 2020 THRU MAY 2020 (PLAN UPDATE PRIOR TO RESTART)
- PIPELINE SEGMENT HWY 1 TO MARINA DRIVE ACTIVE MARCH 2020 THRU JUNE 2020 (PLAN UPDATE PRIOR TO RESTART)
- PIPELINE SEGMENT MARINA DRIVE TO DESAL PLANT ACTIVE JUNE 2020 THRU JAN 2021 (PLAN UPDATE PRIOR TO RESTART)



SITE LOCATION MAP
NTS

NOTES

1) All pipeline segments for the project have been determined to be an LUP Type 1 risk levels. All activities will comply with LUP Type 1 requirements per the General Construction Permit, (Attachment A and A.1), as well as all local City/County requirements.
2) The project activities will be phased with a shut down period anticpated for January and February 2020. Pipe installation is anticipated to start on a portion of General Jim Moore Blvd and Lightfighter Drive in September 2019 through December 2019. Pipe construction is anticipated to recommence in March/April 2020 through project completion of January 2021.
3) Prior to the start of any phase of construction, all existing storm drain inlets will be protected with sediment control barriers as outlined in the SWPPP. Routine maintenance will be performed as needed and always prior to or after rain events.
6) Paved streets will be swept if trackout or debris is present, prior to rain and as necessary to abate all construction related track out of dirt or debris.
7) Trench spoils will be removed from active pipe installation areas and or temporary cover with appropriate anchoring will be installed prior to the onset of rain.
8) During dry conditions active areas and trench spoils will be watered sufficiently to minimize dust emissions.
9) Access points to unpaved pipe installation areas will have temporary rumble plates and/or rock aggregate installed and maintained to minimize track out to paved area if applicable.
10) All material dirt stockpiles will be covered with plastic sheeting, tarps or equivalents prior to any forecasted rain or high winds.
11) Construction activities will be monitored daily and additional BMPs will be deployed as necessary prior to rain events.
12) Waste water washouts will be established within the project limits (final locations to be field determined) or at the main construction yard(s) to be determined at time of SWPPP creation.
13) Additional BMPs will be stockpile at the site (i.e. fiber rolls, erosion control blankets, plastic liner, gravel bags, etc.) to implement in prior to rain and/or in the event of a failure or emergency.

BMP INSTALLATION LOG

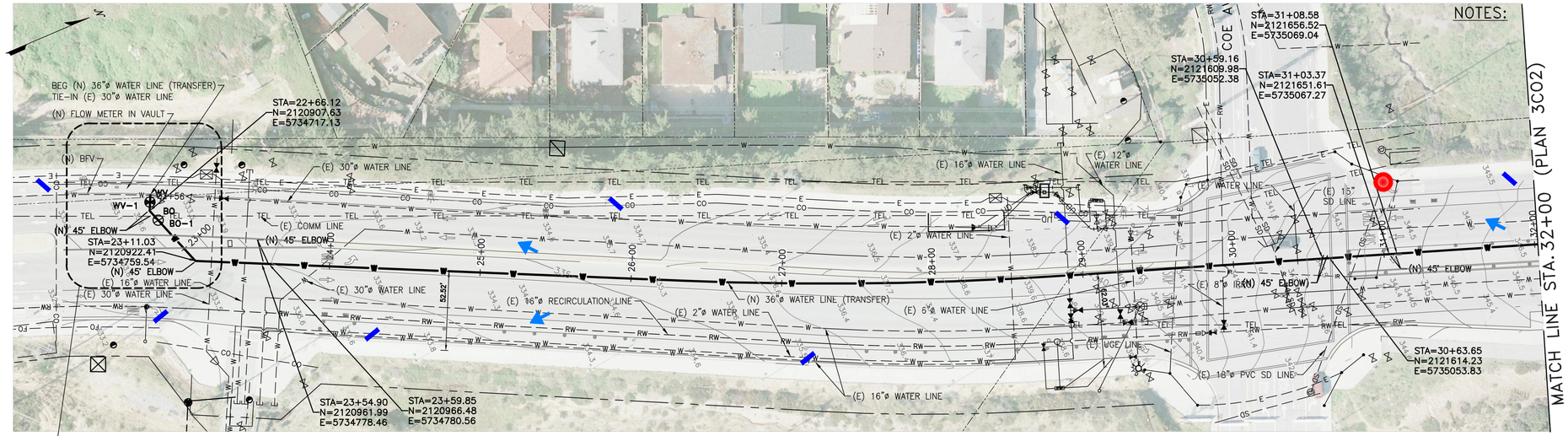
AREA	DESCRIPTION OF BMP's	DATE COMPLETED

REV	DESCRIPTION	DWN/CKD	APPROVED	DATE

PREPARED FOR:
GARNEY CONSTRUCTION
324 E. 11TH STREET, SUITE E2
TRACY, CA 95376
(925) 800-1848

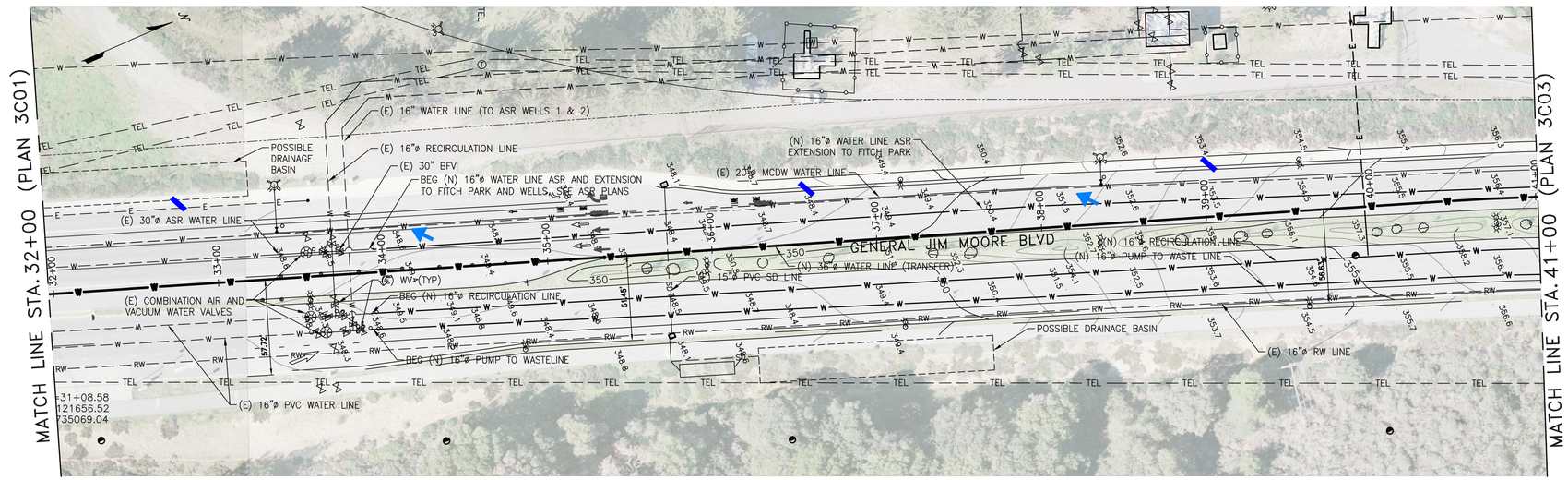
PREPARED BY:
KAZ ASSOCIATES
ENVIRONMENTAL SERVICES
6600 GOODYEAR ROAD, BENICIA, CA 94510
PHONE: (707) 747-1126 FAX: (925) 871-5172

DRAWING DESCRIPTION:
TRANSMISSION MAINS FOR MPWSP TRANSFER PIPELINE
SEASIDE, MARINA AND MONTEREY COUNTY, CA
EROSION AND SEDIMENT CONTROL PLAN
JULY 2019



SEE DETAILS FOR TIE-IN AND NORTH FLOW METER METER VAULT ON SHEETS 0000M21 AND 0000M25.

PLAN
1"=40'



PLAN
1"=40'

NOTES

1. The pipeline project has been determined to be an LUP Type 1 site. All activities will comply with LUP Type 1 requirements per the General Construction Permit, (Attachment A and A.1), as well as all local City/County requirements.
2. Prior to the start of any phase of construction, all existing storm drain inlets will be protected with sediment control barriers as outlined in the SWPPP, (inlet protection and gravel bag check dams). Routine maintenance will be performed as needed and always prior to or after rain events.
3. Paved streets will be swept daily if trackout of dirt or debris is present, always prior to rain and as necessary to clean work areas and minimize potential sediment laden discharges.
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BMP INSTALLATION LOG

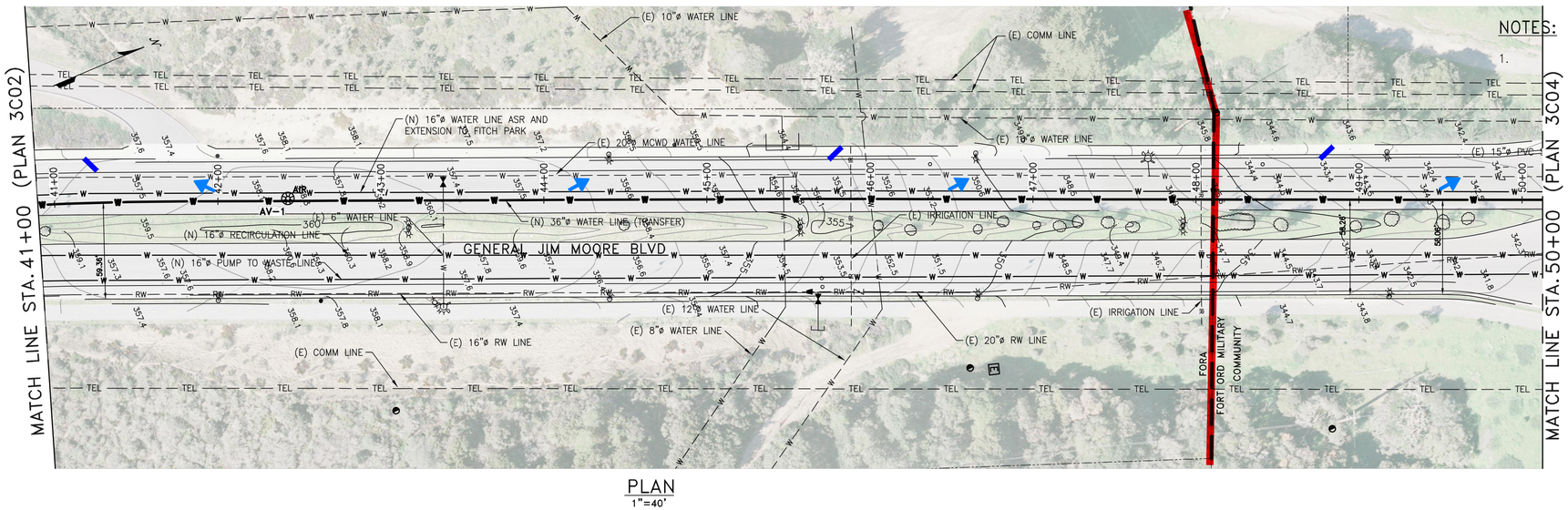
AREA	DESCRIPTION OF BMP's	DATE COMPLETED

REV	DESCRIPTION	DWN/CKD	APPROVED	DATE

PREPARED FOR:
GARNEY CONSTRUCTION
324 E. 11TH STREET, SUITE E2
TRACY, CA 95376
(925) 800-1848

PREPARED BY:
KAZ ASSOCIATES
ENVIRONMENTAL SERVICES
6600 GOODYEAR ROAD, BENICIA, CA 94510
PHONE: (707) 747-1126 FAX: (925) 871-5172

DRAWING DESCRIPTION:
TRANSMISSION MAINS FOR MPWSP
TRANSFER PIPELINE
SEASIDE, MARINA AND MONTEREY COUNTY, CA
EROSION AND SEDIMENT CONTROL PLAN
JULY 2019



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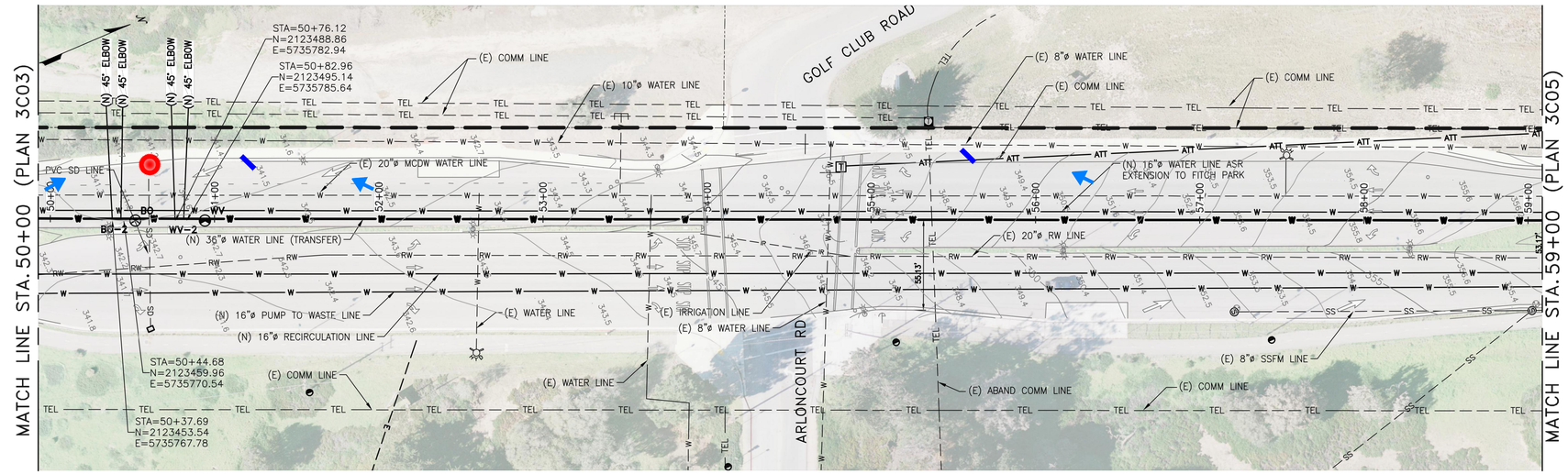

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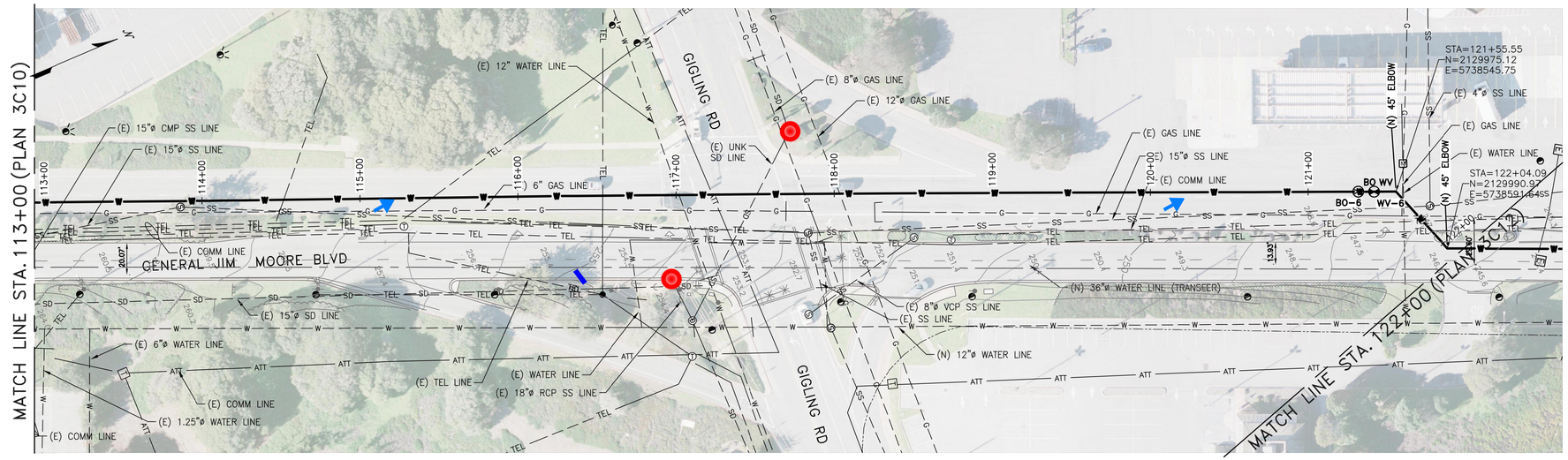
Sheets 4-6 to be uploaded to SMARTs via a SWPPP Amendment prior to restart anticipated for March/April 2020



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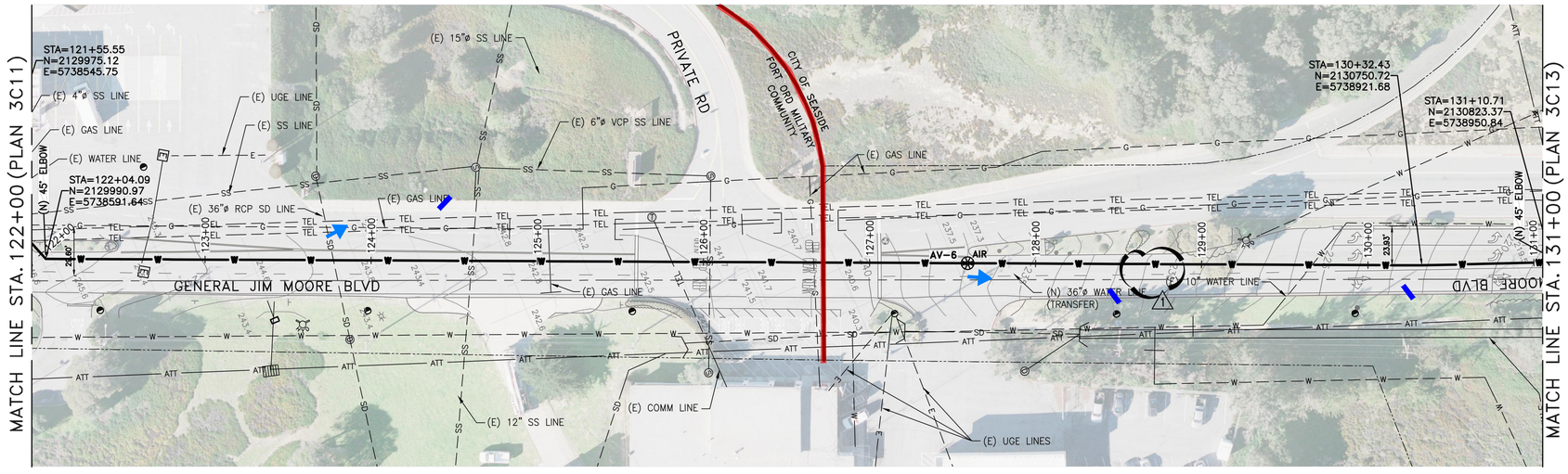

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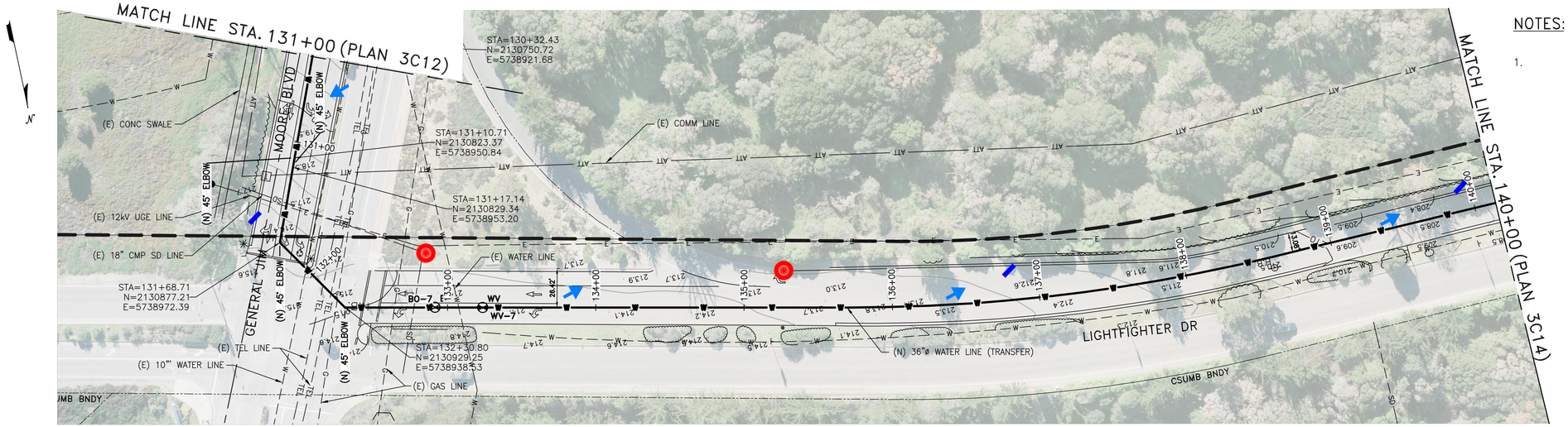

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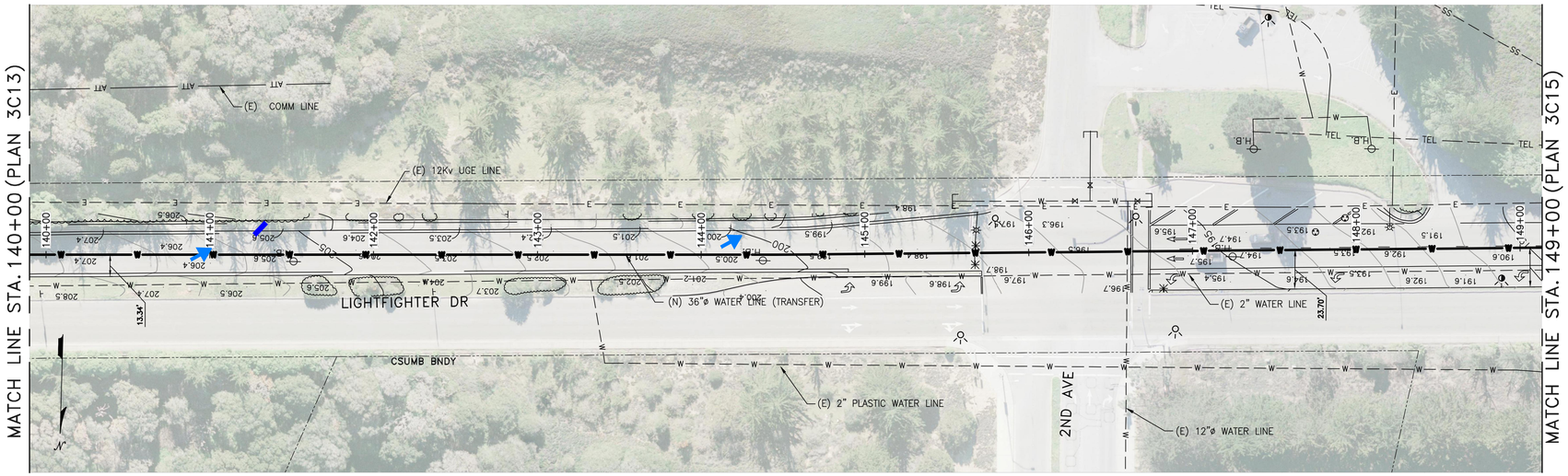

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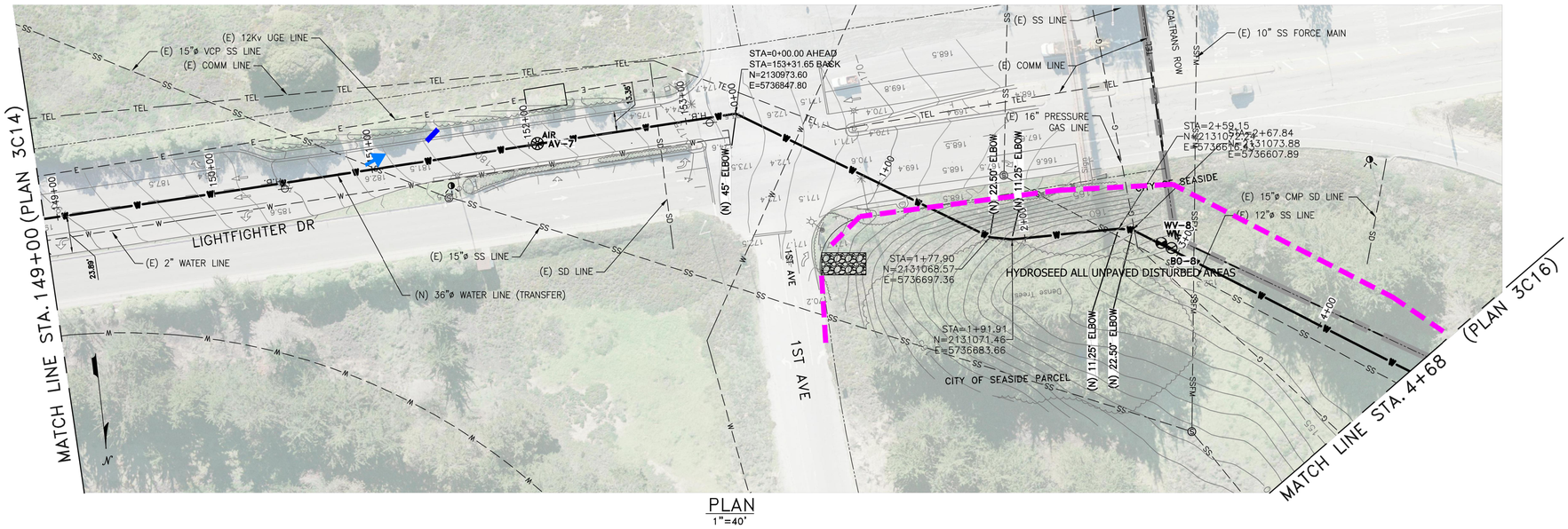

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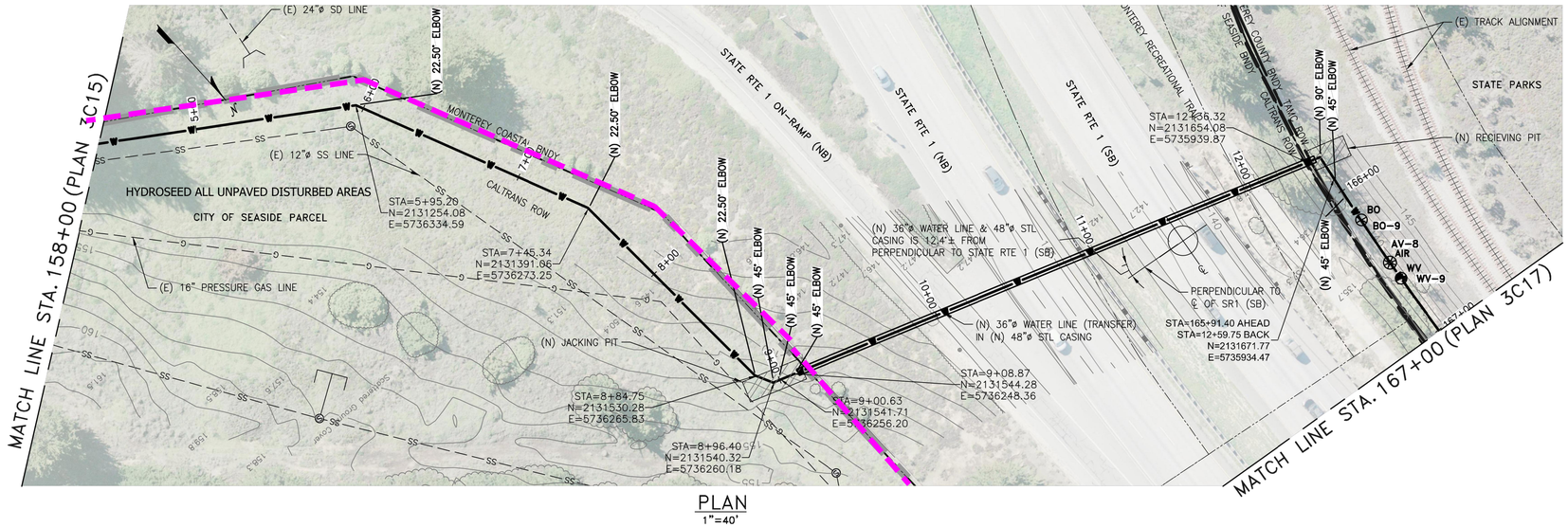

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EROSION AND SEDIMENT CONTROL PLAN
JULY 2019

Sheets 10-31 to be uploaded to SMARTs via a SWPPP Amendment prior to restart anticipated for March/April 2020

APPENDIX D SWPPP AMENDMENT LOG

RECORD OF SWPPP AMENDMENTS
For
Transmission Mains Monterey Peninsula Water Supply Project (TMMPWSP)
Transfer Pipeline
WDID# _____

No.	Date	Description	Amended by
01			
02			
03			
04			
05			
06			
07			
08			
09			.
10			.

*All SWPPP amendments must be completed by a QSD per General Construction Permit Order No. 2009-0009-DWQ requirements (Section XIV.A).

QSD SWPPP AMENDMENT CERTIFICATION

Amendment Number: ____

Project Name: Transmission Mains Monterey Peninsula Water Supply Project (TMMPWSP) – Transfer Pipeline

Date: _____

Brief description of SWPPP Amendment:

"I certify under a penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

QSD Signature: _____

QSD Name: _____

Professional Registration: _____

APPENDIX E ATTACHMENT A OF GENERAL PERMIT ORDER NO. 2009-0009-DWQ

ATTACHMENT A
Linear Underground/ Overhead Requirements

A. DEFINITION OF LINEAR UNDERGROUND/OVERHEAD PROJECTS 1
B. LINEAR PROJECT PERMIT REGISTRATION DOCUMENTS (PRDs) 3
C. LINEAR PROJECT TERMINATION OF COVERAGE REQUIREMENTS..4
D. DISCHARGE PROHIBITIONS 6
E. SPECIAL PROVISIONS.....8
F. EFFLUENT STANDARDS & RECEIVING WATER MONITORING 13
G. RECEIVING WATER LIMITATIONS 16
H. TRAINING QUALIFICATIONS 17
I. TYPES OF LINEAR PROJECTS 19
J. LUP TYPE-SPECIFIC REQUIREMENTS 20
K. STORM WATER POLLUTION PREVENTION PLAN (SWPPP) REQUIREMENTS 28
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M. MONITORING AND REPORTING REQUIREMENTS 31

All Linear Underground/Overhead project dischargers who submit permit registration documents (PRDs) indicating their intention to be regulated under the provisions of this General Permit shall comply with the following:

A. DEFINITION OF LINEAR UNDERGROUND/OVERHEAD PROJECTS

1. Linear Underground/Overhead Projects (LUPs) include, but are not limited to, any conveyance, pipe, or pipeline for the transportation of any gaseous, liquid (including water and wastewater for domestic municipal services), liquiescent, or slurry substance; any cable line or wire for the transmission of electrical energy; any cable line or wire for communications (e.g., telephone, telegraph, radio, or television messages); and associated ancillary facilities. Construction activities associated with LUPs include, but are not limited to, (a) those activities necessary for the installation of underground and overhead linear facilities (e.g., conduits, substructures, pipelines, towers, poles, cables, wires, connectors, switching, regulating and transforming equipment, and associated ancillary facilities); and include, but are not limited to, (b) underground utility mark-out, potholing, concrete and asphalt cutting and removal, trenching, excavation, boring and drilling, access road and pole/tower pad and cable/wire pull station, substation construction, substructure installation, construction of tower footings and/or foundations, pole and tower installations, pipeline installations, welding, concrete and/ or pavement repair or replacement, and stockpile/borrow locations.

2. LUP evaluation shall consist of two tasks:

a. Confirm that the project or project section(s) qualifies as an LUP. The State Water Board website contains a project determination guidance flowchart. http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

b. Identify which Type(s) (1, 2 or 3 described in Section I below) are applicable to the project or project sections based on project sediment and receiving water risk. (See Attachment A.1)

3. A Legally Responsible Person (LRP) for a Linear Underground/Overhead project is required to obtain CGP coverage under one or more permit registration document (PRD) electronic submittals to the State Water Board's Storm Water Multi-Application and Report Tracking (SMARTs) system. Attachment A.1 contains a flow chart to be used when determining if a linear project qualifies for coverage and to determine LUP Types. Since a LUP may be constructed within both developed and undeveloped locations and portions of LUPs may be constructed by different contractors, LUPs may be broken into logical permit sections. Sections may be determined based on portions of a project conducted by one contractor. Other situations may also occur, such as the time period in which the sections of a project will be constructed (e.g. project phases), for which separate permit coverage is possible. For projects that are broken into separate sections, a description of how each section relates to the overall project and the definition of the boundaries between sections shall be clearly stated.

4. Where construction activities transverse or enter into different Regional Water Board jurisdictions, LRPs shall obtain permit coverage for each Regional Water Board area involved prior to the commencement of construction activities.

5. Small Construction Rainfall Erosivity Waiver

EPA's Small Construction Erosivity Waiver applies to sites between one and five acres demonstrating that there are no adverse water quality impacts.

Dischargers eligible for a Rainfall Erosivity Waiver based on low erosivity potential shall complete the electronic Notice of Intent (NOI) and Sediment Risk form through the State Water Board's SMARTS system, certifying that the construction activity will take place during a period when the value of the rainfall erosivity factor is less than five. Where the LRP changes or another LRP is added during construction, the new LRP must also submit a waiver certification through the SMARTS system.

If a small linear construction site continues beyond the projected completion date given on the waiver certification, the LRP shall recalculate the rainfall erosivity factor for the new project duration and submit this information through the SMARTS system. If the new R factor is below five (5), the discharger shall update through SMARTS all applicable information on the waiver certification and retain a copy of the revised waiver onsite. The LRP shall submit the new waiver certification 30 days prior to the projected completion date listed on the original waiver form to assure exemption from permitting requirements is uninterrupted. If the new R factor is five (5) or above, the LRP shall be required to apply for coverage under this Order.

B. LINEAR PROJECT PERMIT REGISTRATION DOCUMENTS (PRDs)

Any information provided to the Regional Water Board shall comply with the Homeland Security Act and any other federal law that concerns security in the United States; any information that does not comply should not be submitted. PRDs shall consist of the following:

1. Notice of Intent (NOI)

Prior to construction activities, the LRP of a proposed linear underground/overhead project shall utilize the processes and methods provided in Attachment A.2, Permit Registration Documents (PRDs) – General Instructions for Linear Underground/Overhead Projects to comply with the Construction General Permit.

2. Site Maps

LRPs submitting PRDs shall include at least 3 maps. The first map will be a zoomed[1] 1000-1500 ft vicinity map that shows the starting point of the project. The second will be a zoomed map of 1000-1500 ft showing the ending location of the project. The third will be a larger view vicinity map, 1000 ft to 2000 ft, displaying the entire project location depending on the project size, and indicating the LUP type (1, 2 or 3) areas within the total project footprint.

3. Drawings

LRPs submitting PRDs shall include a construction drawing(s) or other appropriate drawing(s) or map(s) that shows the locations of storm drain

[1] An image with a close-up/enhanced detailed view of site features that show minute details such as streets and neighboring structures.
Or: An image with a close-up/enhanced detailed view of the site's surrounding infrastructure.
Or: An image with a close up detailed view of the project and its surroundings.

inlets and waterbodies[2] that may receive discharges from the construction activities and that shows the locations of BMPs to be installed for all those BMPs that can be illustrated on the revisable drawing(s) or map(s). If storm drain inlets, waterbodies, and/or BMPs cannot be adequately shown on the drawing(s) or map(s) they should be described in detail within the SWPPP.

4. Storm Water Pollution Prevention Plan (SWPPP)

LUP dischargers shall comply with the SWPPP Preparation, Implementation, and Oversight requirements in Section K of this Attachment.

5. Contact information

LUP dischargers shall include contact information for all contractors (or subcontractors) responsible for each area of an LUP project. This should include the names, telephone numbers, and addresses of contact personnel. Specific areas of responsibility of each contact, and emergency contact numbers should also be included.

6. In the case of a public emergency that requires immediate construction activities, a discharger shall submit a brief description of the emergency construction activity within five days of the onset of construction, and then shall submit all PRDs within thirty days.

C. LINEAR PROJECT TERMINATION OF COVERAGE REQUIREMENTS

The LRP may terminate coverage of an LUP when construction activities are completed by submitting an electronic notice of termination (NOT) through the State Water Board's SMARTS system. Termination requirements are different depending on the complexity of the LUP. An LUP is considered complete when: (a) there is no potential for construction-related storm water pollution; (b) all elements of the SWPPP have been completed; (c) construction materials and waste have been disposed of properly; (d) the site is in compliance with all local storm water management requirements; and (e) the LRP submits a notice of termination (NOT) and has received approval for termination from the appropriate Regional Water Board office.

1. LUP Stabilization Requirements

The LUP discharger shall ensure that all disturbed areas of the construction site are stabilized prior to termination of coverage under this General Permit. Final stabilization for the purposes of submitting an NOT

[2] Includes basin(s) that the MS4 storm sewer systems may drain to for Hydromodification or Hydrological Conditional of Concerns under the MS4 permits.

is satisfied when all soil disturbing activities are completed and one of the following criteria is met:

a. In disturbed areas that were vegetated prior to construction activities of the LUP, the area disturbed must be re-established to a uniform vegetative cover equivalent to 70 percent coverage of the preconstruction vegetative conditions. Where preconstruction vegetation covers less than 100 percent of the surface, such as in arid areas, the 70 percent coverage criteria is adjusted as follows: if the preconstruction vegetation covers 50 percent of the ground surface, 70 percent of 50 percent (.70 X .50=.35) would require 35 percent total uniform surface coverage; or

b. Where no vegetation is present prior to construction, the site is returned to its original line and grade and/or compacted to achieve stabilization; or

c. Equivalent stabilization measures have been employed. These measures include, but are not limited to, the use of such BMPs as blankets, reinforced channel liners, soil cement, fiber matrices, geotextiles, or other erosion resistant soil coverings or treatments.

2. LUP Termination of Coverage Requirements

The LRP shall file an NOT through the State Water Board's SMARTS system. By submitting an NOT, the LRP is certifying that construction activities for an LUP are complete and that the project is in full compliance with requirements of this General Permit and that it is now compliant with soil stabilization requirements where appropriate. Upon approval by the appropriate Regional Water Board office, permit coverage will be terminated.

3. Revising Coverage for Change of Acreage

When the LRP of a portion of an LUP construction project changes, or when a phase within a multi-phase project is completed, the LRP may reduce the total acreage covered by this General Permit. In reducing the acreage covered by this General Permit, the LRP shall electronically file revisions to the PRDs that include:

a. a revised NOI indicating the new project size;

b. a revised site map showing the acreage of the project completed, acreage currently under construction, acreage sold, transferred or added, and acreage currently stabilized.

c. SWPPP revisions, as appropriate; and

d. certification that any new LRPs have been notified of applicable requirements to obtain General Permit coverage. The certification shall include the name, address, telephone number, and e-mail address (if known) of the new LRP.

If the project acreage has increased, dischargers shall mail payment of revised annual fees within 14 days of receiving the revised annual fee notification.

D. DISCHARGE PROHIBITIONS

1. LUP dischargers shall not violate any discharge prohibitions contained in applicable Basin Plans or statewide water quality control plans. Waste discharges to Areas of Special Biological Significance (ASBS) are prohibited by the California Ocean Plan, unless granted an exception issued by the State Water Board.

2. LUP dischargers are prohibited from discharging non-storm water that is not otherwise authorized by this General Permit. Non-storm water discharges authorized by this General Permit[3] may include, fire hydrant flushing, irrigation of vegetative erosion control measures, pipe flushing and testing, water to control dust, street cleaning, dewatering,[4] uncontaminated groundwater from dewatering, and other discharges not subject to a separate general NPDES permit adopted by a Regional Water Board. Such discharges are allowed by this General Permit provided they are not relied upon to clean up failed or inadequate construction or post-construction BMPs designed to keep materials on site. These authorized non-storm water discharges:

[3] Dischargers must identify all authorized non-storm water discharges in the LUP's SWPPP and identify BMPs that will be implemented to either eliminate or reduce pollutants in non-storm water discharges. Regional Water Boards may direct the discharger to discontinue discharging such non-storm water discharges if determined that such discharges discharge significant pollutants or threaten water quality.
[4] Dewatering activities may be prohibited or need coverage under a separate permit issued by the Regional Water Boards. Dischargers shall check with the appropriate Regional Water Boards for any required permit or basin plan conditions prior to initial dewatering activities to land, storm drains, or waterbodies.

a. Shall not cause or contribute to a violation of any water quality standard;

b. Shall not violate any other provision of this General Permit;

c. Shall not violate any applicable Basin Plan;

d. Shall comply with BMPs as described in the SWPPP;

e. Shall not contain toxic constituents in toxic amounts or (other) significant quantities of pollutants;

f. Shall be monitored and meets the applicable NALs; and

g. Shall be reported by the discharger in the Annual Report.

If any of the above conditions are not satisfied, the discharge is not authorized by this General Permit. The discharger shall notify the Regional Water Board of any anticipated non-storm water discharges not authorized by this General Permit to determine the need for a separate NPDES permit.

Additionally, some LUP dischargers may be required to obtain a separate permit if the applicable Regional Water Board has adopted a General Permit for dewatering discharges. Wherever feasible, alternatives, that do not result in the discharge of non-storm water, shall be implemented in accordance with this Attachment's Section K.2 - SWPPP Implementation Schedule.

3. LUP dischargers shall ensure that trench spoils or any other soils disturbed during construction activities that are contaminated[5] are not discharged with storm water or non-storm water discharges into any storm drain or water body except pursuant to an NPDES permit.

When soil contamination is found or suspected and a responsible party is not identified, or the responsible party fails to promptly take the appropriate action, the LUP discharger shall have those soils sampled and tested to ensure that proper handling and public safety measures are

[5] Contaminated soil contains pollutants in concentrations that exceed the appropriate thresholds that various regulatory agencies set for those substances. Preliminary testing of potentially contaminated soils will be based on odor, soil discoloration, or prior history of the site's chemical use and storage and other similar factors. When soil contamination is found or suspected and a responsible party is not identified, or the responsible party fails to promptly take the appropriate action, the discharger shall have those soils sampled and tested to ensure proper handling and public safety measures are implemented. The legally responsible person will notify the appropriate local, State, or federal agency(ies) when contaminated soil is found at a construction site, and will notify the Regional Water Board by submitting an NOT at the completion of the project.

implemented. The LUP discharger shall notify the appropriate local, State, and federal agency(ies) when contaminated soil is found at a construction site, and will notify the appropriate Regional Water Board.

4. Discharging any pollutant-laden water that will cause or contribute to an exceedance of the applicable Regional Water Board's Basin Plan from a dewatering site or sediment basin into any receiving water or storm drain is prohibited.

5. Debris[6] resulting from construction activities are prohibited from being discharged from construction project sites.

E. SPECIAL PROVISIONS

1. Duty to Comply

a. The LUP discharger must comply with all of the conditions of this General Permit. Any permit noncompliance constitutes a violation of the Clean Water Act (CWA) and the Porter-Cologne Water Quality Control Act and is grounds for enforcement action and/or removal from General Permit coverage.

b. The LUP discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this General Permit has not yet been modified to incorporate the requirement.

2. General Permit Actions

a. This General Permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the discharger for a General Permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not annul any General Permit condition.

[6] Litter, rubble, discarded refuse, and remains of something destroyed.

b. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under Section 307(a) of the CWA for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this General Permit, this General Permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition and the dischargers so notified.

3. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an LUP discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this General Permit.

4. Duty to Mitigate

The LUP discharger shall take all responsible steps to minimize or prevent any discharge in violation of this General Permit, which has a reasonable likelihood of adversely affecting human health or the environment.

5. Proper Operation and Maintenance

The LUP discharger shall at all times properly operate and maintain any facilities and systems of treatment and control (and related appurtenances) which are installed or used by the discharger to achieve compliance with the conditions of this General Permit and with the requirements of the Storm Water Pollution Prevention Plan (SWPPP). Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance may require the operation of backup or auxiliary facilities or similar systems installed by a discharger when necessary to achieve compliance with the conditions of this General Permit.

6. Property Rights

This General Permit does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor does it authorize any infringement of Federal, State, or local laws or regulations.

7. Duty to Maintain Records and Provide Information

a. The LUP discharger shall maintain a paper or electronic copy of all required records, including a copy of this General Permit, for three years from the date generated or date submitted, whichever is last. These records shall be kept at the construction site or in a crew

member's vehicle until construction is completed, and shall be made available upon request.

b. The LUP discharger shall furnish the Regional Water Board, State Water Board, or USEPA, within a reasonable time, any requested information to determine compliance with this General Permit. The LUP discharger shall also furnish, upon request, copies of records that are required to be kept by this General Permit.

8. Inspection and Entry

The LUP discharger shall allow the Regional Water Board, State Water Board, USEPA, and/or, in the case of construction sites which discharge through a municipal separate storm sewer, an authorized representative of the municipal operator of the separate storm sewer system receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

a. Enter upon the discharger's premises at reasonable times where a regulated construction activity is being conducted or where records must be kept under the conditions of this General Permit;

b. Access and copy at reasonable times any records that must be kept under the conditions of this General Permit;

c. Inspect at reasonable times the complete construction site, including any off-site staging areas or material storage areas, and the erosion/sediment controls; and

d. Sample or monitor at reasonable times for the purpose of ensuring General Permit compliance.

9. Electronic Signature and Certification Requirements

a. All Permit Registration Documents (PRDs) and Notices of Termination (NOTs) shall be electronically signed, certified, and submitted via SMARTS to the State Water Board. Either the Legally Responsible Person (LRP), as defined in Appendix 5 – Glossary, or a person legally authorized to sign and certify PRDs and NOTs on behalf of the LRP (the LRP's Approved Signatory, as defined in Appendix 5 - Glossary) must submit all information electronically via SMARTS.

b. Changes to Authorization. If an Approved Signatory's authorization is no longer accurate, a new authorization satisfying the requirements of paragraph (a) of this section must be submitted via SMARTS prior to or

together with any reports, information or applications to be signed by an Approved Signatory.

c. All SWPPP revisions, annual reports, or other information required by the General Permit (other than PRDs and NOTs) or requested by the Regional Water Board, State Water Board, USEPA, or local storm water management agency shall be certified and submitted by the LRP or the LRP's Approved Signatory.

10. Certification

Any person signing documents under Section E.9 above, shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

11. Anticipated Noncompliance

The LUP discharger shall give advance notice to the Regional Water Board and local storm water management agency of any planned changes in the construction activity, which may result in noncompliance with General Permit requirements.

12. Penalties for Falsification of Reports

Section 309(c)(4) of the CWA provides that any person who knowingly makes any false material statement, representation, or certification in any record or other document submitted or required to be maintained under this General Permit, including reports of compliance or noncompliance shall upon conviction, be punished by a fine of not more than $10,000 or by imprisonment for not more than two years or by both.

13. Oil and Hazardous Substance Liability

Nothing in this General Permit shall be construed to preclude the institution of any legal action or relieve the discharger from any responsibilities, liabilities, or penalties to which the LUP discharger is or may be subject to under Section 311 of the CWA.

14. Severability

The provisions of this General Permit are severable; and, if any provision of this General Permit or the application of any provision of this General Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this General Permit shall not be affected thereby.

15. Reopener Clause

This General Permit may be modified, revoked and reissued, or terminated for cause due to promulgation of amended regulations, receipt of USEPA guidance concerning regulated activities, judicial decision, or in accordance with 40 Code of Federal Regulations (CFR) 122.62, 122.63, 122.64, and 124.5.

16. Penalties for Violations of Permit Conditions

a. Section 309 of the CWA provides significant penalties for any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the CWA or any permit condition or limitation implementing any such section in a permit issued under Section 402. Any person who violates any permit condition of this General Permit is subject to a civil penalty not to exceed $37,500[7] per calendar day of such violation, as well as any other appropriate sanction provided by Section 309 of the CWA.

b. The Porter-Cologne Water Quality Control Act also provides for civil and criminal penalties, which in some cases are greater than those under the CWA.

17. Transfers

This General Permit is not transferable. A new LRP of an ongoing construction activity must submit PRDs in accordance with the requirements of this General Permit to be authorized to discharge under this General Permit. An LRP who is a property owner with active General Permit coverage who sells a fraction or all the land shall inform the new property owner(s) of the requirements of this General Permit.

18. Continuation of Expired Permit

This General Permit continues in force and effect until a new General Permit is issued or the SWRCB rescinds this General Permit. Only those

[7] May be further adjusted in accordance with the Federal Civil Penalties Inflation Adjustment Act

dischargers authorized to discharge under the expiring General Permit are covered by the continued General Permit.

F. EFFLUENT STANDARDS & RECEIVING WATER MONITORING

1. Narrative Effluent Limitations

a. LUP dischargers shall ensure that storm water discharges and authorized non-storm water discharges regulated by this General Permit do not contain a hazardous substance equal to or in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4, unless a separate NPDES Permit has been issued to regulate those discharges.

b. LUP dischargers shall minimize or prevent pollutants in storm water discharges and authorized non-storm water discharges through the use of structural or non-structural controls, structures, and management practices that achieve BAT for toxic and non-conventional pollutants and BCT for conventional pollutants.

Table 1. Numeric Action Levels, Test Methods, Detection Limits, and Reporting Units

Parameter	Test Method	Discharge Type	Min. Detection Limit	Units	Numeric Action Level
pH	Field test with calibrated portable instrument	LUP Type 2	0.2	pH units	lower NAL = 6.5 upper NAL = 8.5
		LUP Type 3			lower NAL = 6.5 upper NAL = 8.5
Turbidity	EPA 0180.1 and/or field test with calibrated portable instrument	LUP Type 2	1	NTU	250 NTU
		LUP Type 3			250 NTU

2. Numeric Action Levels (NALs)

a. For LUP Type 2 and 3 dischargers, the lower storm event daily average NAL for pH is 6.5 pH units and the upper storm event daily average NAL for pH is 8.5 pH units. The LUP discharger shall take actions as described below if the storm event daily average discharge is outside of this range of pH values.

b. For LUP Type 2 and 3 dischargers, the storm event daily average NAL for turbidity is 250 NTU. The discharger shall take actions as described below if the storm event daily average discharge is outside of this range of turbidity values.

c. Whenever daily average analytical effluent monitoring results indicate that the discharge is below the lower NAL for pH, exceeds the upper NAL for pH, or exceeds the turbidity NAL (as listed in Table 1), the LUP discharger shall conduct a construction site and run-on evaluation to determine whether pollutant source(s) associated with the site's construction activity may have caused or contributed to the NAL exceedance and shall immediately implement corrective actions if they are needed.

d. The site evaluation will be documented in the SWPPP and specifically address whether the source(s) of the pollutants causing the exceedance of the NAL:

i Are related to the construction activities and whether additional BMPs or SWPPP implementation measures are required to (1) meet BAT/BCT requirements; (2) reduce or prevent pollutants in storm water discharges from causing exceedances of receiving water objectives; and (3) determine what corrective action(s) were taken or will be taken and with a description of the schedule for completion.

AND/OR:

ii Are related to the run-on associated with the construction site location and whether additional BMPs or SWPPP implementation measures are required to (1) meet BAT/BCT requirements; (2) reduce or prevent pollutants in storm water discharges from causing exceedances of receiving water objectives; and (3) decide what corrective action(s) were taken or will be taken, including a description of the schedule for completion.

3. Receiving Water Monitoring Triggers

a. The receiving water monitoring triggers for LUP Type 3 dischargers with direct discharges to surface waters are triggered when the daily average effluent pH values during any site phase when there is a high risk of pH discharge[8] fall outside of the range of 6.0 and 9.0 pH units, or when the daily average effluent turbidity exceeds 500 NTU.

b. LUP Type 3 dischargers with direct discharges to surface waters shall conduct receiving water monitoring whenever their effluent monitoring results exceed the receiving water monitoring triggers. If the pH trigger is exceeded, the receiving water shall be monitored for pH for the duration of coverage under this General Permit. If the turbidity trigger is exceeded, the receiving water shall be monitored for turbidity and SSC for the duration of coverage under this General Permit.

c. LUP Type 3 dischargers with direct discharges to surfaces waters shall initiate receiving water monitoring when the triggers are exceeded unless the storm event causing the exceedance is determined after the fact to equal to or greater than the 5-year 24-hour storm (expressed in inches of rainfall) as determined by using these maps:

   http://www.wrcc.dri.edu/pcpnfreq/nca5y24.gif
   http://www.wrcc.dri.edu/pcpnfreq/sca5y24.gif

   Verification of the 5-year 24-hour storm event shall be done by reporting on-site rain gauge readings as well as nearby governmental rain gauge readings.

d. If run-on is caused by a forest fire or any other natural disaster, then receiving water monitoring triggers do not apply.

G. RECEIVING WATER LIMITATIONS

1. LUP dischargers shall ensure that storm water discharges and authorized non-storm water discharges to any surface or ground water will not adversely affect human health or the environment.

2. LUP dischargers shall ensure that storm water discharges and authorized non-storm water discharges will not contain pollutants in quantities that threaten to cause pollution or a public nuisance.

3. LUP dischargers shall ensure that storm water discharges and authorized non-storm water discharges will not contain pollutants that cause or

[8] A period of high risk of pH discharge is defined as a project's complete utilities phase, complete vertical build phase, and any portion of any phase where significant amounts of materials are placed directly on the land at the site in a manner that could result in significant alterations of the background pH of the discharges.

contribute to an exceedance of any applicable water quality objectives or water quality standards (collectively, WQS) contained in a Statewide Water Quality Control Plan, the California Toxics Rule, the National Toxics Rule, or the applicable Regional Water Board's Water Quality Control Plan (Basin Plan).

H. TRAINING QUALIFICATIONS

1. General

All persons responsible for implementing requirements of this General Permit shall be appropriately trained. Training should be both formal and informal, occur on an ongoing basis, and should include training offered by recognized governmental agencies or professional organizations. Persons responsible for preparing, amending and certifying SWPPPs shall comply with the requirements in this Section H.

2. SWPPP Certification Requirements

a. **Qualified SWPPP Developer:** The LUP discharger shall ensure that all SWPPPs be written, amended and certified by a Qualified SWPPP Developer (QSD). A QSD shall have one of the following registrations or certifications, and appropriate experience, as required for:

i A California registered professional civil engineer;

ii A California registered professional geologist or engineering geologist;

iii A California registered landscape architect;

iv A professional hydrologist registered through the American Institute of Hydrology;

v A certified professional in erosion and sediment control (CPESC) ™ registered through Enviro Cert International, Inc;

vi A certified professional in storm water quality (CPSWQ)™ registered through Enviro Cert International, Inc.; or

vii A certified professional in erosion and sediment control registered through the National Institute for Certification in Engineering Technologies (NICET).

Effective two years after the adoption date of this General Permit, a QSD shall have attended a State Water Board-sponsored or approved QSD training course.

b. The LUP discharger shall ensure that the SWPPP is written and amended, as needed, to address the specific circumstances for each construction site covered by this General Permit prior to commencement of construction activity for any stage.

c. The LUP discharger shall list the name and telephone number of the currently designated Qualified SWPPP Developer(s) in the SWPPP.

d. **Qualified SWPPP Practitioner:** The LUP discharger shall ensure that all elements of any SWPPP for each project will be implemented by a Qualified SWPPP Practitioner (QSP). A QSP is a person responsible for non-storm water and storm water visual observations, sampling and analysis, and for ensuring full compliance with the permit and implementation of all elements of the SWPPP. Effective two years from the date of adoption of this General Permit, a QSP shall be either a QSD or have one of the following certifications:

   i A certified erosion, sediment and storm water inspector registered through Certified Professional in Erosion and Sediment Control, Inc.; or

   ii A certified inspector of sediment and erosion control registered through Certified Inspector of Sediment and Erosion Control, Inc.

   Effective two years after the adoption date of this General Permit, a QSP shall have attended a State Water Board-sponsored or approved QSP training course.

e. The LUP discharger shall ensure that the SWPPP include a list of names of all contractors, subcontractors, and individuals who will be directed by the Qualified SWPPP Practitioner, and who is ultimately responsible for implementation of the SWPPP. This list shall include telephone numbers and work addresses. Specific areas of responsibility of each subcontractor and emergency contact numbers shall also be included.

f. The LUP discharger shall ensure that the SWPPP and each amendment be signed by the Qualified SWPPP Developer. The LUP discharger shall include a listing of the date of initial preparation and the dates of each amendment in the SWPPP.

I. TYPES OF LINEAR PROJECTS

This attachment establishes three types (Type 1, 2 & 3) of complexity for areas within an LUP or project section based on threat to water quality. Project area Types are determined through Attachment A.1.

The Type 1 requirements below establish the baseline requirements for all LUPs subject to this General Permit. Additional requirements for Type 2 and Type 3 LUPs are labeled.

1. Type 1 LUPs*:*

LUP dischargers with areas of a LUP designated as Type 1 shall comply with the requirements in this Attachment. Type 1 LUPs are:

a. Those construction areas where 70 percent or more of the construction activity occurs on a paved surface and where areas disturbed during construction will be returned to preconstruction conditions or equivalent protection established at the end of the construction activities for the day; or

b. Where greater than 30 percent of construction activities occur within the non-paved shoulders or land immediately adjacent to paved surfaces, or where construction occurs on unpaved improved roads, including their shoulders or land immediately adjacent to them where:

   i Areas disturbed during construction will be returned to preconstruction conditions or equivalent protection is established at the end of the construction activities for the day to minimize the potential for erosion and sediment deposition, and

   ii Areas where established vegetation was disturbed during construction will be stabilized and re-vegetated by the end of project. When required, adequate temporary stabilization BMPs will be installed and maintained until vegetation is established to meet minimum cover requirements established in this General Permit for final stabilization.

c. Where the risk determination is as follows:

   i Low sediment risk, low receiving water risk, or

   ii Low sediment risk, medium receiving water risk, or

   iii Medium sediment risk, low receiving water risk

2. Type 2 LUPs:

Type 2 LUPs are determined by the Combined Risk Matrix in Attachment A.1. Type 2 LUPs have the specified combination of risk:

d. High sediment risk, low receiving water risk, or

e. Medium sediment risk, medium receiving water risk, or

f. Low sediment risk, high receiving water risk

Receiving water risk is either considered "Low" for those areas of the project that are not in close proximity to a sensitive receiving watershed, "Medium" for those areas of the project within a sensitive receiving watershed yet outside of the flood plain of a sensitive receiving water body, and "High" where the soil disturbance is within close proximity to a sensitive receiving water body. Project sediment risk is calculated based on the Risk Factor Worksheet in Attachment C of this General Permit.

3. Type 3 LUPs:

Type 3 LUPs are determined by the Combined Risk Matrix in Attachment A.1. Type 3 LUPs have the specified combination of risk:

a. High sediment risk, high receiving water risk, or

b. High sediment risk, medium receiving water risk, or

c. Medium sediment risk, high receiving water risk

Receiving water risk is either considered "Medium" for those areas of the project within a sensitive receiving watershed yet outside of the flood plain of a sensitive receiving water body, or "High" where the soil disturbance is within close proximity to a sensitive receiving water body. Project sediment risk is calculated based on the Risk Factor Worksheet in Attachment C.

J. LUP TYPE-SPECIFIC REQUIREMENTS

1. Effluent Standards

a. Narrative – LUP dischargers shall comply with the narrative effluent standards below.

i Storm water discharges and authorized non-storm water discharges regulated by this General Permit shall not contain a hazardous substance equal to or in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4, unless a separate NPDES Permit has been issued to regulate those discharges.

ii LUP dischargers shall minimize or prevent pollutants in storm water discharges and authorized non-storm water discharges through the use of controls, structures, and management practices that achieve BAT for toxic and non-conventional pollutants and BCT for conventional pollutants.

b. Numeric – LUP Type 1 dischargers are not subject to a numeric effluent standard

c. Numeric –LUP Type 2 dischargers are subject to a pH NAL of 6.5-8.5, and a turbidity NAL of 250 NTU.

d. Numeric – LUP Type 3 dischargers are subject to a pH NAL of 6.5-8.5, and a turbidity NAL of 250 NTU.

2. Good Site Management "Housekeeping"

a. LUP dischargers shall implement good site management (i.e., "housekeeping") measures for construction materials that could potentially be a threat to water quality if discharged. At a minimum, the good housekeeping measures shall consist of the following:

i Identify the products used and/or expected to be used and the end products that are produced and/or expected to be produced. This does not include materials and equipment that are designed to be outdoors and exposed to environmental conditions (i.e. poles, equipment pads, cabinets, conductors, insulators, bricks, etc.).

ii Cover and berm loose stockpiled construction materials that are not actively being used (i.e. soil, spoils, aggregate, fly-ash, stucco, hydrated lime, etc.).

iii Store chemicals in watertight containers (with appropriate secondary containment to prevent any spillage or leakage) or in a storage shed (completely enclosed).

iv Minimize exposure of construction materials to precipitation (not applicable to materials designed to be outdoors and exposed to the environment).

v Implement BMPs to control the off-site tracking of loose construction and landscape materials.

b. LUP dischargers shall implement good housekeeping measures for waste management, which, at a minimum, shall consist of the following:

i Prevent disposal of any rinse or wash waters or materials on impervious or pervious site surfaces or into the storm drain system.

ii Ensure the containment of sanitation facilities (e.g., portable toilets) to prevent discharges of pollutants to the storm water drainage system or receiving water.

iii Clean or replace sanitation facilities and inspecting them regularly for leaks and spills.

iv Cover waste disposal containers at the end of every business day and during a rain event.

v Prevent discharges from waste disposal containers to the storm water drainage system or receiving water.

vi Contain and securely protect stockpiled waste material from wind and rain at all times unless actively being used.

vii Implement procedures that effectively address hazardous and non-hazardous spills.

viii Develop a spill response and implementation element of the SWPPP prior to commencement of construction activities. The SWPPP shall require that:

(1) Equipment and materials for cleanup of spills shall be available on site and that spills and leaks shall be cleaned up immediately and disposed of properly; and

(2) Appropriate spill response personnel are assigned and trained.

ix Ensure the containment of concrete washout areas and other washout areas that may contain additional pollutants so there is no discharge into the underlying soil and onto the surrounding areas.

c. LUP dischargers shall implement good housekeeping for vehicle storage and maintenance, which, at a minimum, shall consist of the following:

   i Prevent oil, grease, or fuel from leaking into the ground, storm drains or surface waters.

   ii Implement appropriate BMPs whenever equipment or vehicles are fueled, maintained or stored.

   iii Clean leaks immediately and disposing of leaked materials properly.

d. LUP dischargers shall implement good housekeeping for landscape materials, which, at a minimum, shall consist of the following:

   i Contain stockpiled materials such as mulches and topsoil when they are not actively being used.

   ii Contain fertilizers and other landscape materials when they are not actively being used.

   iii Discontinue the application of any erodible landscape material at least 2 days before a forecasted rain event[9] or during periods of precipitation.

   iv Applying erodible landscape material at quantities and application rates according to manufacture recommendations or based on written specifications by knowledgeable and experienced field personnel.

   v Stacking erodible landscape material on pallets and covering or storing such materials when not being used or applied.

e. LUP dischargers shall conduct an assessment and create a list of potential pollutant sources and identify any areas of the site where additional BMPs are necessary to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. This potential pollutant list shall be kept with the SWPPP and shall identify all non-visible pollutants which are known, or should be known, to occur on the construction site. At a minimum, when developing BMPs, LUP dischargers shall do the following:

[9] 50% or greater chance of producing precipitation.

i Consider the quantity, physical characteristics (e.g., liquid, powder, solid), and locations of each potential pollutant source handled, produced, stored, recycled, or disposed of at the site.

ii Consider the degree to which pollutants associated with those materials may be exposed to and mobilized by contact with storm water.

iii Consider the direct and indirect pathways that pollutants may be exposed to storm water or authorized non-storm water discharges. This shall include an assessment of past spills or leaks, non-storm water discharges, and discharges from adjoining areas.

iv Ensure retention of sampling, visual observation, and inspection records.

v Ensure effectiveness of existing BMPs to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges.

f. LUP dischargers shall implement good housekeeping measures on the construction site to control the air deposition of site materials and from site operations.

3. Non-Storm Water Management

a. LUP dischargers shall implement measures to control all non-storm water discharges during construction.

b. LUP dischargers shall wash vehicles in such a manner as to prevent non-storm water discharges to surface waters or MS4 drainage systems.

c. LUP dischargers shall clean streets in such a manner as to prevent unauthorized non-storm water discharges from reaching surface water or MS4 drainage systems.

4. Erosion Control

a. LUP dischargers shall implement effective wind erosion control.

b. LUP dischargers shall provide effective soil cover for inactive[10] areas and all finished slopes, and utility backfill.

[10] Areas of construction activity that have been disturbed and are not scheduled to be re-disturbed for at least 14 days

c. LUP dischargers shall limit the use of plastic materials when more sustainable, environmentally friendly alternatives exist. Where plastic materials are deemed necessary, the discharger shall consider the use of plastic materials resistant to solar degradation.

5. Sediment Controls

a. LUP dischargers shall establish and maintain effective perimeter controls as needed, and implement effective BMPs for all construction entrances and exits to sufficiently control erosion and sediment discharges from the site.

b. On sites where sediment basins are to be used, LUP dischargers shall, at minimum, design sediment basins according to the guidance provided in CASQA's Construction BMP Handbook.

c. **Additional LUP Type 2 & 3 Requirement:** LUP Type 2 & 3 dischargers shall apply linear sediment controls along the toe of the slope, face of the slope, and at the grade breaks of exposed slopes to comply with sheet flow lengths[11] in accordance with Table 2 below.

Table 2 – Critical Slope/Sheet Flow Length Combinations

Slope Percentage	Sheet flow length not to exceed
0-25%	20 feet
25-50%	15 feet
Over 50%	10 feet

d. **Additional LUP Type 2 & 3 Requirement:** LUP Type 2 & 3 dischargers shall ensure that construction activity traffic to and from the project is limited to entrances and exits that employ effective controls to prevent off-site tracking of sediment.

e. **Additional LUP Type 2 & 3 Requirement:** LUP Type 2 & 3 dischargers shall ensure that all storm drain inlets and perimeter controls, runoff control BMPs, and pollutant controls at entrances and exits (e.g. tire washoff locations) are maintained and protected from activities that reduce their effectiveness.

f. **Additional LUP Type 2 & 3 Requirement:** LUP Type 2 & 3 dischargers shall inspect all immediate access roads. At a minimum daily and prior to any rain event, the discharger shall remove any

[11] Sheet flow length is the length that shallow, low velocity flow travels across a site.

sediment or other construction activity-related materials that are deposited on the roads (by vacuuming or sweeping).

g. **Additional LUP Type 3 Requirement:** The Regional Water Board may require LUP Type 3 dischargers to implement additional site-specific sediment control requirements if the implementation of the other requirements in this section are not adequately protecting the receiving waters.

6. Run-on and Run-off Controls

a. LUP dischargers shall effectively manage all run-on, all runoff within the site and all runoff that discharges off the site. Run-on from off site-shall be directed away from all disturbed areas or shall collectively be in compliance with the effluent limitations in this Attachment.

b. Run-on and runoff controls are not required for Type 1 LUPs unless the evaluation of quantity and quality of run-on and runoff deems them necessary or visual inspections show that the site requires such controls.

7. Inspection, Maintenance and Repair

a. All inspection, maintenance repair and sampling activities at the discharger's LUP location shall be performed or supervised by a QSP representing the discharger. The QSP may delegate any or all of these activities to an employee trained to do the task(s) appropriately, but shall ensure adequate deployment.

b. LUP dischargers shall conduct visual inspections and observations daily during working hours (not recorded). At least once each 24-hour period during extended storm events, **LUP Type 2 & 3 dischargers** shall conduct visual inspections to identify and record BMPs that need maintenance to operate effectively, that have failed, or that could fail to operate as intended. Inspectors shall be the QSP or be trained by the QSP.

c. Upon identifying failures or other shortcomings, as directed by the QSP, LUP dischargers shall begin implementing repairs or design changes to BMPs within 72 hours of identification and complete the changes as soon as possible.

d. For each pre- and post-rain event inspection required, LUP dischargers shall complete an inspection checklist, using a form provided by the State Water Board or Regional Water Board or in an alternative format that includes the information described below.

e. The LUP discharger shall ensure that the checklist remains on-site or with the SWPPP. At a minimum, an inspection checklist should include:

i Inspection date and date the inspection report was written.

ii Weather information, including presence or absence of precipitation, estimate of beginning of qualifying storm event, duration of event, time elapsed since last storm, and approximate amount of rainfall in inches.

iii Site information, including stage of construction, activities completed, and approximate area of the site exposed.

iv A description of any BMPs evaluated and any deficiencies noted.

v If the construction site is safely accessible during inclement weather, list the observations of all BMPs: erosion controls, sediment controls, chemical and waste controls, and non-storm water controls. Otherwise, list the results of visual inspections at all relevant outfalls, discharge points, downstream locations and any projected maintenance activities.

vi Report the presence of noticeable odors or of any visible sheen on the surface of any discharges.

vii Any corrective actions required, including any necessary changes to the SWPPP and the associated implementation dates.

viii Photographs taken during the inspection, if any.

ix Inspector's name, title, and signature.

K. STORM WATER POLLUTION PREVENTION PLAN (SWPPP) REQUIREMENTS

1. Objectives

SWPPPs for all LUPs shall be developed and amended or revised by a QSD. The SWPPP shall be designed to address the following objectives:

a. All pollutants and their sources, including sources of sediment, associated with construction activities associated with LUP activity are controlled;

b. All non-storm water discharges are identified and either eliminated, controlled, or treated;

c. BMPs are effective and result in the reduction or elimination of pollutants in storm water discharges and authorized non-storm water discharges from LUPs during construction; and

d. Stabilization BMPs installed to reduce or eliminate pollutants after construction is completed are effective and maintained.

2. SWPPP Implementation Schedule

a. LUPs for which PRDs have been submitted to the State Water Board shall develop a site/project location SWPPP prior to the start of land-disturbing activity in accordance with this Section and shall implement the SWPPP concurrently with commencement of soil-disturbing activities.

b. For an ongoing LUP involving a change in the LRP, the new LRP shall review the existing SWPPP and amend it, if necessary, or develop a new SWPPP within 15 calendar days to conform to the requirements set forth in this General Permit.

3. Availability

The SWPPP shall be available at the construction site during working hours while construction is occurring and shall be made available upon request by a State or Municipal inspector. When the original SWPPP is retained by a crewmember in a construction vehicle and is not currently at the construction site, copies of the BMPs and map/drawing will be left with the field crew and the original SWPPP shall be made available via a request by radio/telephone.

L. REGIONAL WATER BOARD AUTHORITIES

1. Regional Water Boards shall administer the provisions of this General Permit. Administration of this General Permit may include, but is not limited to, requesting the submittal of SWPPPs, reviewing SWPPPs, reviewing monitoring and sampling and analysis reports, conducting compliance inspections, gathering site information by any medium including sampling, photo and video documentation, and taking enforcement actions.

2. Regional Water Boards may terminate coverage under this General Permit for dischargers who fail to comply with its requirements or where they determine that an individual NPDES permit is appropriate.

3. Regional Water Boards may issue separate permits for discharges of storm water associated with construction activity to individual dischargers, categories of dischargers, or dischargers in a geographic area. Upon issuance of such permits by a Regional Water Board, dischargers subject to those permits shall no longer be regulated by this General Permit.

4. Regional Water Boards may direct the discharger to reevaluate the LUP Type(s) for the project (or elements/areas of the project) and impose the appropriate level of requirements.

5. Regional Water Boards may terminate coverage under this General Permit for dischargers who negligently or with willful intent incorrectly determine or report their LUP Type (e.g., they determine themselves to be a LUP Type 1 when they are actually a Type 2).

6. Regional Water Boards may review PRDs and reject or accept applications for permit coverage or may require dischargers to submit a Report of Waste Discharge / NPDES permit application for Regional Water Board consideration of individual requirements.

7. Regional Water Boards may impose additional requirements on dischargers to satisfy TMDL implementation requirements or to satisfy provisions in their Basin Plans.

8. Regional Water Boards may require additional Monitoring and Reporting Program Requirements, including sampling and analysis of discharges to sediment-impaired water bodies.

9. Regional Water Boards may require dischargers to retain records for more than the three years required by this General Permit.

10. Based on an LUP's threat to water quality and complexity, the Regional Water Board may determine on a case-by-case basis that an LUP, or a portion of an LUP, is not eligible for the linear project requirements contained in this Attachment, and require that the discharger comply with all standard requirements in this General Permit.

11. The Regional Water Board may require additional monitoring and reporting program requirements including sampling and analysis of discharges to CWA § 303(d)-listed water bodies. Additional requirements imposed by the Regional Water Board shall be consistent with the overall monitoring effort in the receiving waters.

M. MONITORING AND REPORTING REQUIREMENTS

Table 3. LUP Summary of Monitoring Requirements

LUP Type	Visual Inspections				Sample Collection		
	Daily Site BMP	Pre-storm Event / Baseline	Daily Storm BMP	Post Storm	Storm Water Discharge	Receiving Water	Non-Visible (when applicable)
1	X						X
2	X	X	X	X	X		X
3	X	X	X	X	X	X	X

1. Objectives

LUP dischargers shall prepare a monitoring and reporting program (M&RP) prior to the start of construction and immediately implement the program at the start of construction for LUPs. The monitoring program must be implemented at the appropriate level to protect water quality at all times throughout the life of the project. The M&RP must be a part of the SWPPP, included as an appendix or separate SWPPP chapter.

2. M&RP Implementation Schedule

a. LUP dischargers shall implement the requirements of this Section at the time of commencement of construction activity. LUP dischargers are responsible for implementing these requirements until construction activity is complete and the site is stabilized.

b. LUP dischargers shall revise the M&RP when:

i Site conditions or construction activities change such that a change in monitoring is required to comply with the requirements and intent of this General Permit.

ii The Regional Water Board requires the discharger to revise its M&RP based on its review of the document. Revisions may include, but not be limited to, conducting additional site inspections, submitting reports, and certifications. Revisions shall be submitted via postal mail or electronic e-mail.

iii The Regional Water Board may require additional monitoring and reporting program requirements including sampling and analysis of discharges to CWA § 303(d)-listed water bodies. Additional requirements imposed by the Regional Water Board shall be consistent with the overall monitoring effort in the receiving waters.

3. LUP Type 1 Monitoring and Reporting Requirements

a. LUP Type 1 Inspection Requirements

i LUP Type 1 dischargers shall ensure that all inspections are conducted by trained personnel. The name(s) and contact number(s) of the assigned inspection personnel should be listed in the SWPPP.

ii LUP Type 1 dischargers shall ensure that all visual inspections are conducted daily during working hours and in conjunction with other daily activities in areas where active construction is occurring.

iii LUP Type 1 dischargers shall ensure that photographs of the site taken before, during, and after storm events are taken during inspections, and submitted through the State Water Board's SMARTS website once every three rain events.

iv LUP Type 1 dischargers shall conduct daily visual inspections to verify that:

(1) Appropriate BMPs for storm water and non-storm water are being implemented in areas where active construction is occurring (including staging areas);

(2) Project excavations are closed, with properly protected spoils, and that road surfaces are cleaned of excavated material and construction materials such as chemicals by either removing or storing the material in protective storage containers at the end of every construction day;

(3) Land areas disturbed during construction are returned to pre-construction conditions or an equivalent protection is used at the end of each workday to eliminate or minimize erosion and the possible discharge of sediment or other pollutants during a rain event.

v Inspections may be discontinued in non-active construction areas where soil-disturbing activities are completed and final soil stabilization is achieved (e.g., paving is completed, substructures

are installed, vegetation meets minimum cover requirements for final stabilization, or other stabilization requirements are met).

vi Inspection programs are required for LUP Type 1 projects where temporary and permanent stabilization BMPs are installed and are to be monitored after active construction is completed. Inspection activities shall continue until adequate permanent stabilization is established and, in areas where re-vegetation is chosen, until minimum vegetative coverage is established in accordance with Section C.1 of this Attachment.

b. LUP Type 1 Monitoring Requirements for Non-Visible Pollutants

LUP Type 1 dischargers shall implement sampling and analysis requirements to monitor non-visible pollutants associated with (1) construction sites; (2) activities producing pollutants that are not visually detectable in storm water discharges; and (3) activities which could cause or contribute to an exceedance of water quality objectives in the receiving waters.

i Sampling and analysis for non-visible pollutants is only required where the LUP Type 1 discharger believes pollutants associated with construction activities have the potential to be discharged with storm water runoff due to a spill or in the event there was a breach, malfunction, failure and/or leak of any BMP. Also, failure to implement BMPs may require sample collection.

(1) Visual observations made during the monitoring program described above will help the LUP Type 1 discharger determine when to collect samples.

(2) The LUP Type 1 discharger is not required to sample if one of the conditions described above (e.g., breach or spill) occurs and the site is cleaned of material and pollutants and/or BMPs are implemented prior to the next storm event.

ii LUP Type 1 dischargers shall collect samples down-gradient from all discharge locations where the visual observations were made triggering the monitoring, and which can be safely accessed. For sites where sampling and analysis is required, personnel trained in water quality sampling procedures shall collect storm water samples.

iii If sampling for non-visible pollutant parameters is required, LUP Type 1 dischargers shall ensure that samples be analyzed for parameters indicating the presence of pollutants identified in the pollutant source assessment required in Section J.2.a.i.

iv LUP Type 1 dischargers shall collect samples during the first two hours of discharge from rain events that occur during business hours and which generate runoff.

v LUP Type 1 dischargers shall ensure that a sufficiently large sample of storm water that has not come into contact with the disturbed soil or the materials stored or used on-site (uncontaminated sample[12]) will be collected for comparison with the discharge sample. Samples shall be collected during the first two hours of discharge from rain events that occur during daylight hours and which generate runoff.

vi LUP Type 1 dischargers shall compare the uncontaminated sample to the samples of discharge using field analysis or through laboratory analysis. Analyses may include, but are not limited to, indicator parameters such as: pH, specific conductance, dissolved oxygen, conductivity, salinity, and Total Dissolved Solids (TDS).

vii For laboratory analyses, all sampling, sample preservation, and other analyses must be conducted according to test procedures pursuant to 40 C.F.R. Part 136. LUP Type 1 dischargers shall ensure that field samples are collected and analyzed according to manufacturer specifications of the sampling devices employed. Portable meters shall be calibrated according to manufacturer's specification.

viii LUP Type 1 dischargers shall ensure that all field and/or analytical data are kept in the SWPPP document.

c. <u>LUP Type 1 Visual Observation Exceptions</u>

i LUP Type 1 dischargers shall be prepared to collect samples and conduct visual observation (inspections) to meet the minimum visual observation requirements of this Attachment. The Type 1 LUP discharger is not required to physically collect samples or conduct visual observation (inspections) under the following conditions:

(1) During dangerous weather conditions such as flooding and electrical storms;

(2) Outside of scheduled site business hours.

(3) When access to the site is unsafe due to storm events.

[12] Sample collected at a location unaffected by contruction activities.

ii If the LUP Type 1 discharger does not collect the required samples or visual observation (inspections) due to these exceptions, an explanation why the sampling or visual observation (inspections) were not conducted shall be included in both the SWPPP and the Annual Report.

d. Particle Size Analysis for Risk Justification

LUP Type 1 dischargers utilizing justifying an alternative project risk shall report a soil particle size analysis used to determine the RUSLE K-Factor. ASTM D-422 (Standard Test Method for Particle-Size Analysis of Soils), as revised, shall be used to determine the percentages of sand, very fine sand, silt, and clay on the site.

4. LUP Type 2 & 3 Monitoring and Reporting Requirements

a. LUP Type 2 & 3 Inspection Requirements

i LUP Type 2 & 3 dischargers shall ensure that all inspections are conducted by trained personnel. The name(s) and contact number(s) of the assigned inspection personnel should be listed in the SWPPP.

ii LUP Type 2 & 3 dischargers shall ensure that all visual inspections are conducted daily during working hours and in conjunction with other daily activities in areas where active construction is occurring.

iii LUP Type 2 & 3 dischargers shall ensure that photographs of the site taken before, during, and after storm events are taken during inspections, and submitted through the State Water Board's SMARTS website once every three rain events.

iv LUP Type 2 & 3 dischargers shall conduct daily visual inspections to verify that appropriate BMPs for storm water and non-storm water are being implemented and in place in areas where active construction is occurring (including staging areas).

v LUP Type 2 & 3 dischargers shall conduct inspections of the construction site prior to anticipated storm events, during extended storm events, and after actual storm events to identify areas contributing to a discharge of storm water associated with construction activity. Pre-storm inspections are to ensure that BMPs are properly installed and maintained; post-storm inspections are to assure that BMPs have functioned adequately. During

extended storm events, inspections shall be required during normal working hours for each 24-hour period.

vi Inspections may be discontinued in non-active construction areas where soil-disturbing activities are completed and final soil stabilization is achieved (e.g., paving is completed, substructures are installed, vegetation meets minimum cover requirements for final stabilization, or other stabilization requirements are met).

vii LUP Type 2 & 3 dischargers shall implement a monitoring program for inspecting projects that require temporary and permanent stabilization BMPs after active construction is complete. Inspections shall ensure that the BMPs are adequate and maintained. Inspection activities shall continue until adequate permanent stabilization is established and, in vegetated areas, until minimum vegetative coverage is established in accordance with Section C.1 of this Attachment.

viii If possible, LUP Type 2 & 3 dischargers shall install a rain gauge on-site at an accessible and secure location with readings made during all storm event inspections. When readings are unavailable, data from the closest rain gauge with publically available data may be used.

ix LUP Type 2 & 3 dischargers shall Include and maintain a log of the inspections conducted in the SWPPP. The log will provide the date and time of the inspection and who conducted the inspection.

b. LUP Type 2 & 3 Storm Water Effluent Monitoring Requirements

Table 4. LUP Type 2 & 3 Effluent Monitoring Requirements

LUP Type	Frequency	Effluent Monitoring
2	Minimum of 3 samples per day characterizing discharges associated with construction activity from the project active areas of construction.	Turbidity, pH, and non-visible pollutant parameters (if applicable)
3	Minimum of 3 samples per day characterizing discharges associated with construction activity from the project active areas of construction.	turbidity, pH, and non-visible pollutant parameters (if applicable)

i LUP Type 2 & 3 dischargers shall collect storm water grab samples from sampling locations characterizing discharges associated with activity from the LUP active areas of construction. At a minimum, 3 samples shall be collected per day of discharge.

ii LUP Type 2 & 3 dischargers shall collect samples of stored or contained storm water that is discharged subsequent to a storm event producing precipitation of ½ inch or more at the time of discharge.

iii LUP Type 2 & 3 dischargers shall ensure that storm water grab sample(s) obtained be representative of the flow and characteristics of the discharge.

iv LUP Type 2 & 3 dischargers shall analyze their effluent samples for:

(1) pH and turbidity
(2) Any additional parameter for which monitoring is required by the Regional Water Board.

c. LUP Type 2 & 3 Storm Water Effluent Sampling Locations

i LUP Type 2 & 3 dischargers shall perform sampling and analysis of storm water discharges to characterize discharges associated with construction activity from the entire disturbed project or area.

ii LUP Type 2 & 3 dischargers may monitor and report run-on from surrounding areas if there is reason to believe run-on may contribute to exceedance of NALs.

iii LUP Type 2 & 3 dischargers shall select analytical test methods from the list provided in Table 5 below.

iv LUP Type 2 & 3 dischargers shall ensure that all storm water sample collection preservation and handling shall be conducted in accordance with the “Storm Water Sample Collection and Handling Instructions” below.

d. LUP Type 3 Receiving Water Monitoring Requirements

i In the event that an LUP Type 3 discharger’s effluent exceeds the receiving water monitoring triggers of 500 NTU turbidity or pH range of 6.0-9.0, contained in this General Permit and has a direct discharge to receiving waters, the LUP discharger shall subsequently sample Receiving Waters (RWs) for turbidity, pH (if applicable) and SSC for the duration of coverage under this General Permit. In the event that an LUP Tupe 3 discharger utilizing ATS with direct discharges into receiving waters discharges effluent that exceeds the NELs in this permit, the discharger shall

subsequently sample RWs for turbidity, pH (if applicable), and SSC for the duration of coverage under this General Permit.

ii LUP Type 3 dischargers that meet the project criteria in Appendix 3 of this General Permit and have more than 30 acres of soil disturbance in the project area or project section area designated as Type 3, shall comply with the Bioassessment requirements prior to commencement of construction activity.

iii LUP Type 3 dischargers shall obtain RW samples in accordance with the requirements of the Receiving Water Sampling Locations section (Section M.4.c. of this Attachment).

e. LUP Type 3 Receiving Water Sampling Locations

i **Upstream/up-gradient RW samples**: LUP Type 3 dischargers shall obtain any required upstream/up-gradient receiving water samples from a representative and accessible location as close as possible to and upstream from the effluent discharge point.

ii **Downstream/down-gradient RW samples**: LUP Type 3 dischargers shall obtain any required downstream/down-gradient receiving water samples from a representative and accessible location as close as possible to and downstream from the effluent discharge point.

iii If two or more discharge locations discharge to the same receiving water, LUP Type 3 dischargers may sample the receiving water at a single upstream and downstream location.

f. LUP Type 2 & 3 Monitoring Requirements for Non-Visible Pollutants

LUP Type 2 & 3 dischargers shall implement sampling and analysis requirements to monitor non-visible pollutants associated with (1) construction sites; (2) activities producing pollutants that are not visually detectable in storm water discharges; and (3) activities which could cause or contribute to an exceedance of water quality objectives in the receiving waters.

i Sampling and analysis for non-visible pollutants is only required where LUP Type 2 & 3 dischargers believe pollutants associated with construction activities have the potential to be discharged with storm water runoff due to a spill or in the event there was a breach, malfunction, failure and/or leak of any BMP. Also, failure to implement BMPs may require sample collection.

(1) Visual observations made during the monitoring program described above will help LUP Type 2 & 3 dischargers determine when to collect samples.

(2) LUP Type 2 & 3 dischargers are not required to sample if one of the conditions described above (e.g., breach or spill) occurs and the site is cleaned of material and pollutants and/or BMPs are implemented prior to the next storm event.

ii LUP Type 2 & 3 dischargers shall collect samples down-gradient from the discharge locations where the visual observations were made triggering the monitoring and which can be safely accessed. For sites where sampling and analysis is required, personnel trained in water quality sampling procedures shall collect storm water samples.

iii If sampling for non-visible pollutant parameters is required, LUP Type 2 & 3 dischargers shall ensure that samples be analyzed for parameters indicating the presence of pollutants identified in the pollutant source assessment required in Section J.2.a.i.

iv LUP Type 2 & 3 dischargers shall collect samples during the first two hours of discharge from rain events that occur during business hours and which generate runoff.

v LUP Type 2 & 3 dischargers shall ensure that a sufficiently large sample of storm water that has not come into contact with the disturbed soil or the materials stored or used on-site (uncontaminated sample[13]) will be collected for comparison with the discharge sample. Samples shall be collected during the first two hours of discharge from rain events that occur during daylight hours and which generate runoff.

vi LUP Type 2 & 3 dischargers shall compare the uncontaminated sample to the samples of discharge using field analysis or through laboratory analysis. Analyses may include, but are not limited to, indicator parameters such as: pH, specific conductance, dissolved oxygen, conductivity, salinity, and Total Dissolved Solids (TDS).

vii For laboratory analyses, all sampling, sample preservation, and other analyses must be conducted according to test procedures pursuant to 40 C.F.R. Part 136. LUP Type 2 & 3 dischargers shall ensure that field samples are collected and analyzed according to manufacturer specifications of the sampling devices employed.

[13] Sample collected at a location unaffected by construction activities

Portable meters shall be calibrated according to manufacturer's specification.

viii LUP Type 2 & 3 dischargers shall ensure that all field and/or analytical data are kept in the SWPPP document.

g. LUP Type 2 & 3 Visual Observation and Sample Collection Exceptions

i LUP Type 2 & 3 dischargers shall be prepared to collect samples and conduct visual observation (inspections) to meet the minimum visual observation requirements of this Attachment. Type 2 & 3 LUP dischargers are not required to physically collect samples or conduct visual observation (inspections) under the following conditions:

(1) During dangerous weather conditions such as flooding and electrical storms;

(2) Outside of scheduled site business hours.

(3) When access to the site is unsafe due to storm events.

ii If the LUP Type 2 or 3 discharger does not collect the required samples or visual observation (inspections) due to these exceptions, an explanation why the sampling or visual observation (inspections) were not conducted shall be included in both the SWPPP and the Annual Report.

h. LUP Type 2 & 3 Storm Water Sample Collection and Handling Instructions

LUP Type 2 & 3 dischargers shall refer to Table 5 below for test Methods, detection Limits, and reporting Units. During storm water sample collection and handling, the LUP Type 2 & 3 discharger shall:

i Identify the parameters required for testing and the number of storm water discharge points that will be sampled. Request the laboratory to provide the appropriate number of sample containers, types of containers, sample container labels, blank chain of custody forms, and sample preservation instructions.

ii Determine how to ship the samples to the laboratory. The testing laboratory should receive samples within 48 hours of the physical sampling (unless otherwise required by the laboratory). The options are to either deliver the samples to the laboratory, arrange to have the laboratory pick them up, or ship them overnight to the laboratory.

iii Use only the sample containers provided by the laboratory to collect and store samples. Use of any other type of containers could contaminate your samples.

iv Prevent sample contamination, by not touching, or putting anything into the sample containers before collecting storm water samples.

v Not overfilling sample containers. Overfilling can change the analytical results.

vi Tightly screw the cap of each sample container without stripping the threads of the cap.

vii Complete and attach a label to each sample container. The label shall identify the date and time of sample collection, the person taking the sample, and the sample collection location or discharge point. The label should also identify any sample containers that have been preserved.

viii Carefully pack sample containers into an ice chest or refrigerator to prevent breakage and maintain temperature during shipment. Remember to place frozen ice packs into the shipping container. Samples should be kept as close to 4° C (39° F) as possible until arriving at the laboratory. Do not freeze samples.

ix Complete a Chain of Custody form for each set of samples. The Chain of Custody form shall include the discharger's name, address, and phone number, identification of each sample container and sample collection point, person collecting the samples, the date and time each sample container was filled, and the analysis that is required for each sample container.

x Upon shipping/delivering the sample containers, obtain both the signatures of the persons relinquishing and receiving the sample containers.

xi Designate and train personnel to collect, maintain, and ship samples in accordance with the above sample protocols and good laboratory practices.

xii Refer to the Surface Water Ambient Monitoring Program's (SWAMP) 2008 Quality Assurance Program Plan (QAPrP) for more

information on sampling collection and analysis. See http://www.waterboards.ca.gov/water_issues/programs/swamp/[14]

Table 5. Test Methods, Detection Limits, Reporting Units and Applicable NALs

Parameter	Test Method	Discharge Type	Min. Detection Limit	Reporting Units	Numeric Action Levels	(LUP Type 3) Receiving Water Monitoring Trigger
pH	Field test with calibrated portable instrument	Type 2 & 3	0.2	pH units	Lower = 6.5 upper = 8.5	Lower = 6.0 upper = 9.0
Turbidity	EPA 0180.1 and/or field test with calibrated portable instrument	Type 2 & 3	1	NTU	250 NTU	500 NTU
SSC	ASTM Method D 3977-97[15]	Type 3 if Receiving Water Monitoring Trigger is exceeded	5	Mg/L	N/A	N/A
Bioassessment	(STE) Level I of (SAFIT),[16] fixed-count of 600 org/sample	Type 3 LUPs > 30 acres	N/A	N/A	N/A	N/A

i. LUP Type 2 & 3 Monitoring Methods

i The LUP Type 2 or 3 discharger's project M&RP shall include a description of the following items:

(1) Visual observation locations, visual observation procedures, and visual observation follow-up and tracking procedures.

[14] Additional information regarding SWAMP's QAPrP can be found at: http://www.waterboards.ca.gov/water_issues/programs/swamp/.

[15] ASTM, 1999, Standard Test Method for Determining Sediment Concentration in Water Samples: American Society of Testing and Materials, D 3977-97, Vol. 11.02, pp. 389-394

[16] The current SAFIT STEs (28 November 2006) list requirements for both the Level I and Level II taxonomic effort, and are located at: http://www.swrcb.ca.gov/swamp/docs/safit/ste_list.pdf. When new editions are published by SAFIT, they will supersede all previous editions. All editions will be posted at the State Water Board's SWAMP website.

(2) Sampling locations, and sample collection and handling procedures. This shall include detailed procedures for sample collection, storage, preservation, and shipping to the testing lab to assure that consistent quality control and quality assurance is maintained. Dischargers shall attach to the monitoring program a copy of the Chain of Custody form used when handling and shipping samples.

(3) Identification of the analytical methods and related method detection limits (if applicable) for each parameter required in Section M.4.f above.

ii LUP Type 2 & 3 dischargers shall ensure that all sampling and sample preservation be in accordance with the current edition of "Standard Methods for the Examination of Water and Wastewater" (American Public Health Association). All monitoring instruments and equipment (including a discharger's own field instruments for measuring pH and turbidity) shall be calibrated and maintained in accordance with manufacturers' specifications to ensure accurate measurements. All laboratory analyses shall be conducted according to test procedures under 40 CFR Part 136, unless other test procedures have been specified in this General Permit or by the Regional Water Board. With the exception of field analysis conducted by the discharger for turbidity and pH, all analyses shall be sent to and conducted at a laboratory certified for such analyses by the State Department of Health Services (SSC exception). The LUP discharger shall conduct its own field analysis of pH and may conduct its own field analysis of turbidity if the discharger has sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform the field analysis.

j. LUP Type 2 & 3 Analytical Methods

LUP Type 2 & 3 dischargers shall refer to Table 5 above for test Methods, detection Limits, and reporting Units.

i **pH**: LUP Type 2 & 3 dischargers shall perform pH analysis on-site with a calibrated pH meter or pH test kit. The LUP discharger shall record pH monitoring results on paper and retain these records in accordance with Section M.4.o, below.

ii **Turbidity**: LUP Type 2 & 3 dischargers shall perform turbidity analysis using a calibrated turbidity meter (turbidimeter), either on-site or at an accredited lab. Acceptable test methods include Standard Method 2130 or USEPA Method 180.1. The results shall

be recorded in the site log book in Nephelometric Turbidity Units (NTU).

iii **Suspended sediment concentration (SSC)**: LUP Type 3 dischargers exceeding the turbidity Receiving Water Monitoring Trigger, shall perform SSC analysis using ASTM Method D3977-97.

iv **Bioassessment**: LUP Type 3 dischargers shall perform bioassessment sampling and analysis according to Appendix 3 of this General Permit.

k. Watershed Monitoring Option

If an LUP Type 2 or 3 discharger is part of a qualified regional watershed-based monitoring program the LUP Type 2 or 3 discharger may be eligible for relief from the monitoring requirements in this Attachment. The Regional Water Board may approve proposals to substitute an acceptable watershed-based monitoring program if it determines that the watershed-based monitoring program will provide information to determine each discharger's compliance with the requirements of this General Permit.

l. Particle Size Analysis for Risk Justification

LUP Type 2 & 3 dischargers justifying an alternative project risk shall report a soil particle size analysis used to determine the RUSLE K-Factor. ASTM D-422 (Standard Test Method for Particle-Size Analysis of Soils), as revised, shall be used to determine the percentages of sand, very fine sand, silt, and clay on the site.

m. NAL Exceedance Report

i In the event that any effluent sample exceeds an applicable NAL, the Regional Water Boards may require LUP Type 2 & 3 dischargers to submit NAL Exceedance Reports.

ii LUP Type 2 & 3 dischargers shall certify each NAL Exceedance Report in accordance with the Special Provisions for Construction Activity.

iii LUP Type 2 & 3 dischargers shall retain an electronic or paper copy of each NAL Exceedance Report for a minimum of three years after the date the exceedance report is filed.

iv LUP Type 2 & 3 dischargers shall include in the NAL Exceedance Report:

(1) the analytical method(s), method reporting unit(s), and method detection limit(s) of each analytical parameter (analytical results that are less than the method detection limit shall be reported as "less than the method detection limit"); and
(2) the date, place, time of sampling, visual observation (inspections), and/or measurements, including precipitation.
(3) Description of the current BMPs associated with the effluent sample that exceeded the NAL and the proposed corrective actions taken.

n. Monitoring Records

LUP Type 2 & 3 dischargers shall ensure that records of all storm water monitoring information and copies of all reports (including Annual Reports) required by this General Permit be retained for a period of at least three years. LUP Type 2 & 3 dischargers may retain records off-site and make them available upon request. These records shall include:

i The date, place, time of facility inspections, sampling, visual observation (inspections), and/or measurements, including precipitation (rain gauge);

ii The individual(s) who performed the facility inspections, sampling, visual observation (inspections), and or measurements;

iii The date and approximate time of analyses;

iv The individual(s) who performed the analyses;

v A summary of all analytical results from the last three years, the method detection limits and reporting units, the analytical techniques or methods used, and all chain of custody forms;

vi Quality assurance/quality control records and results;

vii Non-storm water discharge inspections and visual observation (inspections) and storm water discharge visual observation records (see Section M.4.a above);

viii Visual observation and sample collection exception records (see Section M.4.g above); and

ix The records of any corrective actions and follow-up activities that resulted from analytical results, visual observation (inspections), or inspections.

APPENDIX F CONSTRUCTION SITE MONITORING PROGRAM (CSMP)

Construction Site Monitoring Program (CSMP)

For

Transmission Mains Monterey Peninsula Water Supply Project (TMMPWSP)

Transfer Pipeline

WDID#_____

1.0 GENERAL REQUIREMENTS FOR LUP TYPE 1 PROJECT

The General Construction NPDES Permit Order No. 2009-009-DWQ, (Attachment A AND A.1); Section I.1.a) requires that a written site specific Construction Site Monitoring Program (CSMP) be developed by each discharger prior to the commencement of construction activities, and or revise the existing monitoring program to meet the new General Permit requirements.

LUP Type 1 dischargers shall comply with the effluent standards listed below:

a. Storm water discharges and authorized non-storm water discharges regulated by this General Permit shall not contain a hazardous substance equal to or in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4, unless a separate NPDES Permit has been issued to regulate those discharges.
b. Dischargers shall minimize or prevent pollutants in storm water discharges and authorized non-storm water discharges through the use of appropriate controls, structures, and best management practices that achieve BAT for toxic and non-conventional pollutants and BCT for conventional pollutants. Section 2.0 describes when inspections are required to be conducted.
c. <u>Numeric Effluent Standards</u>
    - LUP Type 1 projects are not subject to a numeric effluent standard.
d. All groundwater dewatering activities will comply with all parameters set forth by the approved Groundwater Dewatering Control and Disposal Plan (see separate document).

<u>Purpose</u>

The Construction Site Monitoring Program (CSMP) was developed and implemented to address the following objectives:

- To demonstrate that the site is in compliance with the Discharge Prohibitions per the CGP and local municipal requirements.
- To determine whether non-visible pollutants are present at the construction site and are causing or contributing to exceedances of water quality objectives.
- To determine whether immediate corrective actions, additional BMP implementation, or SWPPP revisions are necessary to reduce pollutants in storm water discharges and authorized non-storm water discharges.
- To determine whether BMPs included in the SWPPP/REAP are effective in preventing or reducing pollutants in storm water discharges and authorized non-storm water discharges.

The following information describes the Project's Construction Site Monitoring Program (CSMP).

2.0 VISUAL OBSERVATIONS AND INSPECTIONS

LUP Type 1 dischargers will ensure that all inspection, maintenance, repair and sampling activities at the project will be performed or supervised by a Qualified SWPPP Practitioner (QSP) representing the discharger. The QSP may delegate any or all of these activities to an employee trained to do the task(s) appropriately, but shall ensure adequate deployment. The minimum Inspection frequencies for LUP Type 1 segments of the project are the following (Outlined in Attachment A of General Permit):

- LUP Type 1 dischargers will ensure that all inspections are conducted by trained personnel.
- All visual inspections will be conducted daily during working hours and in conjunction with other daily activities in areas where active construction is occurring.
- LUP Type 1 dischargers will ensure that **photographs of the site taken before, during, and after storm events are taken during inspections, and submitted through the State Water Board's SMARTS website once every three rain events.**
- Inspections may be discontinued in non-active construction areas where soil-disturbing activities are completed and final soil stabilization is achieved.

- Inspection programs are required for LUP Type 1 projects where temporary and permanent stabilization BMPs are installed and are to be monitored after active construction is completed until minimum vegetation coverage is established in accordance with Section C.1 of Attachment A of Order No. 2009‐0009‐DWQ.

Under the guidance of the project's Qualified SWPPP Practitioner (QSP) and or trained site personnel by the QSP, LUP Type 1 dischargers shall visually inspect their project site drainage areas (Active, Inactive, and Storage Areas) for the presence of potential pollutants in storm water and non-storm water (authorized or unauthorized) discharges. Per the General Permit requirements all weather forecasts must come from www.noaa.gov.

The frequencies of which the Discharger shall perform the visual inspections are the following:

- Daily Visual Observations for all areas of project (not required to be recorded)
- Once every 24 hours during extent rain events

Recommended Additional Inspection Frequency:

- Prior to predicted rain events (24-48 hours) to assess site conditions to ensure BMPs are in operational condition and exposed materials/areas are addressed.
- Post Storm within 48 hours of a Qualifying Rain Event (QRE) of 0.50 inches or more

All Visual inspections will be conducted during business operation hours. Each inspection will evaluate the site construction activities, condition of drainage areas, implemented BMP conditions, observe runoff and/or non-storm water discharges for the presence of potential pollutants such as floating and suspended material, sheen, discoloration, turbidity, and odor.

A ***Qualifying Rain Event (QRE)*** is defined as an event that produces ½ inch or more of precipitation with 48 hours or greater period between rain events.

The General Permit requires dischargers to begin implementing corrective actions within 72 hours for deficiencies identified during inspections. As indicated in the SWPPP, all amendments should be prepared by the QSD if warranted by the problem encountered and corrective action required. All corrective measures will be implemented during day light hours and safe working conditions. For each required inspection, dischargers shall complete a written or electronic

inspection form using the form located in Appendix G or another equivalent inspection form. The inspection document will include the following information.

- Dates and approximate time each drainage area was observed
- Person conducting inspection
- Summary of the status of construction activities
- Conditions of installed BMPs and locations of potential failures/breaches
- Locations of non-storm water pollution sources and their conditions
- Are the installed BMPs effective in minimizing potential pollutant discharge as described in the SWPPP and if the SWPPP needs to be amended.
- Any corrective actions taken to repair failed BMPs or eliminate potential pollutant discharges and unauthorized non-storm water discharges.

2.3 Monitoring Locations

See Project Site Map(s) for the monitoring locations described below.

- Active Areas
- Inactive Areas
- All storm drain inlets, drainage ditches or conveyance systems and outfall locations
- Areas that receive Run-on from adjacent properties
- Material Storage Yards and other areas where construction materials are stored
- Potential Control and Sample locations

2.4 Visual Observation Exceptions for LUP Type 1 Sites

General Permit outlines exceptions for visual inspections under the following circumstances:

1. During severe and abnormal weather conditions such as flooding and electrical storms
2. Outside of scheduled site business hours

If visual inspections are not conducted due to the above circumstances, the dischargers will include an explanation in their SWPPP and in the Annual Report documenting why the visual inspections were not conducted.

3.0 WATER QUALITY SAMPLING AND ANALYSIS

Per the General Permit requirements, all sites are required to routinely monitor runoff for pollutants, as well as non-visible pollutants. All sampling and sample preservation will be in accordance with the current edition of "Standard Methods for the Examination of Water and Wastewater" (American Public Health Association).

3.1 Non-storm Water Sampling Procedures and Analysis

Dischargers shall visually observe each drainage area for the presence of or indication of prior unauthorized and authorized non-storm water discharges and their sources. Dischargers shall ensure that visual observations document the presence of evidence of any non storm water discharge (authorized or unauthorized), pollutant characteristics (floating and suspended material, sheen, discoloration, turbidity, odor, etc.), and source. On-site records will be maintained indicating the personnel performing the visual observations, the dates and approximate time each drainage area and non-storm water discharge was observed, and response taken to eliminate unauthorized non-storm water discharges and to reduce or prevent pollutants from contacting non-storm water discharges.

Non-Storm Water Sampling:

1. Dischargers shall sample effluent at all discharge points where non-storm water and/or authorized non-storm water is discharged off-site.
2. All non-storm water samples will be sent to an authorized laboratory certified by the State Department of Health Services (not applicable for Turbidity and pH).
3. Run-on will be monitored from surrounding areas if there is reason to believe run-on may contribute to an exceedance of NALs.

3.2 Non-Visible Pollutant Monitoring Requirements

In the event of a BMP failure, breach, spill or it is observed that runoff may be contaminated by non-visible pollutants the runoff should be sampled. Furthermore, a control sample must be taken from an area unaffected by the failure, breach, or spill to serve as the basis for comparison. Samples will be taken during the first two hours of discharge when the discharge occurs in daylight business hours. For laboratory analysis, all sampling, sample preservation, and analysis will be conducted according to test procedures per 40 CFR Part 136 and/or in

accordance with Method 1060 of Standard Methods for the Examination of Water and Waste Water 20th Edition. Pollutant

Field samples will consist of grab samples with appropriate sampling devices obtained from a local certified laboratory, such as clean sample bottles. Appropriate Chain of Custody forms will be used and the records will be kept with the SWPPP. All field/portable meters will be calibrated according to manufacturer specifications prior to sampling.

The QSP and or staff assigned to sampling will be trained to collect samples both for field and laboratory analysis, and to perform field tests. Contractors that perform sampling will be certified for laboratory and field tests. Appropriate actions will be taken to ensure Quality Assurance/Quality Control for all samples taken and that the necessary materials are used, (Personal Protective Equipment, rubber gloves, coolers, appropriate number and volume of sample bottles, identification labels, re-sealable storage bags, paper towels, personal rain gear, ice, Sampling Activity Log forms, and Chain of Custody forms).

The Contractor will obtain and maintain the field-testing instruments for analyzing samples in the field by sampling personnel. The QSP will contact sampling personnel 24 hours prior to a predicted rain event and if one of the triggering conditions is identified during an inspection before, during, or after a storm event. This will ensure that adequate sample collection personnel, supplies, and field test equipment for monitoring non-visible pollutants are available and mobilized to collect samples on the project site in accordance with the sampling schedule.

Below is a summary (trigger events) of when samples should be taken:

- Materials or wastes containing potential non-visible pollutants are not stored under watertight conditions. Watertight conditions are defined as (1) storage in a watertight container, (2) storage under a watertight roof or within a building, or (3) protected by temporary cover and containment that prevents stormwater contact and runoff from the storage area.
- Materials or wastes containing potential non-visible pollutants are stored under watertight conditions, but (1) a breach, malfunction, leakage, or spill is observed, (2) the leak or spill is

not cleaned up prior to the rain event, and (3) there is the potential for discharge of non-visible pollutants to surface waters or a storm sewer system.

- An operational activity, including but not limited to those in Section 600.5.1, with the potential to contribute non-visible pollutants (1) was occurring during or within 24 hours prior to the rain event, (2) applicable BMPs were observed to be breached, malfunctioning, or improperly implemented, and (3) there is the potential for discharge of non-visible pollutants to surface waters or a storm sewer system.
- Soil amendments that have the potential to change the chemical properties, engineering properties, or erosion resistance of the soil have been applied, and there is the potential for discharge of non-visible pollutants to surface waters or a storm sewer system.
- Stormwater runoff from an area contaminated by historical usage of the site has been observed to combine with stormwater runoff from the site, and there is the potential for discharge of non visible pollutants to surface waters or a storm sewer system.

*Samples will only be taken when it is safe to do so and the sampling locations are safely accessible to prevent injury, other health hazards, or death.

See CSMP Attachment 2 for Sample Collection, Handing and Documentation Procedures

3.3 Sample Locations

The following sampling locations will be field determined based on the site conditions and need for sampling.

Non-storm water and Non-visible pollutant samples:

Control Sample(s): **Cx**

Shall be taken from an area that has been unaffected by the potential pollutant discharge. Control Grab sample(s) will be taken from one of the following locations:

1. At a storm drain or existing drainage swale above the breach, failure, or potential discharge location.
2. From an area where runoff flow can be sampled without contaminating the sample above where the breach, failure, or potential discharge has occurred.

Potential Pollutant Sample(s): **Sx**

Shall be taken from an area that receives storm water flow that is below the breach, failure, or potential discharge location. The Potential Pollutant Sample will be taken from one of the following locations.

1. Storm drain inlets or existing drainage swale below the breach, failure or potential discharge location.
2. From an area where runoff flow can be sampled without contaminating the sample below the breach, failure or potential discharge location.
3. At the project outfall if accessible and if it is safe to do so.

All grab samples taken should be conducted using calibrated portable equipment, clean sampling bottles and rubber gloves. If lab analysis is required, the grab sample should be stored in ice and taken to the lab within the appropriate sampling time frame. All Chain of Custody forms shall be filled out appropriately and a record of the results kept on-site.

***If Hazardous Materials are observed or suspected to have contaminated storm water runoff contact the local Fire Department immediately. Samples should only be taken by on-site personnel if it is safe to do so using appropriate Personal Protection Equipment (PPE) to prevent potential health hazards. For significant or hazardous spills that cannot be completely controlled by on-site personnel the procedure will be as follows:

1. Notify the local emergency response agency by dialing 911. Also, notify the Regional Board and other appropriate state and local officials outlined below.

    - The Governor's Office of Emergency Services Warning Center will be notified at (800) 852-7550
    - Notify the National Response Center at (800) 424-8802 regarding spills of Federal reportable quantities under 40 CFR 110, 119, and 302
    - City of Monterey Public Works at (831) 646-3920
    - City of Seaside at (503) 738-5112
    - Pacific Grove at (831) 648-5722
    - Central Coast Regional Water Quality Control Board (Region 3) San Luis Obispo office at (805) 549-3147

- Notification will be first made by telephone and followed with a written report within seven working days or sooner.

2. A spill cleanup contractor will be contacted immediately to address the spill.
3. The Emergency telephone number of the project manager will be posted at the construction office for notification in case of a spill.
4. All implemented corrective actions will be documented and will be part of the formal written report.

3.4 Sampling Lab

The following certified lab will be used for grab samples that will need laboratory analysis.

Laboratory Name: TBD

Street Address:

City, State, Zip:

Number:

4.0 RETENTION OF RECORDS FOR INSPECTIONS AND SAMPLING

Per the General Permit Guidelines, all LUP Type 1 dischargers shall retain records of all storm water monitoring information and copies of all reports for a period of at least three years. LUP Type 1 dischargers shall retain all records on-site while construction is ongoing. These records include:

- The date, place, time of facility inspections, sampling, visual observation (inspections), and/or measurements, including precipitation.
- The individual(s) who performed the facility inspections, sampling, visual observation (inspections), and or measurements.
- The date and approximate time of analyses.
- The individual(s) who performed the analysis.
- A summary of all analytical results from the last three years, the method detection limits and reporting units, and the analytical techniques or methods used.
- Rain gauge readings from site inspections.

- Quality assurance/quality control records and results.
- Non-storm water discharge inspections and visual observations (inspections) and storm water discharge visual observation records
- Visual observation and sample collection exception records
- The records of any corrective actions and follow-up activities that resulted from analytical results, visual observation (inspections), or inspections.

CSMP Attachments

CSMP Attachment 1:	Pollutant Testing Guidance Table
CSMP Attachment 2:	Sample Collection, Handing and Documentation Procedures
CSMP Attachment 3:	Rain Gauge Log
CSMP Attachment 4:	Non Compliance Report Template
CSMP Attachment 5:	Chain of Custody Template

CSMP Attachment 1: Pollutant Testing Guidance Table

Attachment 1

Pollutant Testing Guidance Table

Pollutant Testing Guidance Table [1]

Category	Construction Site Material	Visually Observable?	Pollutant Indicators [2]	Suggested Analyses Field [3]	Laboratory
Asphalt Products (Sections 37, 39, 92, 93, 94, and Special Provisions)	Hot Asphalt	Yes - Rainbow Surface or Brown Suspension	Visually Observable - No Testing Required		
	Asphalt Emulsion				
	Liquid Asphalt (tack coat)				
	Cold Mix				
	Crumb Rubber	Yes – Black, solid material	Visually Observable - No Testing Required		
	Asphalt Concrete (Any Type)	Yes - Rainbow Surface or Brown Suspension	Visually Observable - No Testing Required		
Cleaning Products	Acids	No	**pH** Acidity Anions (acetic acid, phosphoric acid, sulfuric acid, nitric acid, hydrogen chloride)	pH Meter Acidity Test Kit	EPA 150.1 (pH) SM 2310B (Acidity) EPA 300.0 (Anion)
	Bleaches	No	**Residual Chlorine**	Chlorine	SM 4500-CL G (Res. Chlorine)
	Detergents	Yes - Foam	Visually Observable - No Testing Required		
	TSP	No	**Phosphate**	Phosphate	EPA 365.3 (Phosphate)

Pollutant Testing Guidance Table [1]

Category	Construction Site Material	Visually Observable?	Pollutant Indicators [2]	Suggested Analyses Field [3]	Laboratory
	Solvents	No	**VOC**	None	EPA 601/602 or EPA 624 (VOC)
			SVOC	None	EPA 625 (SVOC)
Portland Concrete Cement & Masonry Products (Section 27, 28, 29, 40, 41, 42, 49, 50, 51, 53, 63, 65, 72, 73, 80, 81, 83, 90, and Special Provisions)	Portland Cement (PCC)	Yes - Milky Liquid	Visually Observable - No Testing Required		
	Masonry products	No	**pH**	pH Meter Alkalinity or Acidity Test Kit	EPA 150.1 (pH)
			Alkalinity		SM 2320 (Alkalinity)
	Sealant (Methyl Methacrylate - MMA)	No	**Methyl Methacrylate**	None	EPA 625 (SVOC)
			Cobalt		EPA 200.8 (Metal)
			Zinc		
	Incinerator Bottom Ash Bottom Ash Steel Slag Foundry Sand Fly Ash Municipal Solid Waste	No	**Aluminum** **Calcium** **Vanadium** **Zinc**	Calcium Test	EPA 200.8 (Metal) EPA 200.7 (Calcium)
	Mortar	Yes - Milky Liquid	Visually Observable - No Testing Required		
	Concrete Rinse Water	Yes - Milky Liquid	Visually Observable - No Testing Required		
	Non-Pigmented Curing Compounds	No	Acidity	pH Meter Alkalinity or Acidity Test Kit	SM 2310B (Acidity)
			Alkalinity		SM 2320 (Alkalinity)
			pH		EPA 150.1 (pH)

Pollutant Testing Guidance Table [1]

Category	Construction Site Material	Visually Observable?	Pollutant Indicators [2]	Suggested Analyses Field [3]	Laboratory
			VOC		EPA 601/602 or EPA 624 (VOC)
			SVOC		EPA 625 (SVOC)
Landscaping and Other Products (Section 20, 24, and Special Provisions)	Aluminum Sulfate	No	Aluminum	TDS Meter Sulfate	EPA 200.8 (Metal)
			TDS		EPA 160.1 (TDS)
			Sulfate		EPA 300.0 (Sulfate)
	Sulfur-Elemental	No	**Sulfate**	Sulfate	EPA 300.0 (Sulfate)
	Fertilizers-Inorganic [4]	No	**Nitrate**	Nitrate	EPA 300.0 (Nitrate)
			Phosphate	Phosphate	EPA 365.3 (Phosphate)
			Organic Nitrogen	None	EPA 351.3 (TKN)
			Potassium	None	EPA 200.8 (Metal)
	Fertilizers-Organic	No	TOC	Nitrate	EPA 415.1 (TOC)
			Nitrate		EPA 300.0 (Nitrate)
			Organic Nitrogen		EPA 351.3 (TKN)
			COD		EPA 410.4 (COD)
	Natural Earth (Sand, Gravel, and Topsoil)	Yes - Cloudiness and turbidity	Visually Observable - No Testing Required		
	Herbicide	No	**Herbicide**	None	Check lab for specific herbicide or pesticide
	Pesticide		**Pesticide**		

Pollutant Testing Guidance Table [1]

Category	Construction Site Material	Visually Observable?	Pollutant Indicators [2]	Suggested Analyses Field [3]	Laboratory
	Lime		Alkalinity	pH Meter Alkalinity or Acidity Test Kit	SM 2320 (Alkalinity)
			pH		EPA 150.1 (pH)
Painting Products (Section 12-3.08, 20-2.32, 50-1.05, 59, 91, and Special Provisions)	Paint	Yes	Visually Observable - No Testing Required		
	Paint Strippers	No	**VOC**	None	EPA 601/602 or EPA 624 (VOC)
			SVOC	None	EPA 625 (SVOC)
	Resins	No	**COD**	None	EPA 410.4 (COD)
			SVOC		EPA 625 (SVOC)
	Sealants	No	**COD**	None	EPA 410.4 (COD)
	Solvents	No	**COD**	None	EPA 410.4 (COD)
			VOC		EPA 601/602 or EPA 624 (VOC)
			SVOC		EPA 625 (SVOC)
	Lacquers, Varnish, Enamels, and Turpentine	No	**COD**	None	EPA 410.4 (COD)
			VOC		EPA 601/602 or EPA 624 (VOC)
			SVOC		EPA 625 (SVOC)
	Thinners	No	VOC	None	EPA 601/602 or EPA 624 (VOC)
			COD		EPA 410.4 (COD)

Pollutant Testing Guidance Table [1]

Category	Construction Site Material	Visually Observable?	Pollutant Indicators [2]	Suggested Analyses Field [3]	Laboratory
Portable Toilet Waste Products	Portable Toilet Waste	Yes	Visually Observable - No Testing Required		
Contaminated Soil [5]	Aerially Deposited Lead[3]	No	**Lead**	None	EPA 200.8 (Metal)
	Petroleum	Yes – Rainbow Surface Sheen and Odor	Visually Observable - No Testing Required		
	Mining or Industrial Waste, etc.	No	**Contaminant Specific**	Contaminant Specific – Check with laboratory	Contaminant Specific – Check with laboratory
Line Flushing Products	Chlorinated Water	No	**Total chlorine**	Chlorine	SM 4500-CL G (Res. Chlorine)
Adhesives	Adhesives	No	COD	None	EPA 410.4 (COD)
			Phenols	Phenol	EPA 420.1 (Phenol)
			SVOC	None	EPA 625 (SVOC)
Dust Palliative Products (Section 18)	Salts (Magnesium Chloride, Calcium Chloride, and Natural Brines)	No	Chloride	Chloride	EPA 300.0 (Chloride)
			TDS	TDS Meter	EPA 160.1 (TDS)
			Cations (Sodium, Magnesium, Calcium)	None	EPA 200.7 (Cations)
Vehicle	Antifreeze and Other Vehicle Fluids	Yes - Colored Liquid	Visually Observable - No Testing Required		
	Batteries	No	Sulfuric Acid	None	EPA 300.0 (Sulfate)
			Lead	None	EPA 200.8 (Metal)

Pollutant Testing Guidance Table [1]

Category	Construction Site Material	Visually Observable?	Pollutant Indicators [2]	Suggested Analyses Field [3]	Laboratory
			pH	pH Meter Alkalinity or Acidity Test Kit	EPA 150.1 (pH)
	Fuels, Oils, Lubricants	Yes - Rainbow Surface Sheen and Odor	Visually Observable - No Testing Required		
Soil Amendment/Stabilization Products	Polymer/Copolymer [6, 7]	No	**Organic Nitrogen**	None	EPA 351.3 (TKN)
			BOD	None	EPA 405.1 (BOD)
			COD	None	EPA 410.4 (COD)
			DOC	None	EPA 415.1 (DOC)
			Nitrate	Nitrate	EPA 300.0 (Nitrate)
			Sulfate	Sulfate	EPA 300.0 (Sulfate)
			Nickel	None	EPA 200.8 (Metal)
	Straw/Mulch	Yes - Solids	Visually Observable - No Testing Required		
	Lignin Sulfonate	No	Alkalinity	Alkalinity	SM 2320 (Alkalinity)
			TDS	TDS Meter	EPA 160.1 (TDS)
	Psyllium	No	COD	None	EPA 410.4 (COD)
			TOC		EPA 415.1 (TOC)
	Guar/Plant Gums	No	COD	None	EPA 410.4 (COD)
			TOC		EPA 415.1 (TOC)
			Nickel		EPA 200.8 (Metal)
	Gypsum	No	pH	pH Meter Alkalinity or Acidity Test Kit	EPA 150.1 (pH)
			Calcium	Calcium	EPA 200.7 (Calcium)

Pollutant Testing Guidance Table [1]

Category	Construction Site Material	Visually Observable?	Pollutant Indicators [2]	Suggested Analyses Field [3]	Laboratory
			Sulfate	Sulfate	EPA 300.0 (Sulfate)
			Aluminum	None	EPA 200.8 (Metal)
			Barium		
			Manganese		
			Vanadium		
Treated Wood Products (Section 58, 80-3.01B(2), and Special Provisions)	Ammoniacal-Copper-Zinc-Arsenate (ACZA) Copper-Chromium-Arsenic (CCA) Ammoniacal-Copper-Arsenate (ACA) Copper Naphthenate	No	Arsenic	Total Chromium	EPA 200.8 (Metal)
			Total Chromium		
			Copper		
			Zinc		
	Creosote	Yes - Rainbow Surface or Brown Suspension	Visually Observable - No Testing Required		

Notes:

1. 1 If specific pollutant is known, analyze only for that specific pollutant. See MSDS to verify.
2. For each construction material, test for one of the pollutant indicators. Bolded pollutant indicates lowest analysis cost or best indicator. However, the composition of the specific construction material, if known, is the first criterion for selecting which analysis to use.
3. See www.hach.com, www.lamotte.com, www.ysi.com and www.chemetrics.com for some of the test kits
4. If the type of inorganic fertilizer is unknown, analyze for all pollutant indicators listed.
5. Only if special handling requirements are required in the Standard Special Provisions for aerially deposited lead (ADL)
6. If used with a dye or fiber matrix, it is considered visually observable and no testing is required.

7. Based upon research conducted by Caltrans, the following copolymers/polymers do not discharge pollutants and water quality sampling and analysis is **not** required: Super Tak™, M-Binder™, Fish Stik™, Pro40dc™, Fisch-Bond™, and Soil Master WR™.

Acronyms:

BOD – Biochemical Oxygen Demand
COD – Chemical Oxygen Demand
DOC – Dissolved Organic Carbon
EPA – Environmental Protection Agency
HACH – Worldwide company that provides advanced analytical systems and technical support for water quality testing.
SM – Standard Method
SVOC – Semi-Volatile Organic Compounds
TDS – Total Dissolved Solids
TKN – Total Kjeldahl Nitrogen
TOC – Total Organic Carbon
TSP – Tri-Sodium Phosphate
VOC - Volatile Organic Compounds

References:

Construction Storm Water Sampling and Analysis Guidance Document, California Stormwater Quality Task Force, October 2001.
Environmental Impact of Construction and Repair Materials on Surface and Ground Waters, Report 448, National Cooperative Highway Research Program, 2001
Soil Stabilization for Temporary Slopes, Environmental Programs, California Department of Transportation, October 1, 1999.
Statewide Storm Water Management Plan, Division of Environmental Analysis, California Department of Transportation, April 2002.
Statewide Storm Water Quality Practice Guidelines, Environmental Program, California Department of Transportation, August 2000.
Soil Stabilization for Temporary Slopes and District 7 Erosion Control Pilot Study, June 2000.
Stormwater Monitoring Protocols, Guidance Manual, California Department of Transportation, May 2000.

CSMP Attachment 2: Sample Collection, Handing and Documentation

Sample Collection, Handing and Documentation

All staff and contracted individuals designated to collect, maintain, and ship/deliver samplings will be trained in accordance with the Surface Water Ambient Monitoring program (SWAMP) 2008 Quality Assurance Program Plan (QAPrP). Training records of designated contractor sampling personnel are provided in Appendix K of the SWPPP.

1.0 Sample Collection and Handling

Sample Collection

Samples will be collected at the designated sampling locations shown on the Site Maps/WPCDs and or will be field determined by QSP depending on site conditions on phase and disturbed areas. Samples shall be collected, maintained and shipped in accordance with the SWAMP 2008 Quality Assurance Program Plan (QAPrP).

To maintain sample integrity and prevent cross-contamination, sample collection personnel shall follow the protocols below.

- Collect samples (for laboratory analysis) only in analytical laboratory-provided sample containers;
- Wear clean, powder-free nitrile gloves when collecting samples;
- Change gloves whenever something not known to be clean has been touched;
- Change gloves between sites;
- Decontaminate all equipment (e.g. bucket, tubing) prior to sample collection using a trisodium phosphate water wash, distilled water rinse, and final rinse with distilled water. (Dispose of wash and rinse water appropriately, i.e., do not discharge to storm drain or receiving water). Do not decontaminate laboratory provided sample containers;
- Do not smoke during sampling events;
- Never sample near a running vehicle;
- Do not park vehicles in the immediate sample collection area (even non running vehicles);
- Do not eat or drink during sample collection; and
- Do not breathe, sneeze, or cough in the direction of an open sample container.

The most important aspect of grab sampling is to collect a sample that represents the entire runoff stream. Typically, samples are collected by dipping the collection container in the runoff flow paths and streams as noted below.

- For small streams and flow paths, simply dip the bottle facing upstream until full.
- For larger stream that can be safely accessed, collect a sample in the middle of the flow stream by directly dipping the mouth of the bottle. Once again making sure that the opening of the bottle is facing upstream as to avoid any contamination by the sampler.
- For larger streams that cannot be safely waded, pole samplers may be needed to safely access the representative flow.

- Avoid collecting samples from ponded, sluggish or stagnant water.
- Avoid collecting samples directly downstream from a bridge as the samples can be affected by the bridge structure or runoff from the road surface.

Note, that depending upon the specific analytical test, some containers may contain preservatives. These containers should never be dipped into the stream, but filled indirectly from the collection container.

Sample Handling

Turbidity and pH measurements must be conducted immediately. Do not store turbidity or pH samples for later measurement (if feasible).

Samples for laboratory analysis must be handled as follows. Immediately following sample collection:

- Cap sample containers;
- Complete sample container labels;
- Sealed containers in a re sealable storage bag;
- Place sample containers into an ice chilled cooler;
- Document sample information on the Effluent Sampling Field Log Sheet; and
- Complete the CoC.

All samples for laboratory analysis must be maintained between 0-6 degrees Celsius during delivery to the laboratory. Samples must be kept on ice, or refrigerated, from sample collection through delivery to the laboratory. Place samples to be shipped inside coolers with ice. Make sure the sample bottles are well packaged to prevent breakage and secure cooler lids with packaging tape.

Ship samples that will be laboratory analyzed to the analytical laboratory right away. Hold times are measured from the time the sample is collected to the time the sample is analyzed. The General Permit requires that samples be received by the analytical laboratory within 48 hours of the physical sampling (unless required sooner by the analytical laboratory).

Sample Documentation Procedures

NAL Grab Samples:

All grab sample readings for NAL samples will be recorded using the NAL grab sample log and or equivalent form. These documents will be stored on-site with the SWPPP.

SMARTs Data Upload:

Sampling results for NAL grab samples, (Turbidity and pH) will be submitted to the designated staff for upload on a monthly basis, as well as needed.

Laboratory Grab Samples:

All original data documented on sample bottle identification labels, Effluent Sampling Field Log Sheet, and CoCs shall be recorded using waterproof ink (if available). These shall be considered accountable documents. If an error is made on an accountable document, the individual shall make corrections by lining through the error and entering the correct information. The erroneous information shall not be obliterated. All corrections shall be initialed and dated.

Duplicate samples shall be identified consistent with the numbering system for other samples to prevent the laboratory from identifying duplicate samples. Duplicate samples shall be identified in the Effluent Sampling Field Log Sheet.

Sample documentation procedures include the following:

Sample Bottle Identification Labels:

Sampling personnel shall attach an identification label to each sample bottle. Sample identification shall uniquely identify each sample location.

Field Log Sheets:

Sampling personnel shall complete the Effluent Sampling Field Log Sheet and Receiving Water Sampling Field Log Sheet for each sampling event, as appropriate.

Chain of Custody:

Sampling personnel shall complete the CoC for each sampling event for which samples are collected for laboratory analysis. The sampler will sign the CoC when the sample(s) is turned over to the testing laboratory or courier.

CSMP Attachment 3: Rain Gauge Log

Rain Gauge Log Sheet				
Project:				
WDID #:				
Date (mm/dd/yy)	Time (24-hr)	Initials	Rainfall Depth (Inches)	Notes:

CSMP Attachment 4: Non Compliance Report Template

Non Compliance Summary Report	Page __ of __
Project Name	
Project WDID	
Project Location	
Date of Exceedance	
Describe Non Compliance Noted	☐ **Unauthorized Non Storm Water Discharge** ☐ **Other (specify):**
Measurement or Analytical Method	☐ **Field meter** **(Sensitivity: _____)** ☐ **Lab method (specify) _____** **(Reporting Limit: _____)** **(MDL: _____)**
Rain Gauge Measurement	**_____ inches**
Compliance Storm Event	**_____ inches (5-year, 24-hour event)**
Visual Observations on Day of Non Compliance	

Non Compliance Summary Report	Page __ of __
Description of BMPs in Place at Time of Event	
Initial Assessment of Cause	
Corrective Actions Taken (deployed after exceedance)	
Additional Corrective Actions Proposed	
Report Completed By	_____ **(Print Name, Title)**
Signature	_____

Attached Photos to Report:

CSMP Attachment 5: Chain of Custody Template

CHAIN-OF-CUSTODY **DATE:** **Lab ID:**

DESTINATION LAB: ATTN: **ADDRESS:** **Office Phone:** **Cell Phone:**							REQUESTED ANALYSIS				Notes:
SAMPLED BY:											
Contact:											
Project Name											
Client Sample ID	**Sample Date**	**Sample Time**	**Sample Matrix**	**Container #**	**Container Type**	**Container Pres.**					

SENDER COMMENTS:	**RELINQUISHED BY**	
	Signature:	
	Print:	
	Company:	
	Date:	TIME:
LABORATORY COMMENTS:	**RECEIVED BY**	
	Signature:	
	Print:	
	Company:	
	Date:	TIME:

APPENDIX G STORM WATER INSPECTION REPORT FORM

KAZ ASSOCIATES
ENVIRONMENTAL SERVICES

STORMWATER INSPECTION

PROJECT: _____ WDID#: _____ RISK LEVEL: _____

Date/Time: _____ Inspector: _____

Type of Inspection: ___ Weekly ___Pre-Storm ___ Extended Rain ___ Post-Storm

Weather Conditions: _____ Rain Totals: _____

Days Since Last Storm: _____ Sampling Performed (Level 2 or 3): __Yes __No

BMP CHECK LIST

Erosion and Sediment Controls:

1. Are active/inactive areas stabilized with erosion controls? ___Yes ___No ___NA
2. Is maintenance needed based on observed conditions? ___Yes ___No ___NA
3. Is dust control being implemented during dry conditions? ___Yes ___No ___NA
4. Perimeter controls are in place at site limits and maintained? ___Yes ___No ___NA
5. Are sediment controls installed for active/inactive areas? ___Yes ___No ___NA
6. Are storm drain inlets protected without maintenance needed? ___Yes ___No ___NA
7. Tracking controls are in place and effective? ___Yes ___No ___NA
8. Streets are free of dirt and debris? ___Yes ___No ___NA
9. Run-on diverted away from active or stabilized areas? ___Yes ___No ___NA

Good Site Management and Housekeeping:

1. Storage areas are clean/organized with materials stored under cover? __Yes __No __NA
2. Material/Dirt stockpiles are covered prior to rain or when inactive? __Yes __No __NA
3. Waste water washouts available, lined with capacity available? __Yes __No __NA
4. Are washouts covered or emptied prior to rain? __Yes __No __NA
5. Washout of concrete or other wastes observed on ground or pavement? __Yes __No __NA
6. Is trash disposed of in designated bins with covers installed during rain? __Yes __No __NA
7. Portable toilets stored a minimum of 25’ away from inlets and secured? __Yes __No __NA
8. Are non-stormwater discharges properly controlled and monitored? __Yes __No __NA
9. Landscaping activities ceased with BMPs deployed prior to rain? __Yes __No __NA

General Comments and Corrective Actions Taken:

_____

_____

_____

APPENDIX H POTENTIAL POLLUTANT SOURCE LIST

KAZ & ASSOCIATES
ENVIRONMENTAL SERVICES

LIST OF POTENTIAL CONSTRUCTION POLLUTANTS

CATEGORY	PRODUCT	POLLUTANTS
Adhesives	Adhesives, Glues	Phenolics, Formaldehydes
	Resins, Epoxy Synthetics	Phenolics, Formaldehydes
	Calks, Sealers, Putty, Sealing Agents	Asbestos, Phenolics, Formaldehydes
	Coal Tars (Naphtha, Pitch)	Benzene, Phenols, Naphthalene
Cleaners	Polishers (Metal, Ceramic, Tile)	Metals
	Etching Agents	Metals
	Cleaners, Ammonia, Lye, Caustic Sodas	Acidity/Alkalinity
	Bleaching Agents	Acidity/Alkalinity
	Chromate salts	Chromium
Plumbing	Solder (Lead, Tin), Flux (Zinc, Chloride)	Lead, Copper, Zinc, Tin
	Pipe Fitting (Cut Shavings)	Copper
	Galvanized Metals (Nails, Fences)	Zinc
	Electric Wiring	Copper, Lead
Painting	Paint Thinner, Acetone, MEK, Stripper	VOC's
	Paints, Lacquers, Varnish, Enamels	Metals, Phenolics, Mineral Spirits
	Turpentine, Gum Spirit, Solvents	VOC's
	Sanding, Stripping	Metals
	Paints (Pigments) Dyes	Metals
Wood	Sawdust	BOD
	Particle Board Dust	Formaldehyde
	Treated Woods	Copper, Creosol
Masonry & Concrete	Dust (Brick, Cement)	Acidity, Sediments
	Colored Chalks (Pigments)	Metals
	Concrete Cutting Compounds	
	Glazing Compounds	Asbestos
	Cleaning Surfaces	Acidity
Floors & Walls	Flashing	Copper, Aluminum
	Drywall	Dusts
	Tile cutting (Ceramic Dusts)	Minerals
	Adhesives (see above)	
Remodeling & Demolition	Insulation	Asbestos
	Venting Systems	Aluminum, Zinc
	Dusts (Brick, Cement, Drywall)	
Air Conditioning & Heating	Insulating	Asbestos
	Coolant Reservoirs	Freon
	Adhesives (see above)	

538 Stone Road, Suite I ,Benicia, CA, 94510
Phone: (707) 747-1126 Fax: (925) 871-5172

CATEGORY	PRODUCT	POLLUTANTS
Yard O&M	Vehicle and Machinery Maintenances Gasoline, Oils, Additives Marking Paints (Sprays) Grading, Earth Moving Portable Toilets Fire Hazard Control (Herbicides) Health and Safety Wash Waters (Herbicides, Concrete, Oils, Greases)	Oils and Grease, Coolants Benzene & Derivatives, Oils & Grease Vinyl Chloride, Metals Erosion (Sediments) BOD, Disinfectants 9Spills) Sodium Arsenite, Dinitro Compounds Rodenticides, Insecticides
Landscaping and Earthmoving	Planting, Plant Maintenance Excavation, Tilling Masonry & Concrete Solid Wastes (Tree, Shrubs) Exposing Natural Lime or Other Mineral Deposits Soil Additives Revegetation of Graded Areas	Pesticides, Herbicides, Nutrients Erosion (Sediments) BOD Acidity/Alkalinity, Metals Aluminum Sulfate, Sulfur Fertilizers
Materials Storage	Waste Storage (Used oils, Solvents, etc.) Hazardous Waste Containment Raw Material piles	Spills, Leaks Spills, Leaks Dusts, Sediments

VOC = Volatile Organic Compounds, BOD = Biochemical Oxygen Demand due to the use of oxygen by decomposing materials

References: USEPA,1973. Processes, Procedures, and Methods to Control Pollution Resulting From Construction

LIST OF COMMON POTENTIAL NON-VISIBLE POLLUTANTS AT CONSTRUCTION SITES

The following table represents potential sources of non-visible pollutants that are common to most construction sites. This list is not meant to be inclusive, but to provide direction to construction site operators.

Category	Potential Pollutant Source	Field Indicator or Pollutant Release	Laboratory Analysis
Line Flushing	Chlorinated water	Colorimetric Kit	Residual chloride
Portable toilets	Bacteria, Disinfectants	N/A	Total/fecal coli form
Concrete & Masonry	Acid wash Curing compounds Concrete rinse water	pH meter pH meter pH meter	pH pH, alkalinity Volatile organic compounds (VOC's) pH
Painting	Resins	N/A	Semi-volatile organic compounds (SVOC's)

	Thinners Paint Strippers Solvents Adhesives Sealants	Phenols kit N/A Phenols kit Phenols kit N/A	Phenols, VOC's VOC's Phenols, VOC's Phenols, SVOC's SVOC's
Cleaning	Detergents Bleaches Solvents	Colorimetric Kit Colorimetric Kit Phenols kit	MBAS, phosphates Residual chlorine VOC's
Landscaping	Pesticides/Herbicides Fertilizers Lime and gypsum Aluminum sulfate, sulfur	N/A N/A pH meter Total dissolved solids (TDS), pH	Check with analytical laboratory NO3/NH3/P Acidity/alkalinity TDS, alkalinity
Treated wood	Copper, arsenic, selenium	Metals test kits may be available	Metals
Soil amendments & dust control	Lime, gypsum Plan gums Magnesium Chloride Calcium chloride Natural brines Lignosulfonates	pH meter N/A TDS TDS TDS TDS	pH Biochemical oxygen demand (BOD) Alkalinity, TDS Alkalinity, TDS Alkalinity, TDS Alkalinity, TDS

Source: California Stormwater Quality Task Force, October 2001

SAMPLE HANDLING GUIDE

CORELAB

Inorganic and Conventional Parameters

Parameters	EPA Method*	Container	Recommended Quantity (mL)	Preservative	Holding Time
Acidity	305.1	P,G	100	4°C	14 days
Alkalinity	310.1, 310.2	P,G	100	4°C	14 days
Ammonia	350.1, 350.2, 350.3	P,G	500	4°C, H_2SO_4 to pH <2	28 days
Biochemical Oxygen Demand (BOD)	405.1	P,G	1000	4°C	48 hours
Boron	200.7, 212.3	P, PFTE, Quartz	200	HNO_3 to pH <2	6 months
Bromide	320.1	P,G	200	None	28 days
Chemical Oxygen Demand (COD)	410.1, 410.2, 410.3, 410.4	P,G	100	4°C H_2S04 to pH <2	28 days
Chloride	325.1, 325.2, 325.3, 9252A, 9253	P,G	200	None	28 days
Chlorine, Residual	330.1, 330.2, 330.3, 330.4, 330.5	P,G	200	None	Immediately
Chromium VI	218.4	P,G	250	4°C	24 hours
Coliform, Total	SM 9221B, 9222B	P,G (sterile)	100	4°C	6 hours
Coliform, Fecal	SM 9221C, 9222D	P,G (sterile)	100	4°C	6 hours
Color	110.1, 110.2, 110.3	P,G	100	4°C	48 hours
Cyanide	335.2, 335.3 9010A	P,G	1000	4°C, ascorbic acid, NaOH to pH > 12	14 days
ıshpoint	1010	P,G	100	None	Not specified
ıuoride	340.1, 340.2, 340.3	P	500	None	28 days
Hardness	130.1, 130.2	P,G	100	$HN0_3$ or H_2S0_4 to pH < 2	6 months
Iodide	345.1	P,G	200	4°C	24 hours
Metals	6010A, 200, 7000 series	P,G	500	$HN0_3$ to pH < 2	6 months
Mercury	245.1, 245.2	P,G	500	$HN0_3$ to pH < 2	28 days
Nitrogen, Kjeldahl (TKN)	351.1, 351.2, 351.3	P,G	500	4°C, H_2SO_4 to pH < 2	28 days
Nitrate	352.1, 9200	P,G	100	4°C	48 hours
Nitrite	354.1	P,G	100	4°C	48 hours
Nitrate-Nitrite	353.1, 353.2, 353.3	P,G	200	4°C, H_2SO_4 to pH < 2	28 days
Oil and Grease	413.1, 9070	G	1000	4°C, H_2SO_4 or HCl to pH < 2	28 days
Phenols	420.1, 420.2, 9065, 9066	G	1000	4°C, H_2SO_4 to pH < 2	28 days
Phosphorus, Total	365.1, 365.2, 365.3, 365.4	P,G	200	4°C, H_2SO_4 to pH < 2	28 days
Phosphate, Ortho	365.1, 365.2, 365.3	P,G	200	4°C	48 hours
pH	150.1, 9040B	P,G	100	None	Immediately
Radiochemistry					
Alpha, Beta, Radium	900 & 9000 series	P,G	2000	$HN0_3$ to pH < 2	6 months
Tritium		P,G	100	None	6 months
Radon, I-131		P,G	1000	$HN0_3$ to pH < 2	14 days
ıa	370.1, 200.7	P, PFTE, Quartz	100	4°C	28 days
Solids, Dissolved (TDS)	160.1	P,G	100	4°C	7 days
Solids, Suspended (TSS)	160.2	P,G	500	4°C	7 days
Solids, Volatile (TVS)	160.4	P,G	100	4°C	7 days

Inorganic and Conventional Parameters

Parameters	EPA Method*	Container	Recommended Quantity (mL)	Preservative	Holding Time
Solids, Total (TS)	160.3	P,G	100	4°C	7 days
Specific Conductance	120.1, 9050	P,G	100	4°C	28 days
Sulfate	375.1, 375.3, 375.4, 9035, 9036, 9038	P,G	200	4°C	28 days
Sulfide	376.1, 376.2	P,G	500	4°C, Zn acetate, NaOH to pH > 9	7 days
Sulfite	377.1	P,G	200	None	Immediately
Surfactants (MBAS)	425.1	P,G	250	4°C	48 hours
Total Organic Carbon (TOC)	415.1, 9060	P,G	100	4°C, H_2SO_4, H_3PO_4 or HCl to pH < 2	28 days
Total Organic Halogens (TOX)	9020B	G-TLC (amber)	100	4°C, H_2SO_4 to pH < 2	28 days
Total Petroleum Hydrocarbon (TPH)	418.1	G-TLC	1000	4°C, H_2SO_4 or HCl to pH < 2	28 days
Turbidity	180.1	P,G	100	4°C	48 hours

Organic Parameters

Parameters	EPA Method*	Container	Minimum Quantity (mL)	Preservative	Holding Time
Purgeable Halocarbons	601, 8010B	G-TLS	2 x 40	4°C	14 days
Pureable Aromatics	602, 8020A	G-TLS	2 x 40	4°C, HCl to pH < 2	14 days
Acrolein and Acrylonitrile	603, 8030A	G-TLS	2 x 40	4°C, pH 4-5	14 days
Volatile Organics	524, 624, 8240B, 8260A, CLP	G-TLS	2 x 40	4°C, HCl to pH < 2	14 days 10 days for CLP
Organochlorine Pesticides and PCBs	608, 8080A	G-TLC (amber)	1000	4°C, pH 5-9	7/40 days
Organophosphorous Pesticides	8140	G-TLC (amber)	1000	4°C	7/40 days
Chlorinated Herbicides	615, 8150B	G-TLC (amber)	1000	4°C	7/40 days
Base/Neutrals and Acids	525, 625, 8250A, 8270B, CLP	G-TLC (amber)	1000	4°C	7/40 days 5/35 days for CLP
Dioxins and Furans	23, 613, 8280A, 8290, 1613, CLP	G-TLC (amber)	1000	4°C	30/45 days

TCLP Parameters

Parameters	Holding Time from Collection to TCLP Extraction (days)	Holding Time from TCLP Extraction to Preparative Extraction (days)	Holding Time from TCLP/Preparative Extraction to Analysis (days)	Total Elapsed Time (days)
Volatiles	14	NA	14	28
Semivolatiles	14	7	40	61
Mercury	28	NA	28	56
Metals	160	NA	160	320

Reference: 40CFR Part 136 Tables IA, IB, IC, ID & IE and Table II.

* The methods listed are for typical EPA references, except for SM, which refers to Standard Methods for the Examination of Water and Wastes, 18th Edition.

For bacteriological and organic parameters, add sodium thiosulfate if residual chlorine is present. Soil samples should be collected in 4-8 oz glass containers with a Teflon®-lined cap and preserved at 4°C. No preservative is required for waste samples. Teflon is a registered trademark of E.I. du Pont.

Acronym Definitions

CLP	EPA Contract Laboratory Program	G-TLS	Glass with Teflon®-lined septrum
G	Glass	NA	Not Applicable
G-TLC	Glass with Teflon®-lined cap	P	Polyethylene

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Houston, TX 77040
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APPENDIX I TRAINING CERTIFICATION DOCUMENTATION

Trained Contractor Personnel Log

Stormwater Management Training

Project Name: _____

Storm Water Management Topic: (check as appropriate)

- ❑ Soil Stabilization
- ❑ Sediment Control
- ❑ Wind Erosion Control
- ❑ Tracking Control
- ❑ Non-storm Water Management
- ❑ Waste Management and Materials Pollution Control
- ❑ Storm Water Sampling
- ❑ Other:_____

Specific Training Objective: _____

Location: _____ Date: _____

Instructor: _____ Telephone: _____

Course Length (hours): _____

Attendee Roster (attach additional forms if necessary)

Name	Company	Phone

Trained Contractor Personnel Log Sheet

Name	Company	Phone

*Use separate sheet for additional Attendees

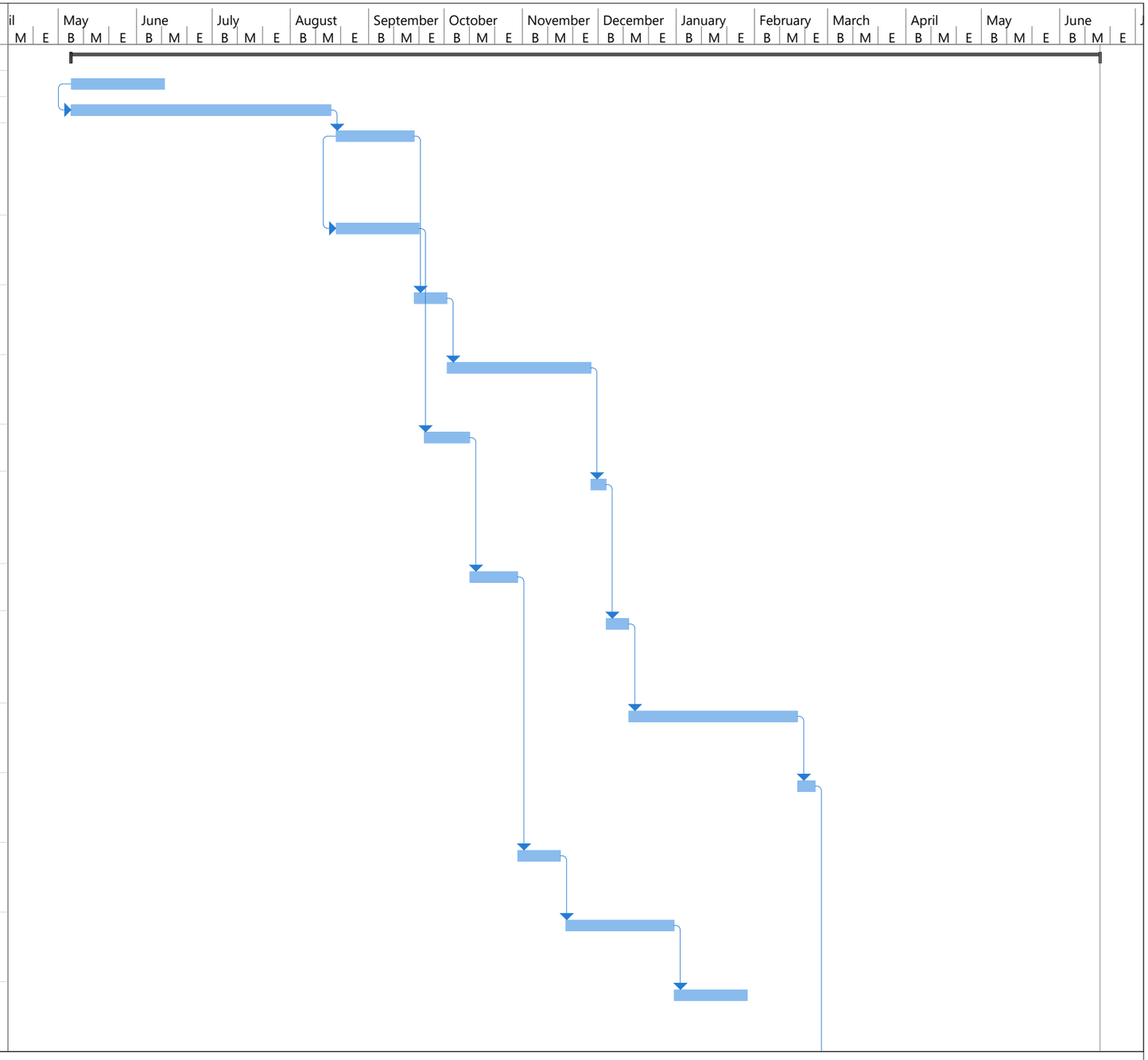
COMMENTS:

APPENDIX J LIST OF SUB-CONTRACTORS

TO BE INSERTED BY GARNEY CONSTRUCTION UPON AWARD OF CONTRACTS

APPENDIX K CONSTRUCTION SCHEDULE

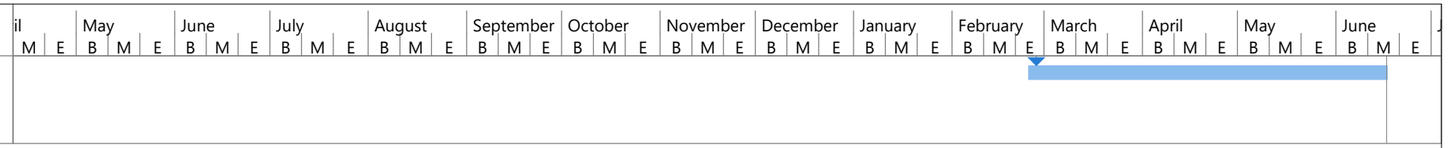
ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1		**Transfer Pipeline**	**292 days**	**Mon 5/6/19**	**Tue 6/16/20**	
2		Potholing	27 days	Mon 5/6/19	Tue 6/11/19	
3		Pipe Procurement	75 days	Mon 5/6/19	Fri 8/16/19	2SS
4		Install LIGHTFIGHTER DR. Sta. 132+21 to Sta. 161+00	23 days	Mon 8/19/19	Wed 9/18/19	3
5		CA-1 Bore Sta. 162+05 to Sta. 165+84	25 days	Mon 8/19/19	Fri 9/20/19	4SS
6		TAMC SEASIDE Sta. 166+35 to Sta. 178+60	9 days	Thu 9/19/19	Tue 10/1/19	4
7		TAMC MARINA Sta. 178+60 to Sta. 276+83	41 days	Wed 10/2/19	Wed 11/27/19	6
8		BORE RR TRACK Sta. 185+78	14 days	Mon 9/23/19	Thu 10/10/19	5
9		CALTRANS ROW - DEL MONTE - Sta. 276+83 to Sta. 282+55	4 days	Thu 11/28/19	Tue 12/3/19	7
10		BORE RR TRACK Sta. 288+16	13 days	Fri 10/11/19	Tue 10/29/19	8
11		CITY OF MARINA - DEL MONTE - Sta. 282+55 to Sta. 286+92	7 days	Wed 12/4/19	Thu 12/12/19	9
12		TAMC - MARINA DR. Sta. 289+00 to Sta. 381+65	47 days	Fri 12/13/19	Mon 2/17/20	11
13		TAMC - MONTEREY COUNTY Sta. 381+65 to Sta. 389+72	5 days	Tue 2/18/20	Mon 2/24/20	12
14		BORE RR TRACKS - LAPIS RD. Sta. 393+40	13 days	Wed 10/30/19	Fri 11/15/19	10
15		TAMC - LAPIS RD. Sta. 393+85 to Sta. 472+52	31 days	Mon 11/18/19	Mon 12/30/19	14
16		NEPONSET RD. Sta. 472+52 to Sta. 474+36	21 days	Tue 12/31/19	Tue 1/28/20	15



Project: Transfer Pipe Baseline - Date: Thu 4/11/19

Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Progress
Manual Progress

ID		Task Mode	Task Name	Duration	Start	Finish	Predecessors
17			GENERAL JIM MOORE Sta. 24+00 to Sta. 132+21	81 days	Tue 2/25/20	Tue 6/16/20	13

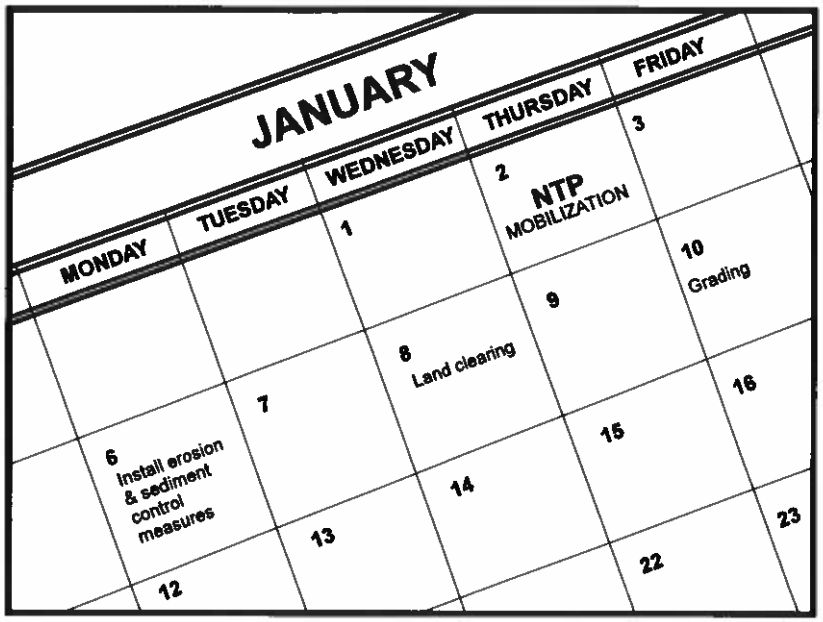


Project: Transfer Pipe Baseline - Date: Thu 4/11/19	Task	Project Summary	Manual Task	Start-only	Deadline
	Split	Inactive Task	Duration-only	Finish-only	Progress
	Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
	Summary	Inactive Summary	Manual Summary	External Milestone	

APPENDIX L INTENTIONALLY LEFT BLANK

APPENDIX M CASQA BMP HANDBOOK FACT SHEETS

Scheduling EC-1



Categories

EC	Erosion Control	☑
SE	Sediment Control	☒
TC	Tracking Control	☒
WE	Wind Erosion Control	☒
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ **Primary Objective**
☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

Description and Purpose

Scheduling is the development of a written plan that includes sequencing of construction activities and the implementation of BMPs such as erosion control and sediment control while taking local climate (rainfall, wind, etc.) into consideration. The purpose is to reduce the amount and duration of soil exposed to erosion by wind, rain, runoff, and vehicle tracking, and to perform the construction activities and control practices in accordance with the planned schedule.

Suitable Applications

Proper sequencing of construction activities to reduce erosion potential should be incorporated into the schedule of every construction project especially during rainy season. Use of other, more costly yet less effective, erosion and sediment control BMPs may often be reduced through proper construction sequencing.

Limitations

- Environmental constraints such as nesting season prohibitions reduce the full capabilities of this BMP.

Implementation

- Avoid rainy periods. Schedule major grading operations during dry months when practical. Allow enough time before rainfall begins to stabilize the soil with vegetation or physical means or to install sediment trapping devices.
- Plan the project and develop a schedule showing each phase

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CALIFORNIA STORMWATER QUALITY ASSOCIATION

of construction. Clearly show how the rainy season relates to soil disturbing and re-stabilization activities. Incorporate the construction schedule into the SWPPP.

- Include on the schedule, details on the rainy season implementation and deployment of:
  - Erosion control BMPs
  - Sediment control BMPs
  - Tracking control BMPs
  - Wind erosion control BMPs
  - Non-stormwater BMPs
  - Waste management and materials pollution control BMPs
- Include dates for activities that may require non-stormwater discharges such as dewatering, sawcutting, grinding, drilling, boring, crushing, blasting, painting, hydro-demolition, mortar mixing, pavement cleaning, etc.
- Work out the sequencing and timetable for the start and completion of each item such as site clearing and grubbing, grading, excavation, paving, foundation pouring utilities installation, etc., to minimize the active construction area during the rainy season.
  - Sequence trenching activities so that most open portions are closed before new trenching begins.
  - Incorporate staged seeding and re-vegetation of graded slopes as work progresses.
  - Schedule establishment of permanent vegetation during appropriate planting time for specified vegetation.
- Non-active areas should be stabilized as soon as practical after the cessation of soil disturbing activities or one day prior to the onset of precipitation.
- Monitor the weather forecast for rainfall.
- When rainfall is predicted, adjust the construction schedule to allow the implementation of soil stabilization and sediment treatment controls on all disturbed areas prior to the onset of rain.
- Be prepared year round to deploy erosion control and sediment control BMPs. Erosion may be caused during dry seasons by un-seasonal rainfall, wind, and vehicle tracking. Keep the site stabilized year round, and retain and maintain rainy season sediment trapping devices in operational condition.
- Apply permanent erosion control to areas deemed substantially complete during the project's defined seeding window.

Costs

Construction scheduling to reduce erosion may increase other construction costs due to reduced economies of scale in performing site grading. The cost effectiveness of scheduling techniques should be compared with the other less effective erosion and sedimentation controls to achieve a cost effective balance.

Inspection and Maintenance

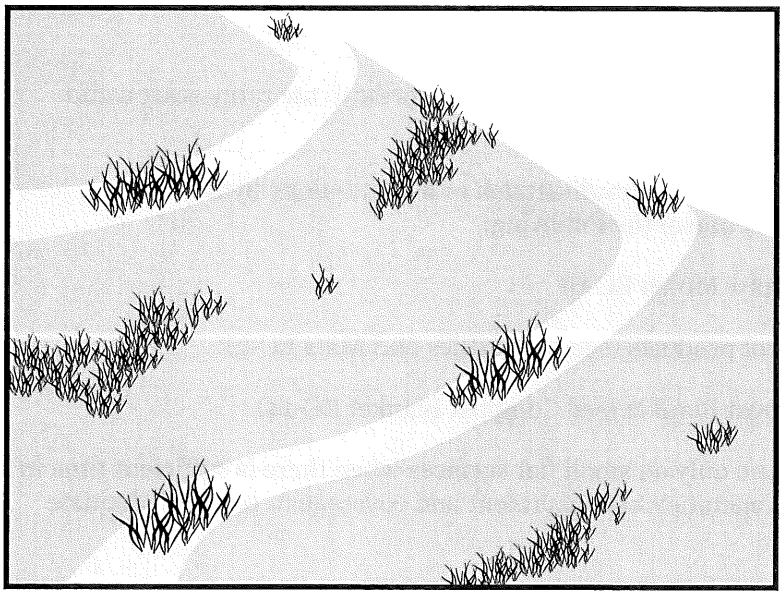
- Verify that work is progressing in accordance with the schedule. If progress deviates, take corrective actions.
- Amend the schedule when changes are warranted.
- Amend the schedule prior to the rainy season to show updated information on the deployment and implementation of construction site BMPs.

References

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities Developing Pollution Prevention Plans and Best Management Practices (EPA 832-R-92-005), U.S. Environmental Protection Agency, Office of Water, September 1992.

Hydroseeding EC-4



Categories

EC	Erosion Control	☑
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	☒
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-3 Hydraulic Mulch
EC-5 Soil Binders
EC-6 Straw Mulch
EC-7 Geotextiles and Mats
EC-8 Wood Mulching
EC-14 Compost Blanket
EC-16 Non-Vegetative Stabilization

Description and Purpose

Hydroseeding typically consists of applying a mixture of a hydraulic mulch, seed, fertilizer, and stabilizing emulsion with a hydraulic mulcher, to temporarily protect exposed soils from erosion by water and wind. Hydraulic seeding, or hydroseeding, is simply the method by which temporary or permanent seed is applied to the soil surface.

Suitable Applications

Hydroseeding is suitable for disturbed areas requiring temporary protection until permanent stabilization is established, for disturbed areas that will be re-disturbed following an extended period of inactivity, or to apply permanent stabilization measures. Hydroseeding without mulch or other cover (e.g. EC-7, Erosion Control Blanket) is not a stand-alone erosion control BMP and should be combined with additional measures until vegetation establishment.

Typical applications for hydroseeding include:

- Disturbed soil/graded areas where permanent stabilization or continued earthwork is not anticipated prior to seed germination.
- Cleared and graded areas exposed to seasonal rains or temporary irrigation.
- Areas not subject to heavy wear by construction equipment or high traffic.

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Limitations

- Availability of hydroseeding equipment may be limited just prior to the rainy season and prior to storms due to high demand.
- Hydraulic seed should be applied with hydraulic mulch or a stand-alone hydroseed application should be followed by one of the following:
  - Straw mulch (see Straw Mulch EC-6)
  - Rolled erosion control products (see Geotextiles and Mats EC-7)
  - Application of Compost Blanket (see Compost Blanket EC-14)

  Hydraulic seed may be used alone only on small flat surfaces when there is sufficient time in the season to ensure adequate vegetation establishment and coverage to provide adequate erosion control.
- Hydraulic seed without mulch does not provide immediate erosion control.
- Temporary seeding may not be appropriate for steep slopes (i.e., slopes readily prone to rill erosion or without sufficient topsoil).
- Temporary seeding may not be appropriate in dry periods without supplemental irrigation.
- Temporary vegetation may have to be removed before permanent vegetation is applied.
- Temporary vegetation may not be appropriate for short term inactivity (i.e. less than 3-6 months).

Implementation

In order to select appropriate hydraulic seed mixtures, an evaluation of site conditions should be performed with respect to:

- Soil conditions
- Site topography and exposure (sun/wind)
- Season and climate
- Vegetation types
- Maintenance requirements
- Sensitive adjacent areas
- Water availability
- Plans for permanent vegetation

The local office of the U.S.D.A. Natural Resources Conservation Service (NRCS) is an excellent source of information on appropriate seed mixes.

The following steps should be followed for implementation:

- Where appropriate or feasible, soil should be prepared to receive the seed by disking or otherwise scarifying (See EC-15, Soil Preparation) the surface to eliminate crust, improve air and water infiltration and create a more favorable environment for germination and growth.

- Avoid use of hydraulic seed in areas where the BMP would be incompatible with future earthwork activities.
- Hydraulic seed can be applied using a multiple step or one step process.
  - In a multiple step process, hydraulic seed is applied first, followed by mulch or a Rolled Erosion Control Product (RECP).
  - In the one step process, hydraulic seed is applied with hydraulic mulch in a hydraulic matrix. When the one step process is used to apply the mixture of fiber, seed, etc., the seed rate should be increased to compensate for all seeds not having direct contact with the soil.
- All hydraulically seeded areas should have mulch, or alternate erosion control cover to keep seeds in place and to moderate soil moisture and temperature until the seeds germinate and grow.
- All seeds should be in conformance with the California State Seed Law of the Department of Agriculture. Each seed bag should be delivered to the site sealed and clearly marked as to species, purity, percent germination, dealer's guarantee, and dates of test. The container should be labeled to clearly reflect the amount of Pure Live Seed (PLS) contained. All legume seed should be pellet inoculated. Inoculant sources should be species specific and should be applied at a rate of 2 lb of inoculant per 100 lb seed.
- Commercial fertilizer should conform to the requirements of the California Food and Agricultural Code, which can be found at http://www.leginfo.ca.gov/.html/fac_table_of_contents.html. Fertilizer should be pelleted or granular form.
- Follow up applications should be made as needed to cover areas of poor coverage or germination/vegetation establishment and to maintain adequate soil protection.
- Avoid over spray onto roads, sidewalks, drainage channels, existing vegetation, etc.
- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.

Costs

Average cost for installation and maintenance may vary from as low as $1,900 per acre for flat slopes and stable soils, to $4,000 per acre for moderate to steep slopes and/or erosive soils. Cost of seed mixtures vary based on types of required vegetation.

BMP	Installed Cost per Acre
Hydraulic Seed	$1,900-$4,000

Source: Caltrans Soil Stabilization BMP Research for Erosion and Sediment Controls, July 2007

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Areas where erosion is evident should be repaired and BMPs re-applied as soon as possible. Care should be exercised to minimize the damage to protected areas while making repairs, as any area damaged will require re-application of BMPs.
- Where seeds fail to germinate, or they germinate and die, the area must be re-seeded, fertilized, and mulched within the planting season, using not less than half the original application rates.
- Irrigation systems, if applicable, should be inspected daily while in use to identify system malfunctions and line breaks. When line breaks are detected, the system must be shut down immediately and breaks repaired before the system is put back into operation.
- Irrigation systems should be inspected for complete coverage and adjusted as needed to maintain complete coverage.

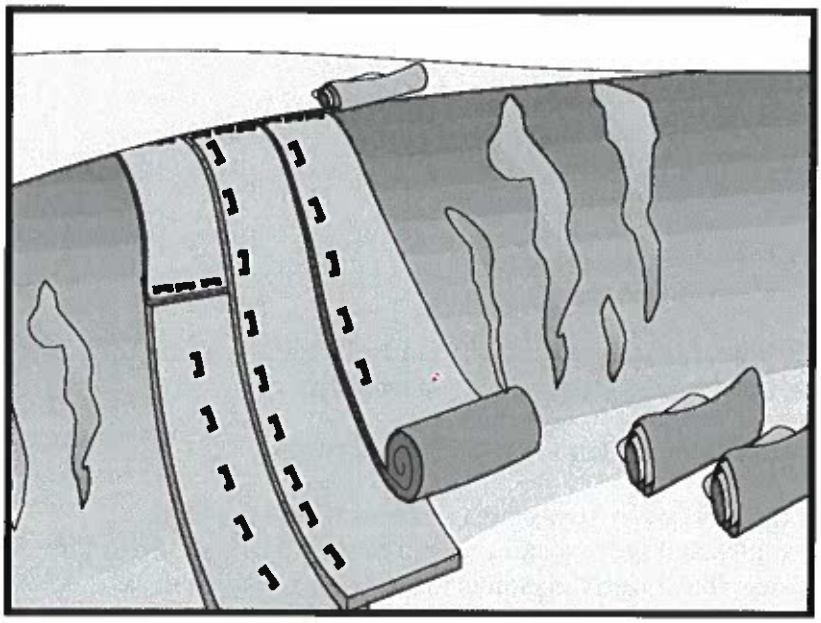
References

Soil Stabilization BMP Research for Erosion and Sediment Controls: Cost Survey Technical Memorandum, State of California Department of Transportation (Caltrans), July 2007.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Guidance Document: Soil Stabilization for Temporary Slopes, State of California Department of Transportation (Caltrans), November 1999.

Geotextiles and Mats EC-7



Categories

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Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-3 Hydraulic Mulch

EC-4 Hydroseeding

Description and Purpose

Mattings, or Rolled Erosion Control Products (RECPs), can be made of natural or synthetic materials or a combination of the two. RECPs are used to cover the soil surface to reduce erosion from rainfall impact, hold soil in place, and absorb and hold moisture near the soil surface. Additionally, RECPs may be used to stabilize soils until vegetation is established or to reinforce non-woody surface vegetation.

Suitable Applications

RECPs are typically applied on slopes where erosion hazard is high and vegetation will be slow to establish. Mattings are also used on stream banks, swales and other drainage channels where moving water at velocities between 3 ft/s and 6 ft/s are likely to cause scour and wash out new vegetation, and in areas where the soil surface is disturbed and where existing vegetation has been removed. RECPs may also be used when seeding cannot occur (e.g., late season construction and/or the arrival of an early rain season). RECPs should be considered when the soils are fine grained and potentially erosive. RECPs should be considered in the following situations.

- Steep slopes, generally steeper than 3:1 (H:V)
- Slopes where the erosion potential is high
- Slopes and disturbed soils where mulch must be anchored
- Disturbed areas where plants are slow to develop

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- Channels with flows exceeding 3.3 ft/s
- Channels to be vegetated
- Stockpiles
- Slopes adjacent to water bodies

Limitations

- RECP installed costs are generally higher than other erosion control BMPs, limiting their use to areas where other BMPs are ineffective (e.g. channels, steep slopes).
- RECPs may delay seed germination, due to reduction in soil temperature.
- RECPs are generally not suitable for excessively rocky sites or areas where the final vegetation will be mowed (since staples and netting can catch in mowers). If a staple or pin cannot be driven into the soil because the underlying soil is too hard or rocky, then an alternative BMP should be selected.
- If used for temporary erosion control, RECPs should be removed and disposed of prior to application of permanent soil stabilization measures.
- The use of plastic should be limited to covering stockpiles or very small graded areas for short periods of time (such as through one imminent storm event) until more environmentally friendly measures, such as seeding and mulching, may be installed.
    - Plastic sheeting is easily vandalized, easily torn, photodegradable, and must be disposed of at a landfill.
    - Plastic sheeting results in 100% runoff, which may cause serious erosion problems in the areas receiving the increased flow.
- RECPs may have limitations based on soil type, slope gradient, or channel flow rate; consult the manufacturer for proper selection.
- Not suitable for areas that have foot traffic (tripping hazard) – e.g., pad areas around buildings under construction.
- RECPs that incorporate a plastic netting (e.g. straw blanket typically uses a plastic netting to hold the straw in place) may not be suitable near known wildlife habitat. Wildlife can become trapped in the plastic netting.
- RECPs may have limitations in extremely windy climates. However, when RECPs are properly trenched at the top and bottom and stapled in accordance with the manufacturer's recommendations, problems with wind can be minimized.

Implementation

Material Selection

- Natural RECPs have been found to be effective where re-vegetation will be provided by re-seeding. The choice of material should be based on the size of area, side slopes, surface conditions such as hardness, moisture, weed growth, and availability of materials.
- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.
- The following natural and synthetic RECPs are commonly used:

Geotextiles

- Material can be a woven or a non-woven polypropylene fabric with minimum thickness of 0.06 in., minimum width of 12 ft and should have minimum tensile strength of 150 lbs (warp), 80 lbs (fill) in conformance with the requirements in ASTM Designation: D 4632. The permittivity of the fabric should be approximately 0.07 sec^{-1} in conformance with the requirements in ASTM Designation: D4491. The fabric should have an ultraviolet (UV) stability of 70 percent in conformance with the requirements in ASTM designation: D4355. Geotextile blankets must be secured in place with wire staples or sandbags and by keying into tops of slopes to prevent infiltration of surface waters under geotextile. Staples should be made of minimum 11 gauge steel wire and should be U-shaped with 8 in. legs and 2 in. crown.
- Geotextiles may be reused if they are suitable for the use intended.

Plastic Covers

- Generally plastic sheeting should only be used as stockpile covering or for very small graded areas for short periods of time (such as through one imminent storm event). If plastic sheeting must be used, choose a plastic that will withstand photo degradation.
- Plastic sheeting should have a minimum thickness of 6 mils, and must be keyed in at the top of slope (when used as a temporary slope protection) and firmly held in place with sandbags or other weights placed no more than 10 ft apart. Seams are typically taped or weighted down their entire length, and there should be at least a 12 in. to 24 in. overlap of all seams. Edges should be embedded a minimum of 6 in. in soil (when used as a temporary slope protection).
- All sheeting must be inspected periodically after installation and after significant rainstorms to check for erosion, undermining, and anchorage failure. Any failures must be repaired immediately. If washout or breakages occur, the material should be re-installed after repairing the damage to the slope.

Erosion Control Blankets/Mats

- Biodegradable RECPs are typically composed of jute fibers, curled wood fibers, straw, coconut fiber, or a combination of these materials. In order for an RECP to be considered 100% biodegradable, the netting, sewing or adhesive system that holds the biodegradable mulch fibers together must also be biodegradable. See typical installation details at the end of this fact sheet.

- **Jute** is a natural fiber that is made into a yarn that is loosely woven into a biodegradable mesh. The performance of jute as a stand-alone RECP is low. Most other RECPs outperform jute as a temporary erosion control product and therefore jute is not commonly used. It is designed to be used in conjunction with vegetation. The material is supplied in rolled strips, which should be secured to the soil with U-shaped staples or stakes in accordance with manufacturers' recommendations.

- **Excelsior** (curled wood fiber) blanket material should consist of machine produced mats of curled wood excelsior with 80 percent of the fiber 6 in. or longer. The excelsior blanket should be of consistent thickness. The wood fiber must be evenly distributed over the entire area of the blanket. The top surface of the blanket should be covered with a photodegradable extruded plastic mesh. The blanket should be smolder resistant without the use of chemical additives and should be non-toxic and non-injurious to plant and animal life. Excelsior blankets should be furnished in rolled strips, a minimum of 48 in. wide, and should have an average weight of 0.8 lb/yd^2, ±10 percent, at the time of manufacture. Excelsior blankets must be secured in place with wire staples. Staples should be made of minimum 11 gauge steel wire and should be U-shaped with 8 in. legs and 2 in. crown.

- **Straw blanket** should be machine produced mats of straw with a lightweight biodegradable netting top layer. The straw should be attached to the netting with biodegradable thread or glue strips. The straw blanket should be of consistent thickness. The straw should be evenly distributed over the entire area of the blanket. Straw blanket should be furnished in rolled strips a minimum of 6.5 ft wide, a minimum of 80 ft long and a minimum of 0.5 lb/yd^2. Straw blankets must be secured in place with wire staples. Staples should be made of minimum 11 gauge steel wire and should be U-shaped with 8 in. legs and 2 in. crown.

- **Wood fiber blanket** is composed of biodegradable fiber mulch with extruded plastic netting held together with adhesives. The material is designed to enhance re-vegetation. The material is furnished in rolled strips, which must be secured to the ground with U-shaped staples or stakes in accordance with manufacturers' recommendations.

- **Coconut fiber blanket** should be a machine produced mat of 100 percent coconut fiber with biodegradable netting on the top and bottom. The coconut fiber should be attached to the netting with biodegradable thread or glue strips. The coconut fiber blanket should be of consistent thickness. The coconut fiber should be evenly distributed over the entire area of the blanket. Coconut fiber blanket should be furnished in rolled strips with a minimum of 6.5 ft wide, a minimum of 80 ft. long and a minimum of 0.5 lb/yd^2. Coconut fiber blankets must be secured in place with wire staples. Staples should be made of minimum 11 gauge steel wire and should be U-shaped with 8 in. legs and 2 in. crown.

- **Coconut fiber mesh** is a thin permeable membrane made from coconut or corn fiber that is spun into a yarn and woven into a biodegradable mat. It is designed to be used in conjunction with vegetation and typically has longevity of several years. The material is supplied in rolled strips, which must be secured to the soil with U-shaped staples or stakes in accordance with manufacturers' recommendations.

- **Straw coconut fiber blanket** should be machine produced mats of 70 percent straw and 30 percent coconut fiber with a biodegradable netting top layer and a biodegradable bottom net. The straw and coconut fiber should be attached to the netting with biodegradable thread or glue strips. The straw coconut fiber blanket should be of consistent thickness. The straw and coconut fiber should be evenly distributed over the entire area of the blanket. Straw coconut fiber blanket should be furnished in rolled strips a minimum of 6.5 ft wide, a minimum of 80 ft long and a minimum of 0.5 lb/yd^2. Straw coconut fiber blankets must be secured in place with wire staples. Staples should be made of minimum 11 gauge steel wire and should be U-shaped with 8 in. legs and 2 in. crown.

- Non-biodegradable RECPs are typically composed of polypropylene, polyethylene, nylon or other synthetic fibers. In some cases, a combination of biodegradable and synthetic fibers is used to construct the RECP. Netting used to hold these fibers together is typically non-biodegradable as well.

  - **Plastic netting** is a lightweight biaxially oriented netting designed for securing loose mulches like straw or paper to soil surfaces to establish vegetation. The netting is photodegradable. The netting is supplied in rolled strips, which must be secured with U-shaped staples or stakes in accordance with manufacturers' recommendations.

  - **Plastic mesh** is an open weave geotextile that is composed of an extruded synthetic fiber woven into a mesh with an opening size of less than ¼ in. It is used with re-vegetation or may be used to secure loose fiber such as straw to the ground. The material is supplied in rolled strips, which must be secured to the soil with U-shaped staples or stakes in accordance with manufacturers' recommendations.

  - **Synthetic fiber with netting** is a mat that is composed of durable synthetic fibers treated to resist chemicals and ultraviolet light. The mat is a dense, three dimensional mesh of synthetic (typically polyolefin) fibers stitched between two polypropylene nets. The mats are designed to be re-vegetated and provide a permanent composite system of soil, roots, and geomatrix. The material is furnished in rolled strips, which must be secured with U-shaped staples or stakes in accordance with manufacturers' recommendations.

  - **Bonded synthetic fibers** consist of a three dimensional geomatrix nylon (or other synthetic) matting. Typically it has more than 90 percent open area, which facilitates root growth. It's tough root reinforcing system anchors vegetation and protects against hydraulic lift and shear forces created by high volume discharges. It can be installed over prepared soil, followed by seeding into the mat. Once vegetated, it becomes an invisible composite system of soil, roots, and geomatrix. The material is furnished in rolled strips that must be secured with U-shaped staples or stakes in accordance with manufacturers' recommendations.

  - **Combination synthetic and biodegradable RECPs** consist of biodegradable fibers, such as wood fiber or coconut fiber, with a heavy polypropylene net stitched to the top and a high strength continuous filament geomatrix or net stitched to the bottom. The material is designed to enhance re-vegetation. The material is furnished in rolled strips,

which must be secured with U-shaped staples or stakes in accordance with manufacturers' recommendations.

Site Preparation

- Proper soil preparation is essential to ensure complete contact of the RECP with the soil. Soil Roughening is not recommended in areas where RECPs will be installed.
- Grade and shape the area of installation.
- Remove all rocks, clods, vegetation or other obstructions so that the installed blankets or mats will have complete, direct contact with the soil.
- Prepare seedbed by loosening 2 to 3 in. of topsoil.

Seeding/Planting

Seed the area before blanket installation for erosion control and re-vegetation. Seeding after mat installation is often specified for turf reinforcement application. When seeding prior to blanket installation, all areas disturbed during blanket installation must be re-seeded. Where soil filling is specified for turf reinforcement mats (TRMs), seed the matting and the entire disturbed area after installation and prior to filling the mat with soil.

Fertilize and seed in accordance with seeding specifications or other types of landscaping plans. The protective matting can be laid over areas where grass has been planted and the seedlings have emerged. Where vines or other ground covers are to be planted, lay the protective matting first and then plant through matting according to design of planting.

Check Slots

Check slots shall be installed as required by the manufacturer.

Laying and Securing Matting

- Before laying the matting, all check slots should be installed and the seedbed should be friable, made free from clods, rocks, and roots. The surface should be compacted and finished according to the requirements of the manufacturer's recommendations.
- Mechanical or manual lay down equipment should be capable of handling full rolls of fabric and laying the fabric smoothly without wrinkles or folds. The equipment should meet the fabric manufacturer's recommendations or equivalent standards.

Anchoring

- U-shaped wire staples, metal geotextile stake pins, or triangular wooden stakes can be used to anchor mats and blankets to the ground surface.
- Wire staples should be made of minimum 11 gauge steel wire and should be U-shaped with 8 in. legs and 2 in. crown.
- Metal stake pins should be 0.188 in. diameter steel with a 1.5 in. steel washer at the head of the pin, and 8 in. in length.
- Wire staples and metal stakes should be driven flush to the soil surface.

Installation on Slopes

Installation should be in accordance with the manufacturer's recommendations. In general, these will be as follows:

- Begin at the top of the slope and anchor the blanket in a 6 in. deep by 6 in. wide trench. Backfill trench and tamp earth firmly.
- Unroll blanket down slope in the direction of water flow.
- Overlap the edges of adjacent parallel rolls 2 to 3 in. and staple every 3 ft (or greater, per manufacturer's specifications).
- When blankets must be spliced, place blankets end over end (shingle style) with 6 in. overlap. Staple through overlapped area, approximately 12 in. apart.
- Lay blankets loosely and maintain direct contact with the soil. Do not stretch.
- Staple blankets sufficiently to anchor blanket and maintain contact with the soil. Staples should be placed down the center and staggered with the staples placed along the edges. Steep slopes, 1:1 (H:V) to 2:1 (H:V), require a minimum of 2 staples/yd^2. Moderate slopes, 2:1 (H:V) to 3:1 (H:V), require a minimum of 1 ½ staples/yd^2. Check manufacturer's specifications to determine if a higher density staple pattern is required.

Installation in Channels

Installation should be in accordance with the manufacturer's recommendations. In general, these will be as follows:

- Dig initial anchor trench 12 in. deep and 6 in. wide across the channel at the lower end of the project area.
- Excavate intermittent check slots, 6 in. deep and 6 in. wide across the channel at 25 to 30 ft intervals along the channels.
- Cut longitudinal channel anchor trenches 4 in. deep and 4 in. wide along each side of the installation to bury edges of matting, whenever possible extend matting 2 to 3 in. above the crest of the channel side slopes.
- Beginning at the downstream end and in the center of the channel, place the initial end of the first roll in the anchor trench and secure with fastening devices at 12 in. intervals. Note: matting will initially be upside down in anchor trench.
- In the same manner, position adjacent rolls in anchor trench, overlapping the preceding roll a minimum of 3 in.
- Secure these initial ends of mats with anchors at 12 in. intervals, backfill and compact soil.
- Unroll center strip of matting upstream. Stop at next check slot or terminal anchor trench. Unroll adjacent mats upstream in similar fashion, maintaining a 3 in. overlap.

- Fold and secure all rolls of matting snugly into all transverse check slots. Lay mat in the bottom of the slot then fold back against itself. Anchor through both layers of mat at 12 in. intervals, then backfill and compact soil. Continue rolling all mat widths upstream to the next check slot or terminal anchor trench.
- Alternate method for non-critical installations: Place two rows of anchors on 6 in. centers at 25 to 30 ft. intervals in lieu of excavated check slots.
- Staple shingled lap spliced ends a minimum of 12 in. apart on 12 in. intervals.
- Place edges of outside mats in previously excavated longitudinal slots; anchor using prescribed staple pattern, backfill, and compact soil.
- Anchor, fill, and compact upstream end of mat in a 12 in. by 6 in. terminal trench.
- Secure mat to ground surface using U-shaped wire staples, geotextile pins, or wooden stakes.
- Seed and fill turf reinforcement matting with soil, if specified.

Soil Filling (if specified for turf reinforcement mat (TRM))

Installation should be in accordance with the manufacturer's recommendations. Typical installation guidelines are as follows:

- After seeding, spread and lightly rake ½-3/4 inches of fine topsoil into the TRM apertures to completely fill TRM thickness. Use backside of rake or other flat implement.
- Alternatively, if allowed by product specifications, spread topsoil using lightweight loader, backhoe, or other power equipment. Avoid sharp turns with equipment.
- Always consult the manufacturer's recommendations for installation.
- Do not drive tracked or heavy equipment over mat.
- Avoid any traffic over matting if loose or wet soil conditions exist.
- Use shovels, rakes, or brooms for fine grading and touch up.
- Smooth out soil filling just exposing top netting of mat.

Temporary Soil Stabilization Removal

- Temporary soil stabilization removed from the site of the work must be disposed of if necessary.

Costs

Installed costs can be relatively high compared to other BMPs. Approximate costs for installed materials are shown below:

Rolled Erosion Control Products		Installed Cost per Acre (2000)[1]	Estimated Cost per Acre (2009)[2]
Biodegradable	Jute Mesh	$6,000-$7,000	$6,600-$7,700
	Curled Wood Fiber	$8,000-$10,500	$8,800-$11,050
	Straw	$8,000-$10,500	$8,800-$11,050
	Wood Fiber	$8,000-$10,500	$8,800-$11,050
	Coconut Fiber	$13,000-$14,000	$14,300-$15,400
	Coconut Fiber Mesh	$30,000-$33,000	$33,000-$36,300
	Straw Coconut Fiber	$10,000-$12,000	$11,000-$13,200
Non-Biodegradable	Plastic Netting	$2,000-$2,200	$2,200-$2,220
	Plastic Mesh	$3,000-$3,500	$3,300-$3,850
	Synthetic Fiber with Netting	$34,000-$40,000	$37,400-$44,000
	Bonded Synthetic Fibers	$45,000-$55,000	$49,500-$60,500
	Combination with Biodegradable	$30,000-$36,000	$33,000-$39,600

1. Source: Erosion Control Pilot Study Report, Caltrans, June 2000.

2. 2009 costs reflect a 10% escalation over year 2000 costs. Escalation based on informal survey of industry trends. Note: Expected cost increase is offset by competitive economic conditions.

Inspection and Maintenance

- RECPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Areas where erosion is evident shall be repaired and BMPs reapplied as soon as possible. Care should be exercised to minimize the damage to protected areas while making repairs, as any area damaged will require reapplication of BMPs.
- If washout or breakage occurs, re-install the material after repairing the damage to the slope or channel.
- Make sure matting is uniformly in contact with the soil.
- Check that all the lap joints are secure.
- Check that staples are flush with the ground.

References

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Erosion Control Pilot Study Report, State of California Department of Transportation (Caltrans), June 2000.

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Stormwater Management of the Puget Sound Basin, Technical Manual, Publication #91-75, Washington State Department of Ecology, February 1992.

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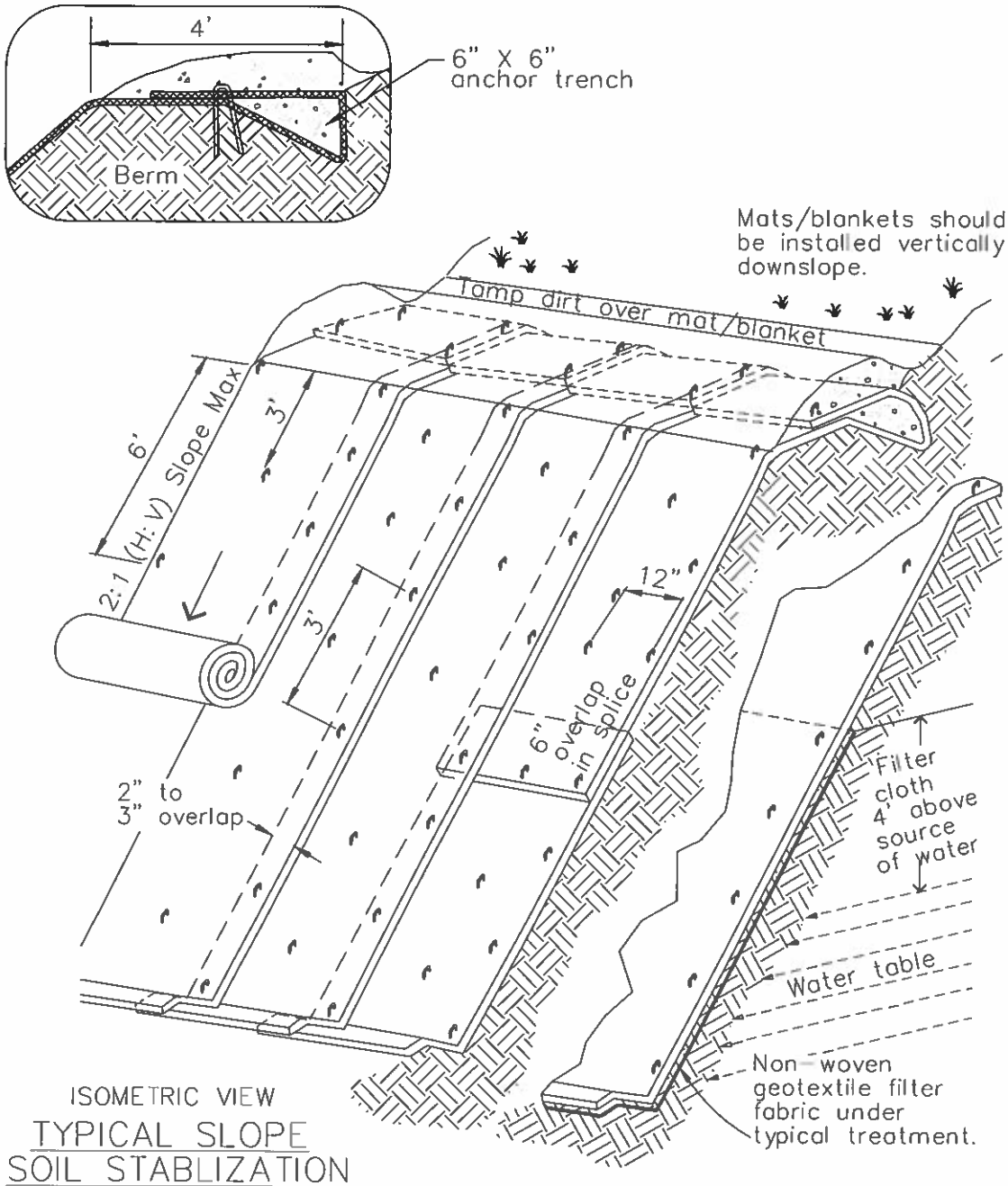


ISOMETRIC VIEW

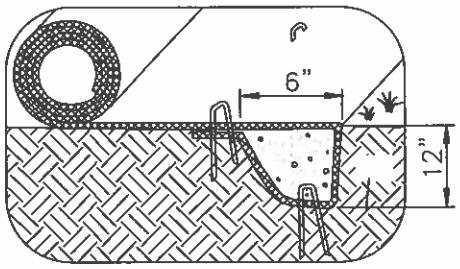
TYPICAL SLOPE
SOIL STABLIZATION
NTS

WET SLOPE LINING
NTS

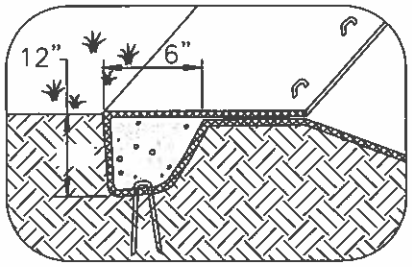
NOTES:

1. Slope surface shall be free of rocks, clods, sticks and grass. Mats/blankets shall have good soil contact.
2. Lay blankets loosely and stake or staple to maintain direct contact with the soil. Do not stretch.
3. Install per manufacturer's recommendations

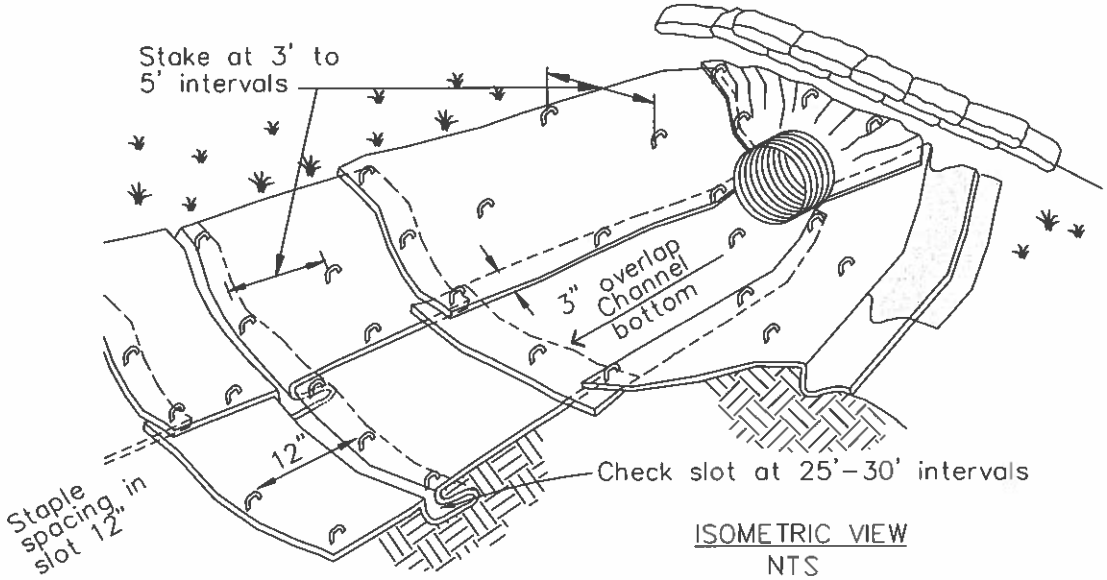
TYPICAL INSTALLATION DETAIL



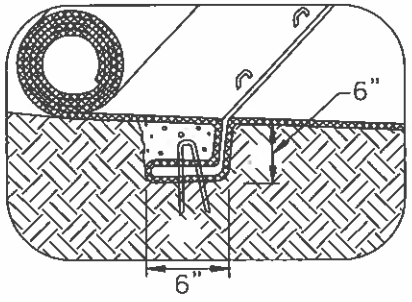
INITIAL CHANNEL ANCHOR TRENCH
NTS



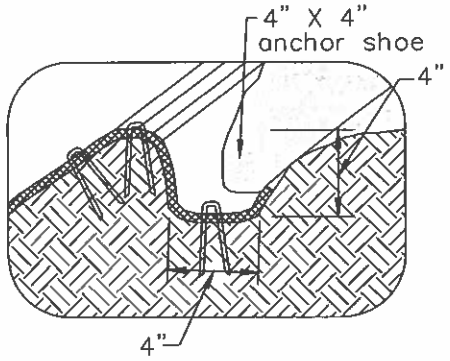
TERMINAL SLOPE AND CHANNEL ANCHOR TRENCH
NTS



ISOMETRIC VIEW
NTS



INTERMITTENT CHECK SLOT
NTS



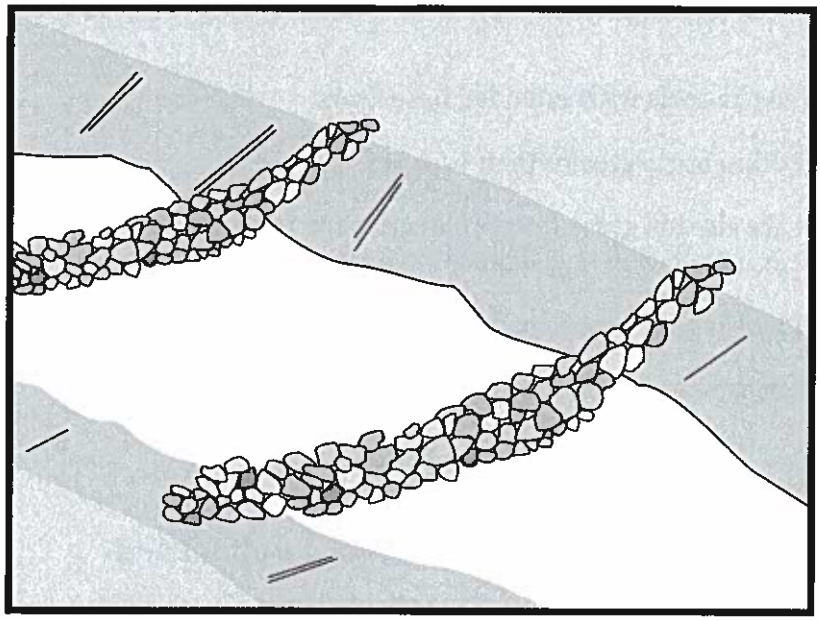
LONGITUDINAL ANCHOR TRENCH
NTS

NOTES:
1. Check slots to be constructed per manufacturers specifications.
2. Staking or stapling layout per manufacturers specifications.
3. Install per manufacturer's recommendations

TYPICAL INSTALLATION DETAIL

Check Dams

SE-4



Categories

EC	Erosion Control	☒
SE	Sediment Control	☑
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Category**

☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

SE-5 Fiber Rolls

SE-6 Gravel Bag Berm

SE-8 Sandbag Barrier

SE-14 Biofilter Bags

Description and Purpose

A check dam is a small barrier constructed of rock, gravel bags, sandbags, fiber rolls, or other proprietary products, placed across a constructed swale or drainage ditch. Check dams reduce the effective slope of the channel, thereby reducing scour and channel erosion by reducing flow velocity and increasing residence time within the channel, allowing sediment to settle.

Suitable Applications

Check dams may be appropriate in the following situations:

- To promote sedimentation behind the dam.
- To prevent erosion by reducing the velocity of channel flow in small intermittent channels and temporary swales.
- In small open channels that drain 10 acres or less.
- In steep channels where stormwater runoff velocities exceed 5 ft/s.
- During the establishment of grass linings in drainage ditches or channels.
- In temporary ditches where the short length of service does not warrant establishment of erosion-resistant linings.
- To act as a grade control structure.

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Limitations

- Not to be used in live streams or in channels with extended base flows.
- Not appropriate in channels that drain areas greater than 10 acres.
- Not appropriate in channels that are already grass-lined unless erosion potential or sediment-laden flow is expected, as installation may damage vegetation.
- Require extensive maintenance following high velocity flows.
- Promotes sediment trapping which can be re-suspended during subsequent storms or removal of the check dam.
- Do not construct check dams with straw bales or silt fence.
- Water suitable for mosquito production may stand behind check dams, particularly if subjected to daily non-stormwater discharges.

Implementation

General

Check dams reduce the effective slope and create small pools in swales and ditches that drain 10 acres or less. Using check dams to reduce channel slope reduces the velocity of stormwater flows, thus reducing erosion of the swale or ditch and promoting sedimentation. Thus, check dams are dual-purpose and serve an important role as erosion controls as well as as sediment controls. Note that use of 1-2 isolated check dams for sedimentation will likely result in little net removal of sediment because of the small detention time and probable scour during longer storms. Using a series of check dams will generally increase their effectiveness. A sediment trap (SE-3) may be placed immediately upstream of the check dam to increase sediment removal efficiency.

Design and Layout

Check dams work by decreasing the effective slope in ditches and swales. An important consequence of the reduced slope is a reduction in capacity of the ditch or swale. This reduction in capacity should be considered when using this BMP, as reduced capacity can result in overtopping of the ditch or swale and resultant consequences. In some cases, such as a "permanent" ditch or swale being constructed early and used as a "temporary" conveyance for construction flows, the ditch or swale may have sufficient capacity such that the temporary reduction in capacity due to check dams is acceptable. When check dams reduce capacities beyond acceptable limits, either:

- Don't use check dams. Consider alternative BMPs, or.
- Increase the size of the ditch or swale to restore capacity.

Maximum slope and velocity reduction is achieved when the toe of the upstream dam is at the same elevation as the top of the downstream dam (see "Spacing Between Check Dams" detail at the end of this fact sheet). The center section of the dam should be lower than the edge sections (at least 6 inches), acting as a spillway, so that the check dam will direct flows to the center of

the ditch or swale (see "Typical Rock Check Dam" detail at the end of this fact sheet). Bypass or side-cutting can occur if a sufficient spillway is not provided in the center of the dam.

Check dams are usually constructed of rock, gravel bags, sandbags, and fiber rolls. A number of products can also be used as check dams (e.g. HDPE check dams, temporary silt dikes (SE-12)), and some of these products can be removed and reused. Check dams can also be constructed of logs or lumber, and have the advantage of a longer lifespan when compared to gravel bags, sandbags, and fiber rolls. Check dams should not be constructed from straw bales or silt fences, since concentrated flows quickly wash out these materials.

Rock check dams are usually constructed of 8 to 12 in. rock. The rock is placed either by hand or mechanically, but never just dumped into the channel. The dam should completely span the ditch or swale to prevent washout. The rock used should be large enough to stay in place given the expected design flow through the channel. It is recommended that abutments be extended 18 in. into the channel bank. Rock can be graded such that smaller diameter rock (e.g. 2-4 in) is located on the upstream side of larger rock (holding the smaller rock in place); increasing residence time.

Log check dams are usually constructed of 4 to 6 in. diameter logs, installed vertically. The logs should be embedded into the soil at least 18 in. Logs can be bolted or wired to vertical support logs that have been driven or buried into the soil.

See fiber rolls, SE-5, for installation of fiber roll check dams.

Gravel bag and sand bag check dams are constructed by stacking bags across the ditch or swale, shaped as shown in the drawings at the end of this fact sheet (see "Gravel Bag Check Dam" detail at the end of this fact sheet).

Manufactured products, such as temporary silt dikes (SE-12), should be installed in accordance with the manufacturer's instructions. Installation typically requires anchoring or trenching of products, as well as regular maintenance to remove accumulated sediment and debris.

If grass is planted to stabilize the ditch or swale, the check dam should be removed when the grass has matured (unless the slope of the swales is greater than 4%).

The following guidance should be followed for the design and layout of check dams:

- Install the first check dam approximately 16 ft from the outfall device and at regular intervals based on slope gradient and soil type.
- Check dams should be placed at a distance and height to allow small pools to form between each check dam.
- For multiple check dam installation, backwater from a downstream check dam should reach the toes of the upstream check dam.
- A sediment trap provided immediately upstream of the check dam will help capture sediment. Due to the potential for this sediment to be resuspended in subsequent storms, the sediment trap should be cleaned following each storm event.

- High flows (typically a 2-year storm or larger) should safely flow over the check dam without an increase in upstream flooding or damage to the check dam.
- Where grass is used to line ditches, check dams should be removed when grass has matured sufficiently to protect the ditch or swale.

Materials

- Rock used for check dams should typically be 8-12 in rock and be sufficiently sized to stay in place given expected design flows in the channel. Smaller diameter rock (e.g. 2 to 4 in) can be placed on the upstream side of larger rock to increase residence time.
- Gravel bags used for check dams should conform to the requirements of SE-6, Gravel Bag Berms.
- Sandbags used for check dams should conform to SE-8, Sandbag Barrier.
- Fiber rolls used for check dams should conform to SE-5, Fiber Rolls.
- Temporary silt dikes used for check dams should conform to SE-12, Temporary Silt Dikes.

Installation

- Rock should be placed individually by hand or by mechanical methods (no dumping of rock) to achieve complete ditch or swale coverage.
- Tightly abut bags and stack according to detail shown in the figure at the end of this section (pyramid approach). Gravel bags and sandbags should not be stacked any higher than 3 ft.
- Upper rows or gravel and sand bags shall overlap joints in lower rows.
- Fiber rolls should be trenched in, backfilled, and firmly staked in place.
- Install along a level contour.
- HDPE check dams, temporary silt dikes, and other manufactured products should be used and installed per manufacturer specifications.

Costs

Cost consists of labor costs if materials are readily available (such as gravel on-site). If material must be imported, costs will increase. For other material and installation costs, see SE-5, SE-6, SE-8, SE-12, and SE-14.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Replace missing rock, bags, rolls, etc. Replace bags or rolls that have degraded or have become damaged.

- If the check dam is used as a sediment capture device, sediment that accumulates behind the BMP should be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height.
- If the check dam is used as a grade control structure, sediment removal is not required as long as the system continues to control the grade.
- Inspect areas behind check dams for pools of standing water, especially if subjected to daily non-stormwater discharges.
- Remove accumulated sediment prior to permanent seeding or soil stabilization.
- Remove check dam and accumulated sediment when check dams are no longer needed.

References

Draft – Sedimentation and Erosion Control, and Inventory of Current Practices, USEPA, April 1990.

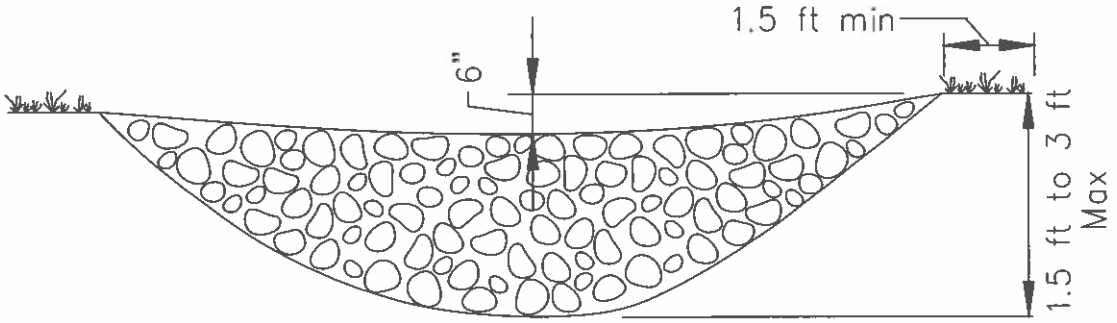
Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, May 1995.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

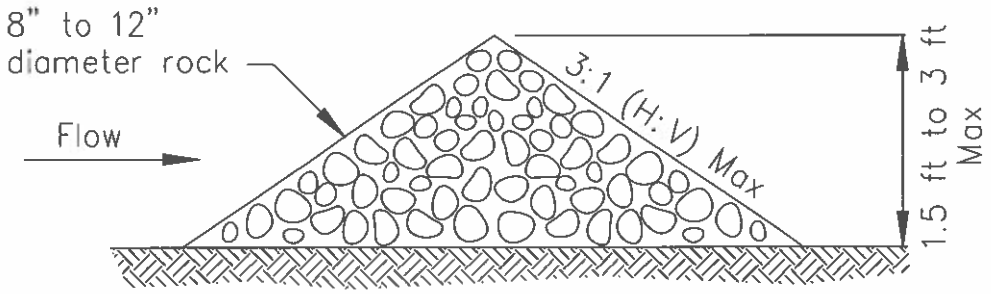
Stormwater Management of the Puget Sound Basin, Technical Manual, Publication #91-75, Washington State Department of Ecology, February 1992.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

Metzger, M.E. 2004. Managing mosquitoes in stormwater treatment devices. University of California Division of Agriculture and Natural Resources, Publication 8125. On-line: http://anrcatalog.ucdavis.edu/pdf/8125.pdf

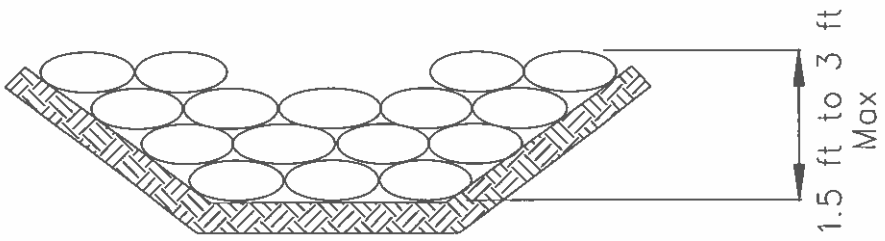


ELEVATION

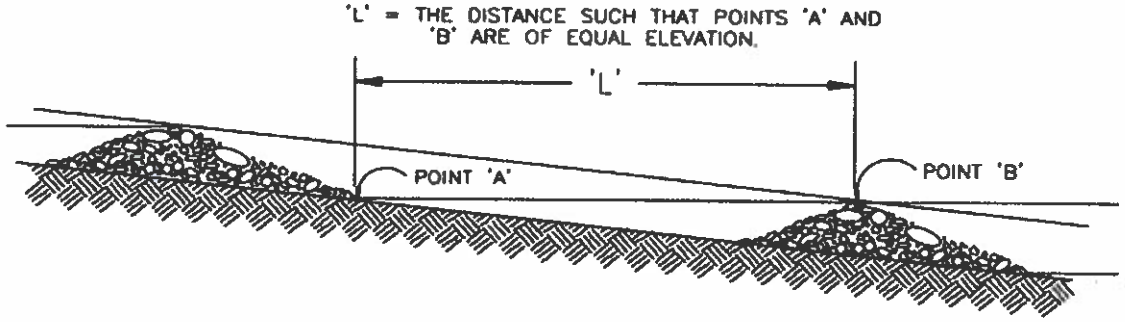


TYPICAL ROCK CHECK DAM SECTION

ROCK CHECK DAM
NOT TO SCALE



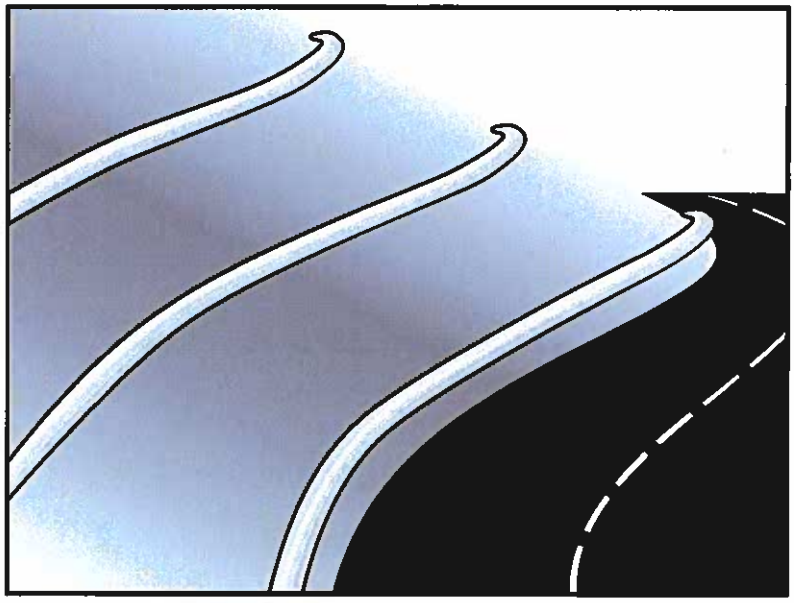
GRAVEL BAG CHECK DAM ELEVATION
NOT TO SCALE



SPACING BETWEEN CHECK DAMS

Fiber Rolls

SE-5



Categories

EC	Erosion Control	☒
SE	Sediment Control	☑
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Category**

☒ **Secondary Category**

Description and Purpose

A fiber roll consists of straw, coir, or other biodegradable materials bound into a tight tubular roll wrapped by netting, which can be photodegradable or natural. Additionally, gravel core fiber rolls are available, which contain an imbedded ballast material such as gravel or sand for additional weight when staking the rolls are not feasible (such as use as inlet protection). When fiber rolls are placed at the toe and on the face of slopes along the contours, they intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide removal of sediment from the runoff (through sedimentation). By interrupting the length of a slope, fiber rolls can also reduce sheet and rill erosion until vegetation is established.

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

SE-1 Silt Fence

SE-6 Gravel Bag Berm

SE-8 Sandbag Barrier

SE-14 Biofilter Bags

Suitable Applications

Fiber rolls may be suitable:

- Along the toe, top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow.
- At the end of a downward slope where it transitions to a steeper slope.
- Along the perimeter of a project.
- As check dams in unlined ditches with minimal grade.
- Down-slope of exposed soil areas.
- At operational storm drains as a form of inlet protection.

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- Around temporary stockpiles.

Limitations

- Fiber rolls are not effective unless trenched in and staked.
- Not intended for use in high flow situations.
- Difficult to move once saturated.
- If not properly staked and trenched in, fiber rolls could be transported by high flows.
- Fiber rolls have a very limited sediment capture zone.
- Fiber rolls should not be used on slopes subject to creep, slumping, or landslide.
- Rolls typically function for 12-24 months depending upon local conditions.

Implementation

Fiber Roll Materials

- Fiber rolls should be prefabricated.
- Fiber rolls may come manufactured containing polyacrylamide (PAM), a flocculating agent within the roll. Fiber rolls impregnated with PAM provide additional sediment removal capabilities and should be used in areas with fine, clayey or silty soils to provide additional sediment removal capabilities. Monitoring may be required for these installations.
- Fiber rolls are made from weed free rice straw, flax, or a similar agricultural material bound into a tight tubular roll by netting.
- Typical fiber rolls vary in diameter from 9 in. to 20 in. Larger diameter rolls are available as well.

Installation

- Locate fiber rolls on level contours spaced as follows:
  - Slope inclination of 4:1 (H:V) or flatter: Fiber rolls should be placed at a maximum interval of 20 ft.
  - Slope inclination between 4:1 and 2:1 (H:V): Fiber Rolls should be placed at a maximum interval of 15 ft. (a closer spacing is more effective).
  - Slope inclination 2:1 (H:V) or greater: Fiber Rolls should be placed at a maximum interval of 10 ft. (a closer spacing is more effective).
- Prepare the slope before beginning installation.
- Dig small trenches across the slope on the contour. The trench depth should be ¼ to 1/3 of the thickness of the roll, and the width should equal the roll diameter, in order to provide area to backfill the trench.

- It is critical that rolls are installed perpendicular to water movement, and parallel to the slope contour.
- Start building trenches and installing rolls from the bottom of the slope and work up.
- It is recommended that pilot holes be driven through the fiber roll. Use a straight bar to drive holes through the roll and into the soil for the wooden stakes.
- Turn the ends of the fiber roll up slope to prevent runoff from going around the roll.
- Stake fiber rolls into the trench.
  - Drive stakes at the end of each fiber roll and spaced 4 ft maximum on center.
  - Use wood stakes with a nominal classification of 0.75 by 0.75 in. and minimum length of 24 in.
- If more than one fiber roll is placed in a row, the rolls should be overlapped, not abutted.
- See typical fiber roll installation details at the end of this fact sheet.

Removal

- Fiber rolls can be left in place or removed depending on the type of fiber roll and application (temporary vs. permanent installation). Typically, fiber rolls encased with plastic netting are used for a temporary application because the netting does not biodegrade. Fiber rolls used in a permanent application are typically encased with a biodegradeable material and are left in place. Removal of a fiber roll used in a permanent application can result in greater disturbance.
- Temporary installations should only be removed when up gradient areas are stabilized per General Permit requirements, and/or pollutant sources no longer present a hazard. But, they should also be removed before vegetation becomes too mature so that the removal process does not disturb more soil and vegetation than is necessary.

Costs

Material costs for regular fiber rolls range from $20 - $30 per 25 ft roll.

Material costs for PAM impregnated fiber rolls range between 7.00-$9.00 per linear foot, based upon vendor research.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Repair or replace split, torn, unraveling, or slumping fiber rolls.
- If the fiber roll is used as a sediment capture device, or as an erosion control device to maintain sheet flows, sediment that accumulates in the BMP should be periodically removed

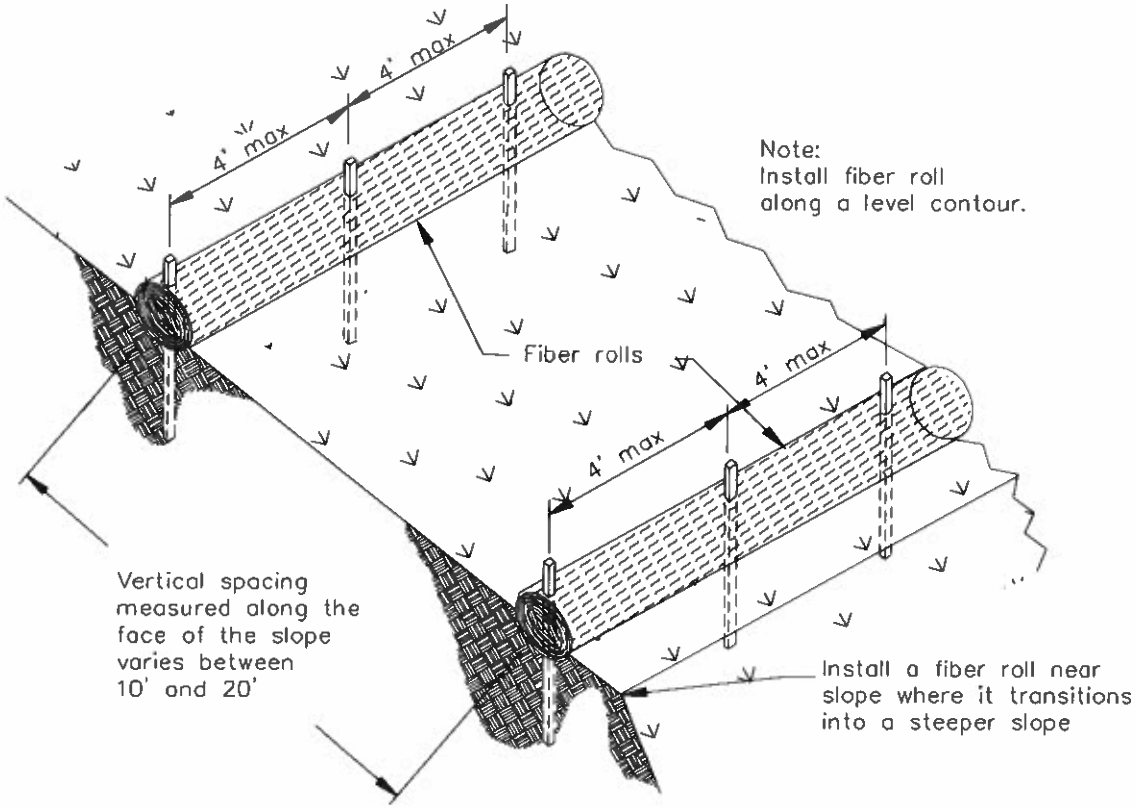
in order to maintain BMP effectiveness. Sediment should be removed when sediment accumulation reaches one-third the designated sediment storage depth.

- If fiber rolls are used for erosion control, such as in a check dam, sediment removal should not be required as long as the system continues to control the grade. Sediment control BMPs will likely be required in conjunction with this type of application.
- Repair any rills or gullies promptly.

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.



TYPICAL FIBER ROLL INSTALLATION
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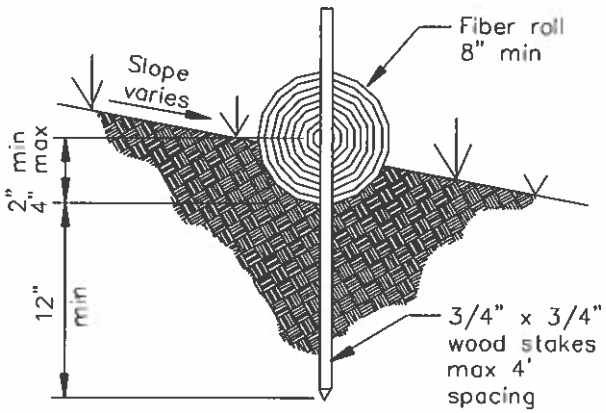
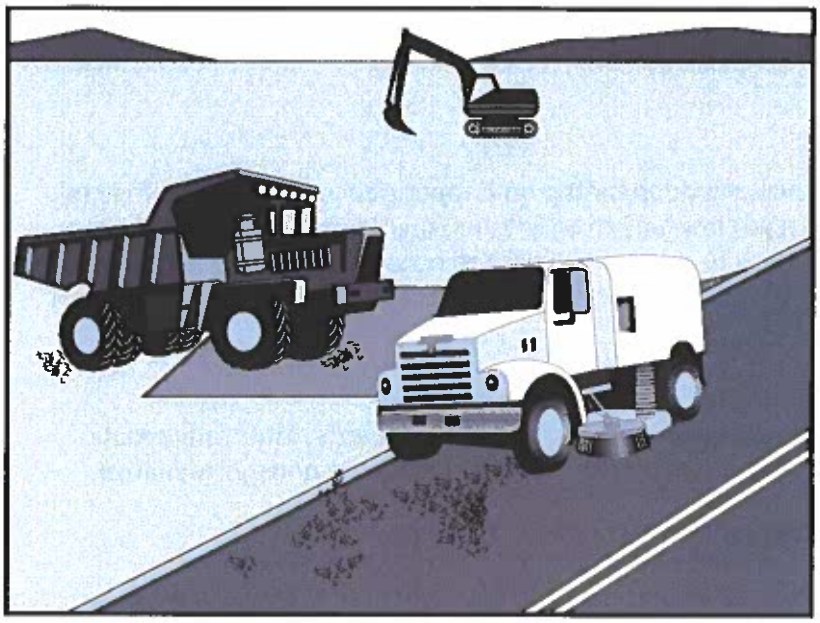


ENTRENCHMENT DETAIL
N.T.S.

Street Sweeping and Vacuuming SE-7



Categories

EC	Erosion Control	
SE	Sediment Control	☒
TC	Tracking Control	☑
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	☑
Metals	
Bacteria	
Oil and Grease	☑
Organics	

Potential Alternatives

None

Description and Purpose

Street sweeping and vacuuming includes use of self-propelled and walk-behind equipment to remove sediment from streets and roadways, and to clean paved surfaces in preparation for final paving. Sweeping and vacuuming prevents sediment from the project site from entering storm drains or receiving waters.

Suitable Applications

Sweeping and vacuuming are suitable anywhere sediment is tracked from the project site onto public or private paved streets and roads, typically at points of egress. Sweeping and vacuuming are also applicable during preparation of paved surfaces for final paving.

Limitations

Sweeping and vacuuming may not be effective when sediment is wet or when tracked soil is caked (caked soil may need to be scraped loose).

Implementation

- Controlling the number of points where vehicles can leave the site will allow sweeping and vacuuming efforts to be focused, and perhaps save money.
- Inspect potential sediment tracking locations daily.
- Visible sediment tracking should be swept or vacuumed on a daily basis.
- Do not use kick brooms or sweeper attachments. These tend to spread the dirt rather than remove it.

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- If not mixed with debris or trash, consider incorporating the removed sediment back into the project

Costs

Rental rates for self-propelled sweepers vary depending on hopper size and duration of rental. Expect rental rates from $58/hour (3 yd^3 hopper) to $88/hour (9 yd^3 hopper), plus operator costs. Hourly production rates vary with the amount of area to be swept and amount of sediment. Match the hopper size to the area and expect sediment load to minimize time spent dumping.

Inspection and Maintenance

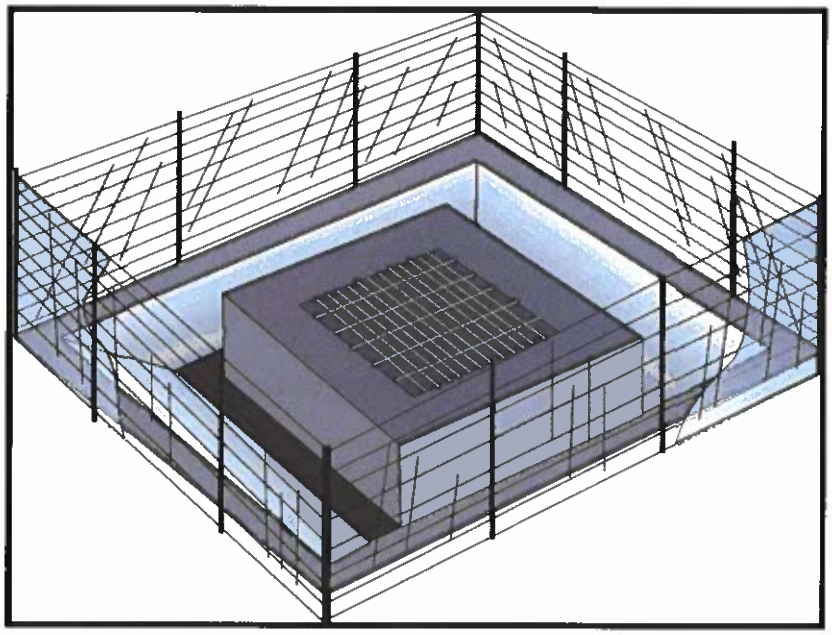
- Inspect BMPs prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season.
- When actively in use, points of ingress and egress must be inspected daily.
- When tracked or spilled sediment is observed outside the construction limits, it must be removed at least daily. More frequent removal, even continuous removal, may be required in some jurisdictions.
- Be careful not to sweep up any unknown substance or any object that may be potentially hazardous.
- Adjust brooms frequently; maximize efficiency of sweeping operations.
- After sweeping is finished, properly dispose of sweeper wastes at an approved dumpsite.

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Labor Surcharge and Equipment Rental Rates, State of California Department of Transportation (Caltrans), April 1, 2002 – March 31, 2003.

Storm Drain Inlet Protection SE-10



Categories

EC	Erosion Control	
SE	Sediment Control	☑
TC	Tracking Control	
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WM	Waste Management and Materials Pollution Control	

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	☒
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

SE-1 Silt Fence
SE-5 Fiber Rolls
SE-6 Gravel Bag Berm
SE-8 Sandbag Barrier
SE-14 Biofilter Bags

Description and Purpose

Storm drain inlet protection consists of a sediment filter or an impounding area in, around or upstream of a storm drain, drop inlet, or curb inlet. Storm drain inlet protection measures temporarily pond runoff before it enters the storm drain, allowing sediment to settle. Some filter configurations also remove sediment by filtering, but usually the ponding action results in the greatest sediment reduction. Temporary geotextile storm drain inserts attach underneath storm drain grates to capture and filter storm water.

Suitable Applications

Every storm drain inlet receiving runoff from unstabilized or otherwise active work areas should be protected. Inlet protection should be used in conjunction with other erosion and sediment controls to prevent sediment-laden stormwater and non-stormwater discharges from entering the storm drain system.

Limitations

- Drainage area should not exceed 1 acre.
- In general straw bales should not be used as inlet protection.
- Requires an adequate area for water to pond without encroaching into portions of the roadway subject to traffic.

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- Sediment removal may be inadequate to prevent sediment discharges in high flow conditions or if runoff is heavily sediment laden. If high flow conditions are expected, use other onsite sediment trapping techniques in conjunction with inlet protection.
- Frequent maintenance is required.
- Limit drainage area to 1 acre maximum. For drainage areas larger than 1 acre, runoff should be routed to a sediment-trapping device designed for larger flows. See BMPs SE-2, Sediment Basin, and SE-3, Sediment Traps.
- Excavated drop inlet sediment traps are appropriate where relatively heavy flows are expected, and overflow capability is needed.

Implementation

General

Inlet control measures presented in this handbook should not be used for inlets draining more than one acre. Runoff from larger disturbed areas should be first routed through SE-2, Sediment Basin or SE-3, Sediment Trap and/or used in conjunction with other drainage control, erosion control, and sediment control BMPs to protect the site. Different types of inlet protection are appropriate for different applications depending on site conditions and the type of inlet. Alternative methods are available in addition to the methods described/shown herein such as prefabricated inlet insert devices, or gutter protection devices.

Design and Layout

Identify existing and planned storm drain inlets that have the potential to receive sediment-laden surface runoff. Determine if storm drain inlet protection is needed and which method to use.

- The key to successful and safe use of storm drain inlet protection devices is to know where runoff that is directed toward the inlet to be protected will pond or be diverted as a result of installing the protection device.
  - Determine the acceptable location and extent of ponding in the vicinity of the drain inlet. The acceptable location and extent of ponding will influence the type and design of the storm drain inlet protection device.
  - Determine the extent of potential runoff diversion caused by the storm drain inlet protection device. Runoff ponded by inlet protection devices may flow around the device and towards the next downstream inlet. In some cases, this is acceptable; in other cases, serious erosion or downstream property damage can be caused by these diversions. The possibility of runoff diversions will influence whether or not storm drain inlet protection is suitable; and, if suitable, the type and design of the device.
- The location and extent of ponding, and the extent of diversion, can usually be controlled through appropriate placement of the inlet protection device. In some cases, moving the inlet protection device a short distance upstream of the actual inlet can provide more efficient sediment control, limit ponding to desired areas, and prevent or control diversions.

- Six types of inlet protection are presented below. However, it is recognized that other effective methods and proprietary devices exist and may be selected.
  - Silt Fence: Appropriate for drainage basins with less than a 5% slope, sheet flows, and flows under 0.5 cfs.
  - Excavated Drop Inlet Sediment Trap: An excavated area around the inlet to trap sediment (SE-3).
  - Gravel bag barrier: Used to create a small sediment trap upstream of inlets on sloped, paved streets. Appropriate for sheet flow or when concentrated flow may exceed 0.5 cfs, and where overtopping is required to prevent flooding.
  - Block and Gravel Filter: Appropriate for flows greater than 0.5 cfs.
  - Temporary Geotextile Storm drain Inserts: Different products provide different features. Refer to manufacturer details for targeted pollutants and additional features.
  - Biofilter Bag Barrier: Used to create a small retention area upstream of inlets and can be located on pavement or soil. Biofilter bags slowly filter runoff allowing sediment to settle out. Appropriate for flows under 0.5 cfs.
- Select the appropriate type of inlet protection and design as referred to or as described in this fact sheet.
- Provide area around the inlet for water to pond without flooding structures and property.
- Grates and spaces around all inlets should be sealed to prevent seepage of sediment-laden water.
- Excavate sediment sumps (where needed) 1 to 2 ft with 2:1 side slopes around the inlet.

Installation

- ***DI Protection Type 1 - Silt Fence*** - Similar to constructing a silt fence; see BMP SE-1, Silt Fence. Do not place fabric underneath the inlet grate since the collected sediment may fall into the drain inlet when the fabric is removed or replaced and water flow through the grate will be blocked resulting in flooding. See typical Type 1 installation details at the end of this fact sheet.
  1. Excavate a trench approximately 6 in. wide and 6 in. deep along the line of the silt fence inlet protection device.
  2. Place 2 in. by 2 in. wooden stakes around the perimeter of the inlet a maximum of 3 ft apart and drive them at least 18 in. into the ground or 12 in. below the bottom of the trench. The stakes should be at least 48 in.
  3. Lay fabric along bottom of trench, up side of trench, and then up stakes. See SE-1, Silt Fence, for details. The maximum silt fence height around the inlet is 24 in.
  4. Staple the filter fabric (for materials and specifications, see SE-1, Silt Fence) to wooden stakes. Use heavy-duty wire staples at least 1 in. in length.

5. Backfill the trench with gravel or compacted earth all the way around.

- ***DI Protection Type 2 - Excavated Drop Inlet Sediment Trap*** - Install filter fabric fence in accordance with DI Protection Type 1. Size excavated trap to provide a minimum storage capacity calculated at the rate 67 yd^3/acre of drainage area. See typical Type 2 installation details at the end of this fact sheet.

- ***DI Protection Type 3 - Gravel bag*** - Flow from a severe storm should not overtop the curb. In areas of high clay and silts, use filter fabric and gravel as additional filter media. Construct gravel bags in accordance with SE-6, Gravel Bag Berm. Gravel bags should be used due to their high permeability. See typical Type 3 installation details at the end of this fact sheet.

  1. Construct on gently sloping street.

  2. Leave room upstream of barrier for water to pond and sediment to settle.

  3. Place several layers of gravel bags – overlapping the bags and packing them tightly together.

  4. Leave gap of one bag on the top row to serve as a spillway. Flow from a severe storm (e.g., 10 year storm) should not overtop the curb.

- ***DI Protection Type 4 – Block and Gravel Filter*** - Block and gravel filters are suitable for curb inlets commonly used in residential, commercial, and industrial construction. See typical Type 4 installation details at the end of this fact sheet.

  1. Place hardware cloth or comparable wire mesh with 0.5 in. openings over the drop inlet so that the wire extends a minimum of 1 ft beyond each side of the inlet structure. If more than one strip is necessary, overlap the strips. Place woven geotextile over the wire mesh.

  2. Place concrete blocks lengthwise on their sides in a single row around the perimeter of the inlet, so that the open ends face outward, not upward. The ends of adjacent blocks should abut. The height of the barrier can be varied, depending on design needs, by stacking combinations of blocks that are 4 in., 8 in., and 12 in. wide. The row of blocks should be at least 12 in. but no greater than 24 in. high.

  3. Place wire mesh over the outside vertical face (open end) of the concrete blocks to prevent stone from being washed through the blocks. Use hardware cloth or comparable wire mesh with 0.5 in. opening.

  4. Pile washed stone against the wire mesh to the top of the blocks. Use 0.75 to 3 in.

- ***DI Protection Type 5 – Temporary Geotextile Insert (proprietary)*** – Many types of temporary inserts are available. Most inserts fit underneath the grate of a drop inlet or inside of a curb inlet and are fastened to the outside of the grate or curb. These inserts are removable and many can be cleaned and reused. Installation of these inserts differs between manufacturers. Please refer to manufacturer instruction for installation of proprietary devices.

- ***DI Protection Type 6 - Biofilter bags*** – Biofilter bags may be used as a substitute for gravel bags in low-flow situations. Biofilter bags should conform to specifications detailed in SE-14, Biofilter bags.

    1. Construct in a gently sloping area.
    2. Biofilter bags should be placed around inlets to intercept runoff flows.
    3. All bag joints should overlap by 6 in.
    4. Leave room upstream for water to pond and for sediment to settle out.
    5. Stake bags to the ground as described in the following detail. Stakes may be omitted if bags are placed on a paved surface.

Costs

- Average annual cost for installation and maintenance of DI Type 1-4 and 6 (one year useful life) is $200 per inlet.
- Temporary geotextile inserts are proprietary and cost varies by region. These inserts can often be reused and may have greater than 1 year of use if maintained and kept undamaged. Average cost per insert ranges from $50-75 plus installation, but costs can exceed $100. This cost does not include maintenance.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Silt Fences. If the fabric becomes clogged, torn, or degrades, it should be replaced. Make sure the stakes are securely driven in the ground and are in good shape (i.e., not bent, cracked, or splintered, and are reasonably perpendicular to the ground). Replace damaged stakes. At a minimum, remove the sediment behind the fabric fence when accumulation reaches one-third the height of the fence or barrier height.
- Gravel Filters. If the gravel becomes clogged with sediment, it should be carefully removed from the inlet and either cleaned or replaced. Since cleaning gravel at a construction site may be difficult, consider using the sediment-laden stone as fill material and put fresh stone around the inlet. Inspect bags for holes, gashes, and snags, and replace bags as needed. Check gravel bags for proper arrangement and displacement.
- Sediment that accumulates in the BMP should be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height.
- Inspect and maintain temporary geotextile insert devices according to manufacturer's specifications.
- Remove storm drain inlet protection once the drainage area is stabilized.

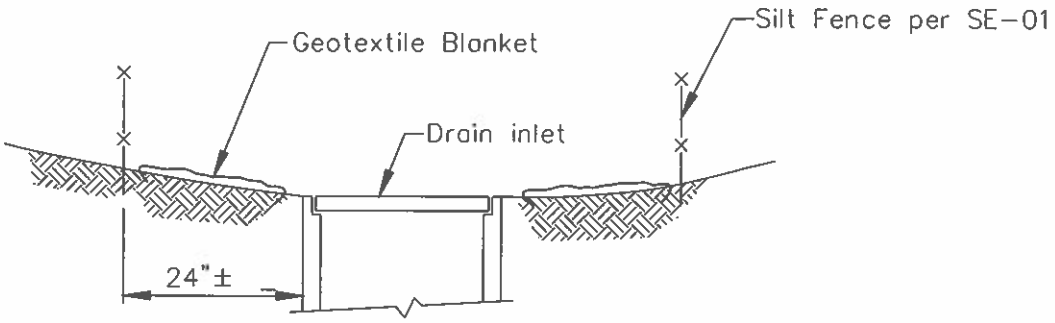
- Clean and regrade area around the inlet and clean the inside of the storm drain inlet, as it should be free of sediment and debris at the time of final inspection.

References

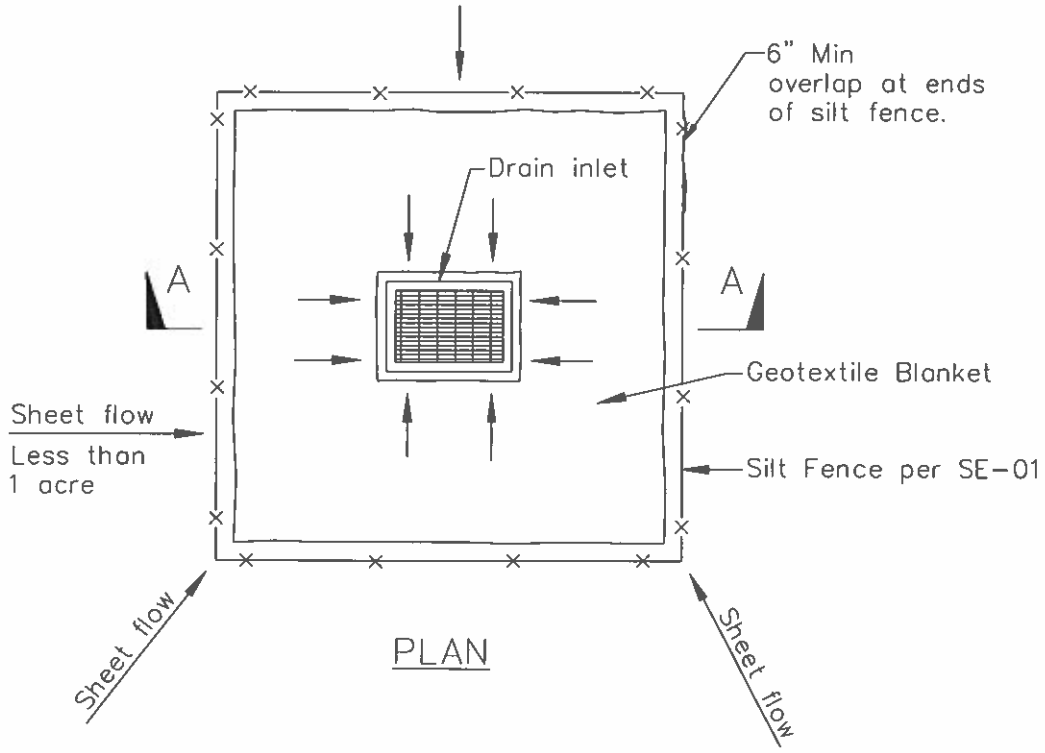
Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Stormwater Management Manual for The Puget Sound Basin, Washington State Department of Ecology, Public Review Draft, 1991.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.



SECTION A–A

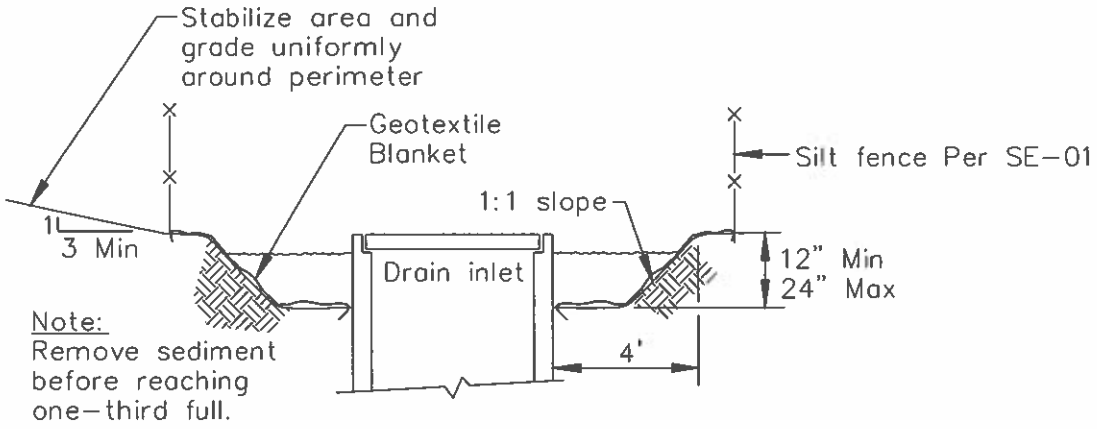


PLAN

DI PROTECTION TYPE 1
NOT TO SCALE

NOTES:

1. For use in areas where grading has been completed and final soil stabilization and seeding are pending.
2. Not applicable in paved areas.
3. Not applicable with concentrated flows.



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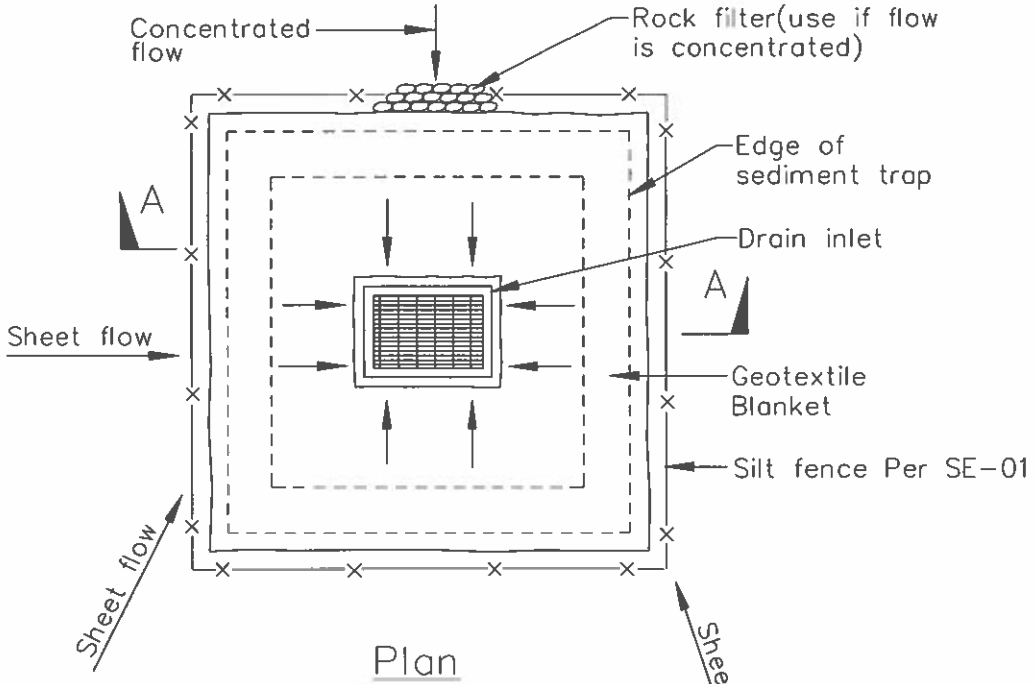
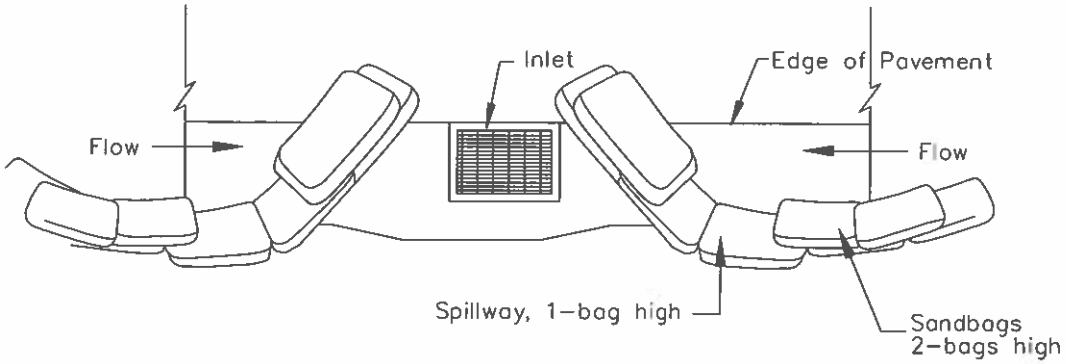


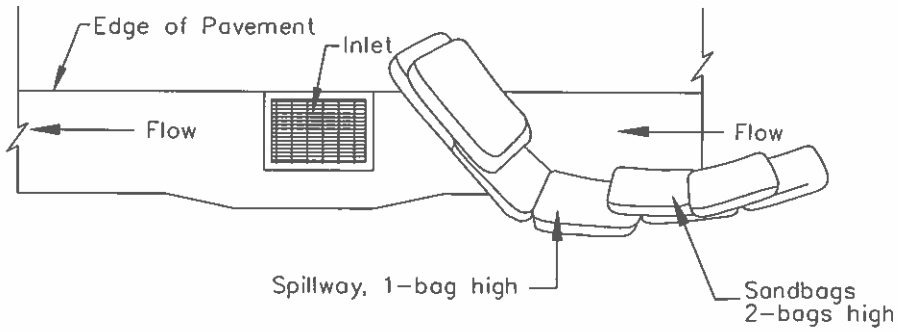
Plan

DI PROTECTION TYPE 2
NOT TO SCALE

Notes
1. For use in cleared and grubbed and in graded areas.
2. Shape basin so that longest inflow area faces longest length of trap.
3. For concentrated flows, shape basin in 2:1 ratio with length oriented towards direction of flow.



TYPICAL PROTECTION FOR INLET ON SUMP

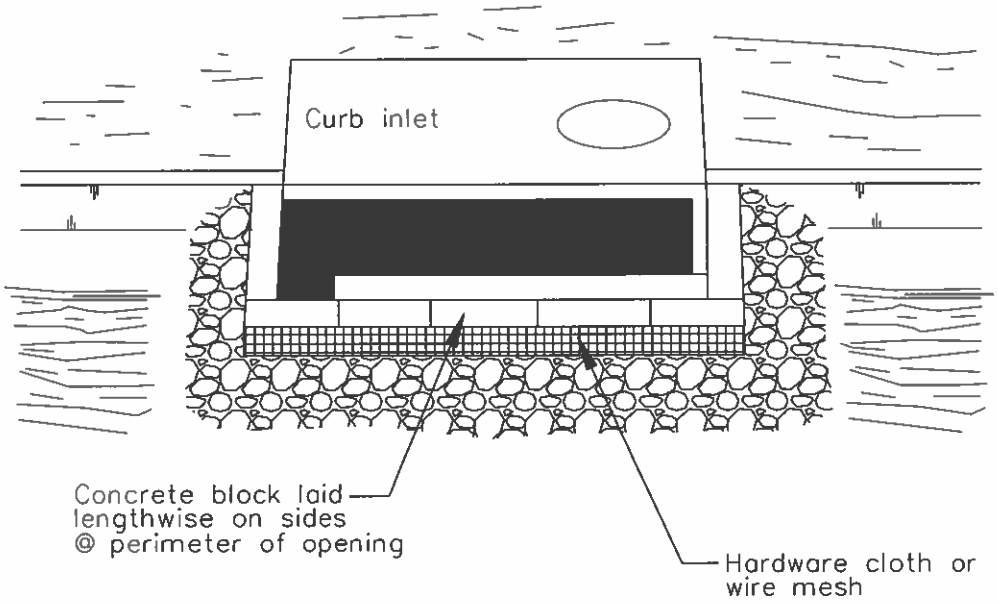


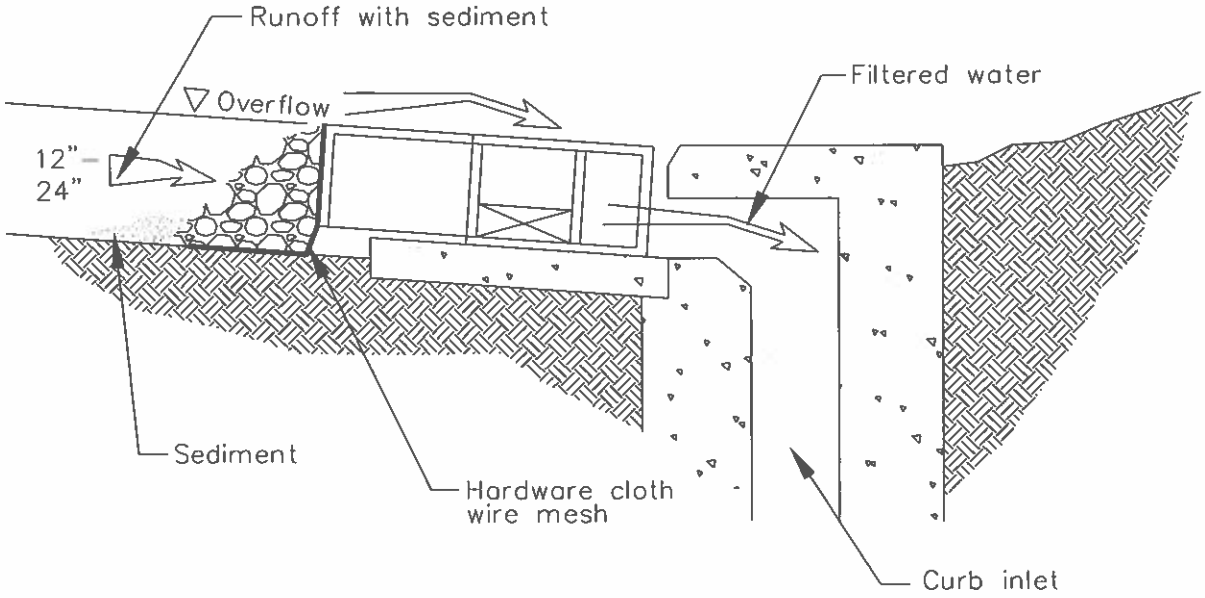
TYPICAL PROTECTION FOR INLET ON GRADE

NOTES:

1. Intended for short-term use.
2. Use to inhibit non-storm water flow.
3. Allow for proper maintenance and cleanup.
4. Bags must be removed after adjacent operation is completed
5. Not applicable in areas with high silts and clays without filter fabric.

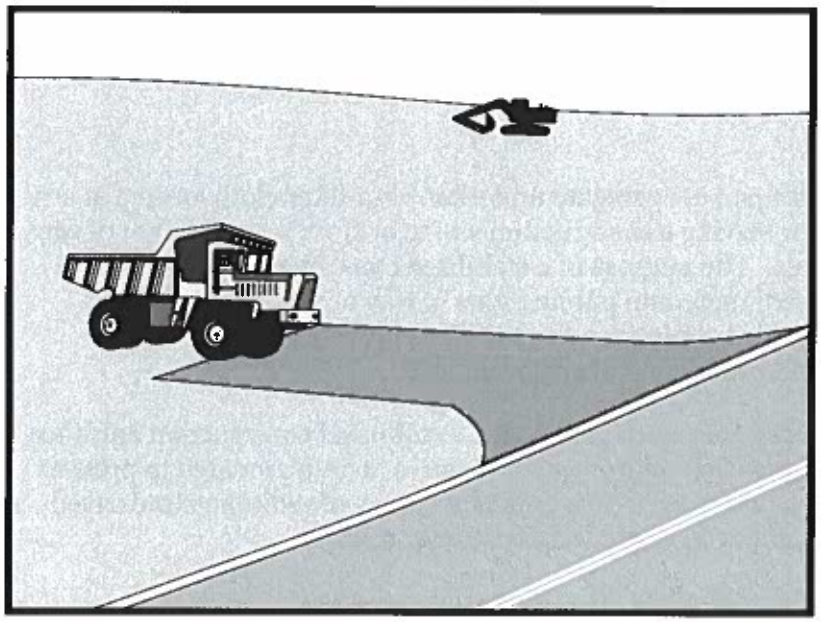
DI PROTECTION TYPE 3
NOT TO SCALE





DI PROTECTION – TYPE 4
NOT TO SCALE

Stabilized Construction Entrance/Exit TC-1



Categories

EC	Erosion Control	☒
SE	Sediment Control	☒
TC	Tracking Control	☑
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

Description and Purpose

A stabilized construction access is defined by a point of entrance/exit to a construction site that is stabilized to reduce the tracking of mud and dirt onto public roads by construction vehicles.

Suitable Applications

Use at construction sites:

- Where dirt or mud can be tracked onto public roads.
- Adjacent to water bodies.
- Where poor soils are encountered.
- Where dust is a problem during dry weather conditions.

Limitations

- Entrances and exits require periodic top dressing with additional stones.
- This BMP should be used in conjunction with street sweeping on adjacent public right of way.
- Entrances and exits should be constructed on level ground only.
- Stabilized construction entrances are rather expensive to construct and when a wash rack is included, a sediment trap of some kind must also be provided to collect wash water

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runoff.

Implementation

General

A stabilized construction entrance is a pad of aggregate underlain with filter cloth located at any point where traffic will be entering or leaving a construction site to or from a public right of way, street, alley, sidewalk, or parking area. The purpose of a stabilized construction entrance is to reduce or eliminate the tracking of sediment onto public rights of way or streets. Reducing tracking of sediments and other pollutants onto paved roads helps prevent deposition of sediments into local storm drains and production of airborne dust.

Where traffic will be entering or leaving the construction site, a stabilized construction entrance should be used. NPDES permits require that appropriate measures be implemented to prevent tracking of sediments onto paved roadways, where a significant source of sediments is derived from mud and dirt carried out from unpaved roads and construction sites.

Stabilized construction entrances are moderately effective in removing sediment from equipment leaving a construction site. The entrance should be built on level ground. Advantages of the Stabilized Construction Entrance/Exit is that it does remove some sediment from equipment and serves to channel construction traffic in and out of the site at specified locations. Efficiency is greatly increased when a washing rack is included as part of a stabilized construction entrance/exit.

Design and Layout

- Construct on level ground where possible.
- Select 3 to 6 in. diameter stones.
- Use minimum depth of stones of 12 in. or as recommended by soils engineer.
- Construct length of 50 ft minimum, and 30 ft minimum width.
- Rumble racks constructed of steel panels with ridges and installed in the stabilized entrance/exit will help remove additional sediment and to keep adjacent streets clean.
- Provide ample turning radii as part of the entrance.
- Limit the points of entrance/exit to the construction site.
- Limit speed of vehicles to control dust.
- Properly grade each construction entrance/exit to prevent runoff from leaving the construction site.
- Route runoff from stabilized entrances/exits through a sediment trapping device before discharge.
- Design stabilized entrance/exit to support heaviest vehicles and equipment that will use it.

Stabilized Construction Entrance/Exit TC-1

- Select construction access stabilization (aggregate, asphaltic concrete, concrete) based on longevity, required performance, and site conditions. Do not use asphalt concrete (AC) grindings for stabilized construction access/roadway.
- If aggregate is selected, place crushed aggregate over geotextile fabric to at least 12 in. depth, or place aggregate to a depth recommended by a geotechnical engineer. A crushed aggregate greater than 3 in. but smaller than 6 in. should be used.
- Designate combination or single purpose entrances and exits to the construction site.
- Require that all employees, subcontractors, and suppliers utilize the stabilized construction access.
- Implement SE-7, Street Sweeping and Vacuuming, as needed.
- All exit locations intended to be used for more than a two-week period should have stabilized construction entrance/exit BMPs.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMPs are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect local roads adjacent to the site daily. Sweep or vacuum to remove visible accumulated sediment.
- Remove aggregate, separate and dispose of sediment if construction entrance/exit is clogged with sediment.
- Keep all temporary roadway ditches clear.
- Check for damage and repair as needed.
- Replace gravel material when surface voids are visible.
- Remove all sediment deposited on paved roadways within 24 hours.
- Remove gravel and filter fabric at completion of construction

Costs

Average annual cost for installation and maintenance may vary from $1,200 to $4,800 each, averaging $2,400 per entrance. Costs will increase with addition of washing rack, and sediment trap. With wash rack, costs range from $1,200 - $6,000 each, averaging $3,600 per entrance.

References

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, May 1995.

National Management Measures to Control Nonpoint Source Pollution from Urban Areas, USEPA Agency, 2002.

Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, Work Group Working Paper, USEPA, April 1992.

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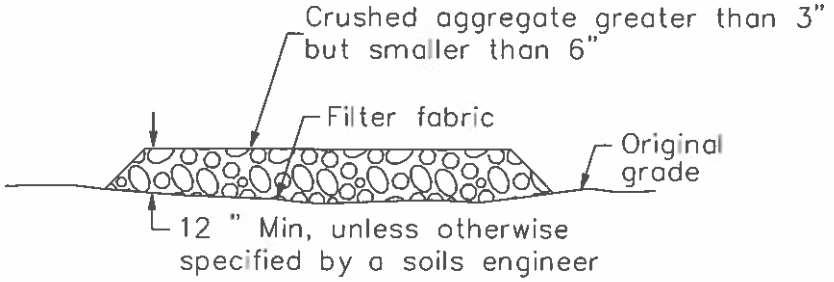
Stormwater Management of the Puget Sound Basin, Technical Manual, Publication #91-75, Washington State Department of Ecology, February 1992.

Virginia Erosion and Sedimentation Control Handbook, Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation, 1991.

Guidance Specifying Management Measures for Nonpoint Pollution in Coastal Waters, EPA 840-B-9-002, USEPA, Office of Water, Washington, DC, 1993.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency, November 1988.

Stabilized Construction Entrance/Exit TC-1



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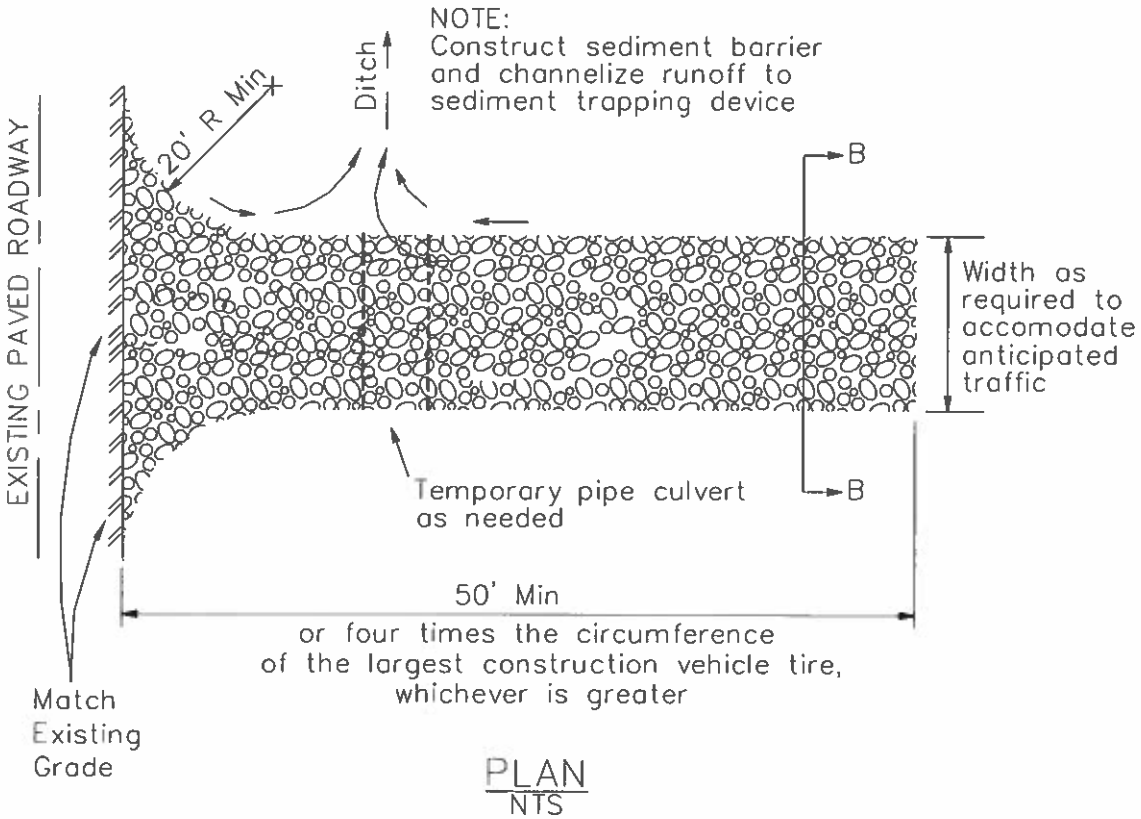
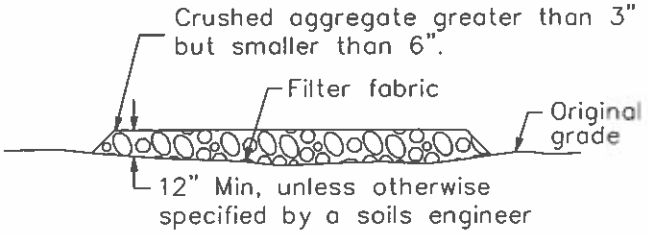


PLAN
NTS

Stabilized Construction Entrance/Exit TC-1



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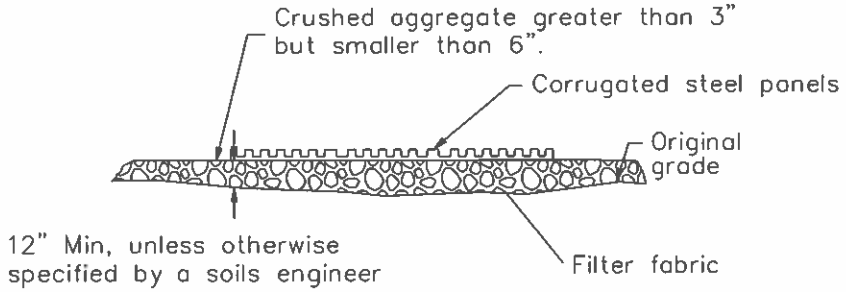

SECTION A–A
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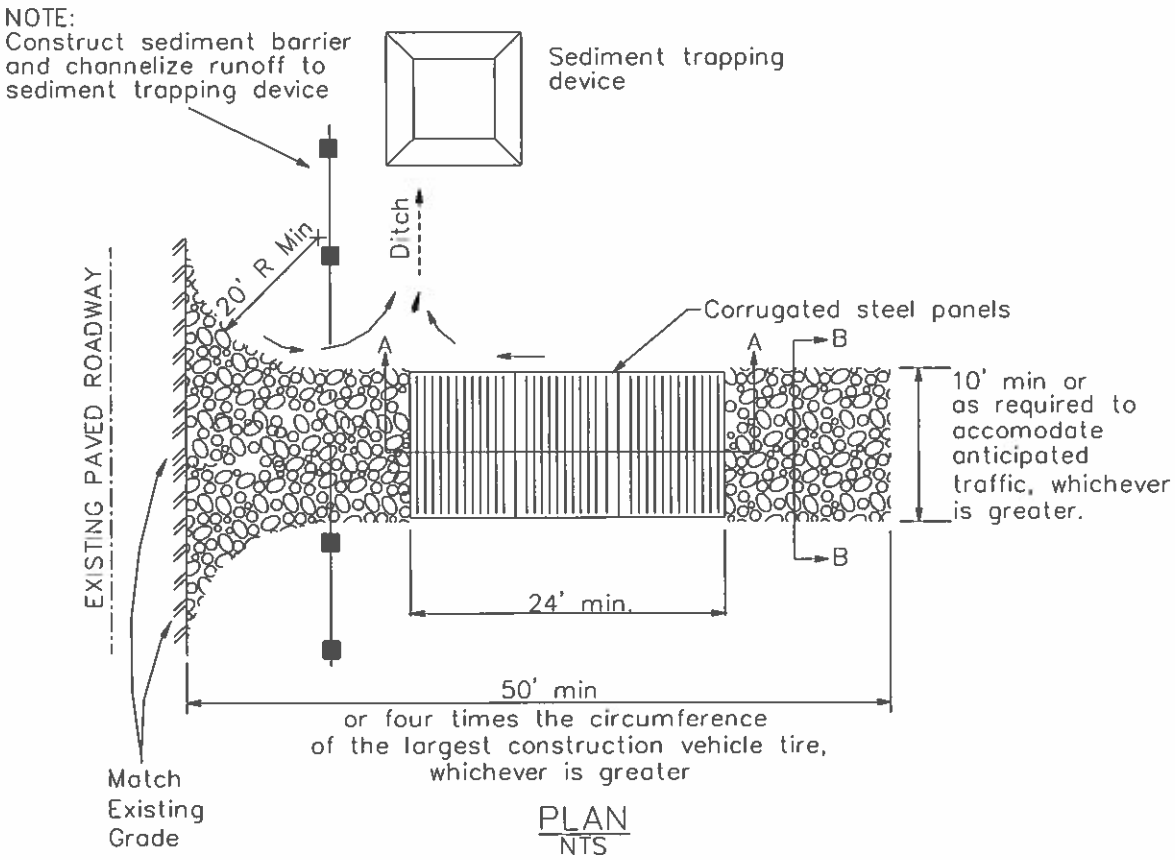

PLAN
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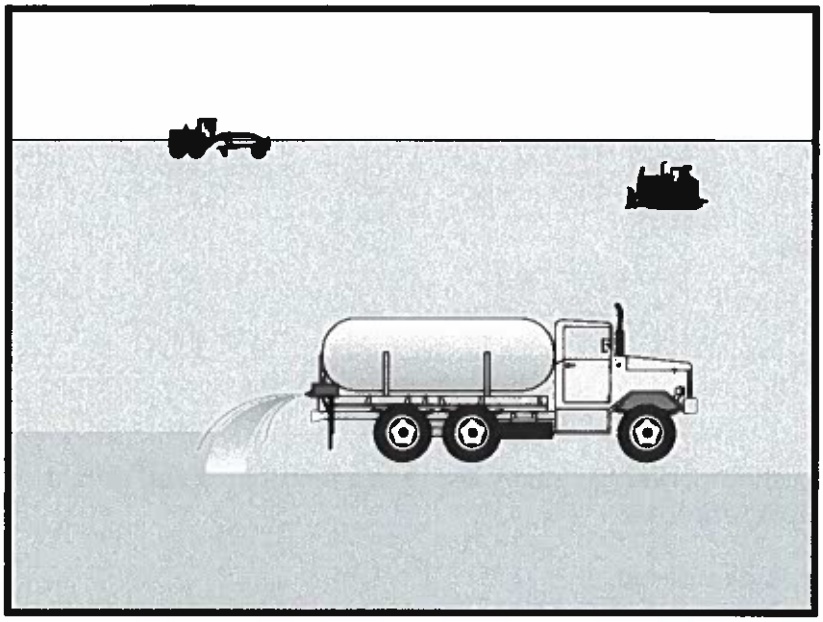
Wind Erosion Control WE-1



Categories

EC	Erosion Control	
SE	Sediment Control	☒
TC	Tracking Control	
WE	Wind Erosion Control	☑
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-5 Soil Binders

Description and Purpose

Wind erosion or dust control consists of applying water or other chemical dust suppressants as necessary to prevent or alleviate dust nuisance generated by construction activities. Covering small stockpiles or areas is an alternative to applying water or other dust palliatives.

California's Mediterranean climate, with a short "wet" season and a typically long, hot "dry" season, allows the soils to thoroughly dry out. During the dry season, construction activities are at their peak, and disturbed and exposed areas are increasingly subject to wind erosion, sediment tracking and dust generated by construction equipment. Site conditions and climate can make dust control more of an erosion problem than water based erosion. Additionally, many local agencies, including Air Quality Management Districts, require dust control and/or dust control permits in order to comply with local nuisance laws, opacity laws (visibility impairment) and the requirements of the Clean Air Act. Wind erosion control is required to be implemented at all construction sites greater than 1 acre by the General Permit.

Suitable Applications

Most BMPs that provide protection against water-based erosion will also protect against wind-based erosion and dust control requirements required by other agencies will generally meet wind erosion control requirements for water quality protection. Wind erosion control BMPs are suitable during the following construction activities:

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- Construction vehicle traffic on unpaved roads
- Drilling and blasting activities
- Soils and debris storage piles
- Batch drop from front-end loaders
- Areas with unstabilized soil
- Final grading/site stabilization

Limitations

- Watering prevents dust only for a short period (generally less than a few hours) and should be applied daily (or more often) to be effective.
- Over watering may cause erosion and track-out.
- Oil or oil-treated subgrade should not be used for dust control because the oil may migrate into drainageways and/or seep into the soil.
- Chemical dust suppression agents may have potential environmental impacts. Selected chemical dust control agents should be environmentally benign.
- Effectiveness of controls depends on soil, temperature, humidity, wind velocity and traffic.
- Chemical dust suppression agents should not be used within 100 feet of wetlands or water bodies.
- Chemically treated subgrades may make the soil water repellant, interfering with long-term infiltration and the vegetation/re-vegetation of the site. Some chemical dust suppressants may be subject to freezing and may contain solvents and should be handled properly.
- In compacted areas, watering and other liquid dust control measures may wash sediment or other constituents into the drainage system.
- If the soil surface has minimal natural moisture, the affected area may need to be pre-wetted so that chemical dust control agents can uniformly penetrate the soil surface.

Implementation

Dust Control Practices

Dust control BMPs generally stabilize exposed surfaces and minimize activities that suspend or track dust particles. The following table presents dust control practices that can be applied to varying site conditions that could potentially cause dust. For heavily traveled and disturbed areas, wet suppression (watering), chemical dust suppression, gravel asphalt surfacing, temporary gravel construction entrances, equipment wash-out areas, and haul truck covers can be employed as dust control applications. Permanent or temporary vegetation and mulching can be employed for areas of occasional or no construction traffic. Preventive measures include minimizing surface areas to be disturbed, limiting onsite vehicle traffic to 15 mph or less, and controlling the number and activity of vehicles on a site at any given time.

Chemical dust suppressants include: mulch and fiber based dust palliatives (e.g. paper mulch with gypsum binder), salts and brines (e.g. calcium chloride, magnesium chloride), non-petroleum based organics (e.g. vegetable oil, lignosulfonate), petroleum based organics (e.g. asphalt emulsion, dust oils, petroleum resins), synthetic polymers (e.g. polyvinyl acetate, vinyls, acrylic), clay additives (e.g. bentonite, montimorillonite) and electrochemical products (e.g. enzymes, ionic products).

Site Condition	Dust Control Practices							
	Permanent Vegetation	Mulching	Wet Suppression (Watering)	Chemical Dust Suppression	Gravel or Asphalt	Temporary Gravel Construction Entrances/Equipment Wash Down	Synthetic Covers	Minimize Extent of Disturbed Area
Disturbed Areas not Subject to Traffic	X	X	X	X	X			X
Disturbed Areas Subject to Traffic			X	X	X	X		X
Material Stockpiles		X	X	X			X	X
Demolition			X			X	X	
Clearing/ Excavation			X	X				X
Truck Traffic on Unpaved Roads			X	X	X	X	X	
Tracking					X	X		

Additional preventive measures include:

- Schedule construction activities to minimize exposed area (see EC-1, Scheduling).
- Quickly treat exposed soils using water, mulching, chemical dust suppressants, or stone/gravel layering.
- Identify and stabilize key access points prior to commencement of construction.
- Minimize the impact of dust by anticipating the direction of prevailing winds.
- Restrict construction traffic to stabilized roadways within the project site, as practicable.
- Water should be applied by means of pressure-type distributors or pipelines equipped with a spray system or hoses and nozzles that will ensure even distribution.
- All distribution equipment should be equipped with a positive means of shutoff.
- Unless water is applied by means of pipelines, at least one mobile unit should be available at all times to apply water or dust palliative to the project.
- If reclaimed waste water is used, the sources and discharge must meet California Department of Health Services water reclamation criteria and the Regional Water Quality

Control Board (RWQCB) requirements. Non-potable water should not be conveyed in tanks or drain pipes that will be used to convey potable water and there should be no connection between potable and non-potable supplies. Non-potable tanks, pipes, and other conveyances should be marked, "NON-POTABLE WATER - DO NOT DRINK."

- Pave or chemically stabilize access points where unpaved traffic surfaces adjoin paved roads.
- Provide covers for haul trucks transporting materials that contribute to dust.
- Provide for rapid clean up of sediments deposited on paved roads. Furnish stabilized construction road entrances and wheel wash areas.
- Stabilize inactive areas of construction sites using temporary vegetation or chemical stabilization methods.

For chemical stabilization, there are many products available for chemically stabilizing gravel roadways and stockpiles. If chemical stabilization is used, the chemicals should not create any adverse effects on stormwater, plant life, or groundwater and should meet all applicable regulatory requirements.

Costs

Installation costs for water and chemical dust suppression vary based on the method used and the length of effectiveness. Annual costs may be high since some of these measures are effective for only a few hours to a few days.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities.
- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Check areas protected to ensure coverage.
- Most water-based dust control measures require frequent application, often daily or even multiple times per day. Obtain vendor or independent information on longevity of chemical dust suppressants.

References

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona, September 1992.

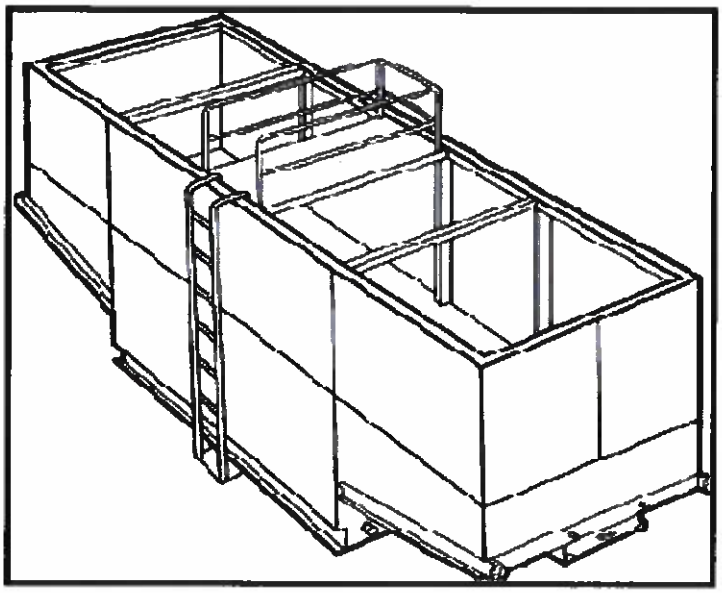
California Air Pollution Control Laws, California Air Resources Board, updated annually.

Construction Manual, Chapter 4, Section 10, "Dust Control"; Section 17, "Watering"; and Section 18, "Dust Palliative", California Department of Transportation (Caltrans), July 2001.

Prospects for Attaining the State Ambient Air Quality Standards for Suspended Particulate Matter (PM10), Visibility Reducing Particles, Sulfates, Lead, and Hydrogen Sulfide, California Air Resources Board, April 1991.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Dewatering Operations NS-2



Categories		
EC	Erosion Control	
SE	Sediment Control	☒
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	☑
WM	Waste Management and Materials Pollution Control	

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Description and Purpose

Dewatering operations are practices that manage the discharge of pollutants when non-stormwater and accumulated precipitation (stormwater) must be removed from a work location to proceed with construction work or to provide vector control.

The General Permit incorporates Numeric Effluent Limits (NEL) and Numeric Action Levels (NAL) for turbidity (see Section 2 of this handbook to determine your project's risk level and if you are subject to these requirements).

Discharges from dewatering operations can contain high levels of fine sediment that, if not properly treated, could lead to exceedences of the General Permit requirements.

Suitable Applications

These practices are implemented for discharges of non-stormwater from construction sites. Non-stormwaters include, but are not limited to, groundwater, water from cofferdams, water diversions, and waters used during construction activities that must be removed from a work area to facilitate construction.

Practices identified in this section are also appropriate for implementation when managing the removal of accumulated precipitation (stormwater) from depressed areas at a construction site.

Stormwater mixed with non-stormwater should be managed as non-stormwater.

Targeted Constituents	
Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	☑
Organics	

Potential Alternatives

SE-5: Fiber Roll

SE-6: Gravel Bag Berm

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Limitations

- Dewatering operations will require, and should comply with applicable local and project-specific permits and regulations. In some areas, all dewatering activities, regardless of the discharge volume, require a dewatering permit.
- Site conditions will dictate design and use of dewatering operations.
- The controls discussed in this fact sheet primarily address sediment. Other secondary pollutant removal benefits are discussed where applicable.
- The controls detailed in this fact sheet only allow for minimal settling time for sediment particles. Use only when site conditions restrict the use of the other control methods.
- Avoid dewatering discharges where possible by using the water for dust control.

Implementation

- A Construction Site Monitoring Plan (CSMP) should be included in the project Stormwater Pollution Prevention Plan (SWPPP).
- Regional Water Quality Control Board (RWQCB) Regions may require notification and approval prior to any discharge of water from construction sites.
- The destination of discharge from dewatering activities will typically determine the type of permit required by the discharger. For example, when discharging to a water of the U.S., a groundwater extraction permit will be required through the site's governing RWQCB. When discharging to a sanitary sewer or Municipal Separate Storm Sewer System (MS4), a permit may need to be obtained through the owner of the sanitary sewer or MS4 in addition to obtaining an RWQCB dewatering permit. Additional permits or permissions from other agencies may be required for dewatering cofferdams or diversions.
- Dewatering discharges should not cause erosion at the discharge point. Appropriate BMPs should be implemented to maintain compliance with all applicable permits.
- Maintain dewatering records in accordance with all local and project-specific permits and regulations.

Sediment Treatment

A variety of methods can be used to treat water during dewatering operations. Several devices are presented below and provide options to achieve sediment removal. The sediment particle size and permit or receiving water limitations on sediment are key considerations for selecting sediment treatment option(s); in some cases, the use of multiple devices may be appropriate. Use of other enhanced treatment methods (i.e., introduction of chemicals or electric current to enhance flocculation and removal of sediment) must comply with: 1) for storm drain or surface water discharges, the requirements for Active Treatment Systems (SE-11); or 2) for sanitary sewer discharges, the requirements of applicable sanitary sewer discharge permits.

Sediment Basin (see also SE-2)

Description:

- A sediment basin is a temporary basin with a controlled release structure that is formed by excavation or construction of an embankment to detain sediment-laden runoff and allow sediment to settle out before discharging. Sediment basins are generally larger than Sediment Traps (SE-3) and have a designed outlet structure.

Appropriate Applications:

- Effective for the removal of trash, gravel, sand, silt, some metals that settle out with the sediment.

Implementation:

- Excavation and construction of related facilities is required.
- Temporary sediment basins should be fenced if safety is a concern.
- Outlet protection is required to prevent erosion at the outfall location.

Maintenance:

- Maintenance is required for safety fencing, vegetation, embankment, inlet and outlet, as well as other features.
- Removal of sediment is required when the storage volume is reduced by one-third.

Sediment Trap (See also SE-3)

Description:

- A sediment trap is a temporary basin formed by excavation and/or construction of an earthen embankment across a waterway or low drainage area to detain sediment-laden runoff and allow sediment to settle out before discharging. Sediment traps are generally smaller than Sediment Basins (SE-2) and do not have a designed outlet (but do have a spillway or overflow).

Appropriate Applications:

Effective for the removal of large and medium sized particles (sand and gravel) and some metals that settle out with the sediment.

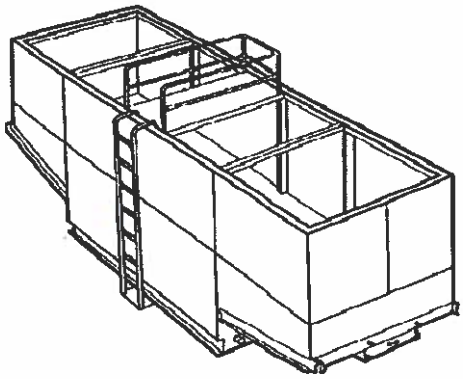
Implementation:

- Excavation and construction of related facilities is required.
- Trap inlets should be located to maximize the travel distance to the trap outlet.
- Use rock or vegetation to protect the trap outlets against erosion.

Maintenance:

- Maintenance is required for vegetation, embankment, inlet and outfall structures, as well as other features.
- Removal of sediment is required when the storage volume is reduced by one-third.

Weir Tanks



Description:

- A weir tank separates water and waste by using weirs. The configuration of the weirs (over and under weirs) maximizes the residence time in the tank and determines the waste to be removed from the water, such as oil, grease, and sediments.

Appropriate Applications:

- The tank removes trash, some settleable solids (gravel, sand, and silt), some visible oil and grease, and some metals (removed with sediment). To achieve high levels of flow, multiple tanks can be used in parallel. If additional treatment is desired, the tanks can be placed in series or as pre-treatment for other methods.

Implementation:

- Tanks are delivered to the site by the vendor, who can provide assistance with set-up and operation.
- Tank size will depend on flow volume, constituents of concern, and residency period required. Vendors should be consulted to appropriately size tank.
- Treatment capacity (i.e., volume and number of tanks) should provide at a minimum the required volume for discrete particle settling for treatment design flows.

Maintenance:

- Periodic cleaning is required based on visual inspection or reduced flow.
- Oil and grease disposal should be conducted by a licensed waste disposal company.

Dewatering Tanks

Description:

- A dewatering tank removes debris and sediment. Flow enters the tank through the top, passes through a fabric filter, and is discharged through the bottom of the tank. The filter separates the solids from the liquids.

Appropriate Applications:

- The tank removes trash, gravel, sand, and silt, some visible oil and grease, and some metals (removed with sediment). To achieve high levels of flow, multiple tanks can be used in parallel. If additional treatment is desired, the tanks can be placed in series or as pre-treatment for other methods.

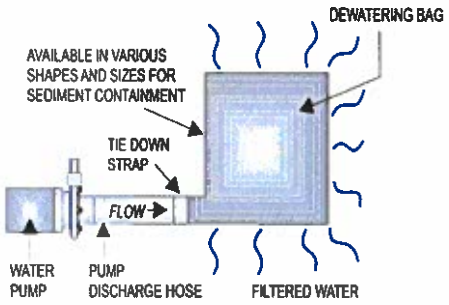
Implementation:

- Tanks are delivered to the site by the vendor, who can provide assistance with set-up and operation.
- Tank size will depend on flow volume, constituents of concern, and residency period required. Vendors should be consulted to appropriately size tank.

Maintenance:

- Periodic cleaning is required based on visual inspection or reduced flow.
- Oil and grease disposal should be conducted by licensed waste disposal company.

Gravity Bag Filter



Description:

- A gravity bag filter, also referred to as a dewatering bag, is a square or rectangular bag made of non-woven geotextile fabric that collects gravel, sand, silt, and fines.

Appropriate Applications:

- Effective for the removal of sediments (gravel, sand, silt, and fines). Some metals are removed with the sediment.

Implementation:

- Water is pumped into one side of the bag and seeps through the top, bottom, and sides of the bag.
- Place filter bag on pavement or a gravel bed or paved surface. Avoid placing a dewatering bag on unprotected bare soil. If placing the bag on bare soil is unavoidable, a secondary barrier should be used, such as a rock filter bed placed beneath and beyond the edges of the bag to, prevent erosion and capture sediments that escape the bag.
- Perimeter control around the downstream end of the bag should be implemented. Secondary sediment controls are important especially in the initial stages of discharge, which tend to allow fines to pass through the bag.

Maintenance:

- Inspection of the flow conditions, bag condition, bag capacity, and the secondary barrier (as applicable) is required.
- Replace the bag when it no longer filters sediment or passes water at a reasonable rate.
- Caution should be taken when removing and disposing of the bag, to prevent the release of captured sediment
- Properly dispose of the bag offsite. If sediment is removed from the bag prior to disposal (bags can potentially be reused depending upon their condition), dispose of sediment in accordance with the general maintenance procedures described at the end of this BMP Fact Sheet.

Sand Media Particulate Filter

Description:

- Water is treated by passing it through canisters filled with sand media. Generally, sand filters provide a final level of treatment. They are often used as a secondary or higher level of treatment after a significant amount of sediment and other pollutants have been removed using other methods.

Appropriate Applications:

- Effective for the removal of trash, gravel, sand, and silt and some metals, as well as the reduction of biochemical oxygen demand (BOD) and turbidity.
- Sand filters can be used for stand-alone treatment or in conjunction with bag and cartridge filtration if further treatment is required.
- Sand filters can also be used to provide additional treatment to water treated via settling or basic filtration.

Implementation:

- The filters require delivery to the site and initial set up. The vendor can provide assistance with installation and operation.

Maintenance:

- The filters require regular service to monitor and maintain the level of the sand media. If subjected to high loading rates, filters can plug quickly.
- Venders generally provide data on maximum head loss through the filter. The filter should be monitored daily while in use, and cleaned when head loss reaches target levels.
- If cleaned by backwashing, the backwash water may need to be hauled away for disposal, or returned to the upper end of the treatment train for another pass through the series of dewatering BMPs.

Pressurized Bag Filter

Description:

- A pressurized bag filter is a unit composed of single filter bags made from polyester felt material. The water filters through the unit and is discharged through a header. Vendors provide bag filters in a variety of configurations. Some units include a combination of bag filters and cartridge filters for enhanced contaminant removal.

Appropriate Applications:

- Effective for the removal of sediment (sand and silt) and some metals, as well as the reduction of BOD, turbidity, and hydrocarbons. Oil absorbent bags are available for hydrocarbon removal.
- Filters can be used to provide secondary treatment to water treated via settling or basic filtration.

Implementation:

- The filters require delivery to the site and initial set up. The vendor can provide assistance with installation and operation.

Maintenance:

- The filter bags require replacement when the pressure differential equals or exceeds the manufacturer's recommendation.

Cartridge Filter

Description:

- Cartridge filters provide a high degree of pollutant removal by utilizing a number of individual cartridges as part of a larger filtering unit. They are often used as a secondary or higher (polishing) level of treatment after a significant amount of sediment and other pollutants are removed. Units come with various cartridge configurations (for use in series with bag filters) or with a larger single cartridge filtration unit (with multiple filters within).

Appropriate Applications:

- Effective for the removal of sediment (sand, silt, and some clays) and metals, as well as the reduction of BOD, turbidity, and hydrocarbons. Hydrocarbons can effectively be removed with special resin cartridges.
- Filters can be used to provide secondary treatment to water treated via settling or basic filtration.

Implementation:

- The filters require delivery to the site and initial set up. The vendor can provide assistance.

Maintenance:

- The cartridges require replacement when the pressure differential equals or exceeds the manufacturer's recommendation.

Costs

- Sediment control costs vary considerably depending on the dewatering and sediment treatment system that is selected. Pressurized filters tend to be more expensive than gravity settling, but are often more effective. Simple tanks are generally rented on a long-term basis (one or more months) and can range from $360 per month for a 1,000 gallon tank to $2,660 per month for a 10,000 gallon tank. Mobilization and demobilization costs vary considerably.

Inspection and Maintenance

- Inspect and verify that dewatering BMPs are in place and functioning prior to the commencement of activities requiring dewatering.
- Inspect dewatering BMPs daily while dewatering activities are being conducted.

- Inspect all equipment before use. Monitor dewatering operations to ensure they do not cause offsite discharge or erosion.
- Sample dewatering discharges as required by the General Permit.
- Unit-specific maintenance requirements are included with the description of each unit.
- Sediment removed during the maintenance of a dewatering device may be either spread onsite and stabilized, or disposed of at a disposal site as approved by the owner.
- Sediment that is commingled with other pollutants should be disposed of in accordance with all applicable laws and regulations and as approved by the owner.

References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

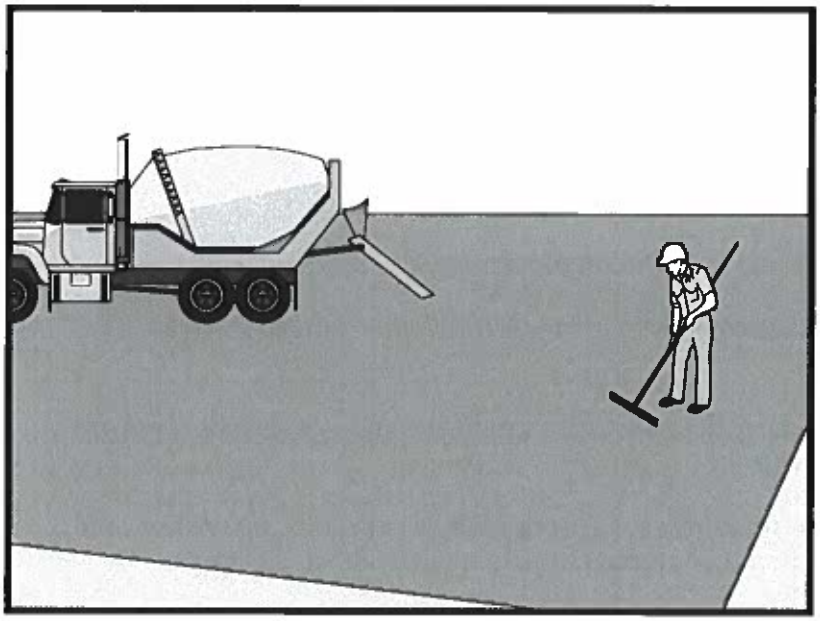
Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003; Updated March 2004.

Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

Labor Surcharge & Equipment Rental Rates, April 1, 2002 through March 31, 2003, California Department of Transportation (Caltrans).

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

Paving and Grinding Operations NS-3



Categories		
EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	☑
WM	Waste Management and Materials Pollution Control	☒

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Targeted Constituents	
Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	☑
Organics	

Potential Alternatives

None

Description and Purpose

Prevent or reduce the discharge of pollutants from paving operations, using measures to prevent runon and runoff pollution, properly disposing of wastes, and training employees and subcontractors.

The General Permit incorporates Numeric Effluent Limits (NEL) and Numeric Action Levels (NAL) for pH and turbidity (see Section 2 of this handbook to determine your project's risk level and if you are subject to these requirements).

Many types of construction materials associated with paving and grinding operations, including mortar, concrete, and cement and their associated wastes have basic chemical properties that can raise pH levels outside of the permitted range. Additional care should be taken when managing these materials to prevent them from coming into contact with stormwater flows, which could lead to exceedances of the General Permit requirements.

Suitable Applications

These procedures are implemented where paving, surfacing, resurfacing, or sawcutting, may pollute stormwater runoff or discharge to the storm drain system or watercourses.

Limitations

- Paving opportunities may be limited during wet weather.
- Discharges of freshly paved surfaces may raise pH to environmentally harmful levels and trigger permit violations.

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Implementation

General

- Avoid paving during the wet season when feasible.
- Reschedule paving and grinding activities if rain is forecasted.
- Train employees and sub-contractors in pollution prevention and reduction.
- Store materials away from drainage courses to prevent stormwater runon (see WM-1, Material Delivery and Storage).
- Protect drainage courses, particularly in areas with a grade, by employing BMPs to divert runoff or to trap and filter sediment.
- Stockpile material removed from roadways away from drain inlets, drainage ditches, and watercourses. These materials should be stored consistent with WM-3, Stockpile Management.
- Disposal of PCC (Portland cement concrete) and AC (asphalt concrete) waste should be in conformance with WM-8, Concrete Waste Management.

Saw Cutting, Grinding, and Pavement Removal

- Shovel or vacuum saw-cut slurry and remove from site. Cover or barricade storm drains during saw cutting to contain slurry.
- When paving involves AC, the following steps should be implemented to prevent the discharge of grinding residue, uncompacted or loose AC, tack coats, equipment cleaners, or unrelated paving materials:
  - AC grindings, pieces, or chunks used in embankments or shoulder backing should not be allowed to enter any storm drains or watercourses. Install inlet protection and perimeter controls until area is stabilized (i.e. cutting, grinding or other removal activities are complete and loose material has been properly removed and disposed of)or permanent controls are in place. Examples of temporary perimeter controls can be found in EC-9, Earth Dikes and Drainage Swales; SE-1, Silt Fence; SE-5, Fiber Rolls, or SE-13 Compost Socks and Berms
  - Collect and remove all broken asphalt and recycle when practical. Old or spilled asphalt should be recycled or disposed of properly.
- Do not allow saw-cut slurry to enter storm drains or watercourses. Residue from grinding operations should be picked up by a vacuum attachment to the grinding machine, or by sweeping, should not be allowed to flow across the pavement, and should not be left on the surface of the pavement. See also WM-8, Concrete Waste Management, and WM-10, Liquid Waste Management.
- Pavement removal activities should not be conducted in the rain.
- Collect removed pavement material by mechanical or manual methods. This material may be recycled for use as shoulder backing or base material.

- If removed pavement material cannot be recycled, transport the material back to an approved storage site.

Asphaltic Concrete Paving

- If paving involves asphaltic cement concrete, follow these steps:

  - Do not allow sand or gravel placed over new asphalt to wash into storm drains, streets, or creeks. Vacuum or sweep loose sand and gravel and properly dispose of this waste by referring to WM-5, Solid Waste Management.

  - Old asphalt should be disposed of properly. Collect and remove all broken asphalt from the site and recycle whenever possible.

Portland Cement Concrete Paving

- Do not wash sweepings from exposed aggregate concrete into a storm drain system. Collect waste materials by dry methods, such as sweeping or shoveling, and return to aggregate base stockpile or dispose of properly. Allow aggregate rinse to settle. Then, either allow rinse water to dry in a temporary pit as described in WM-8, Concrete Waste Management, or pump the water to the sanitary sewer if authorized by the local wastewater authority.

Sealing Operations

- During chip seal application and sweeping operations, petroleum or petroleum covered aggregate should not be allowed to enter any storm drain or water courses. Apply temporary perimeter controls until structure is stabilized (i.e. all sealing operations are complete and cured and loose materials have been properly removed and disposed).

- Inlet protection (SE-10, Storm Drain Inlet Protection) should be used during application of seal coat, tack coat, slurry seal, and fog seal.

- Seal coat, tack coat, slurry seal, or fog seal should not be applied if rainfall is predicted to occur during the application or curing period.

Paving Equipment

- Leaks and spills from paving equipment can contain toxic levels of heavy metals and oil and grease. Place drip pans or absorbent materials under paving equipment when not in use. Clean up spills with absorbent materials and dispose of in accordance with the applicable regulations. See NS-10, Vehicle and Equipment Maintenance, WM-4, Spill Prevention and Control, and WM-10, Liquid Waste Management.

- Substances used to coat asphalt transport trucks and asphalt spreading equipment should not contain soap and should be non-foaming and non-toxic.

- Paving equipment parked onsite should be parked over plastic to prevent soil contamination.

- Clean asphalt coated equipment offsite whenever possible. When cleaning dry, hardened asphalt from equipment, manage hardened asphalt debris as described in WM-5, Solid Waste Management. Any cleaning onsite should follow NS-8, Vehicle and Equipment Cleaning.

Thermoplastic Striping

- Thermoplastic striper and pre-heater equipment shutoff valves should be inspected to ensure that they are working properly to prevent leaking thermoplastic from entering drain inlets, the stormwater drainage system, or watercourses.
- Pre-heaters should be filled carefully to prevent splashing or spilling of hot thermoplastic. Leave six inches of space at the top of the pre-heater container when filling thermoplastic to allow room for material to move.
- Do not pre-heat, transfer, or load thermoplastic near drain inlets or watercourses.
- Clean truck beds daily of loose debris and melted thermoplastic. When possible, recycle thermoplastic material.

Raised/Recessed Pavement Marker Application and Removal

- Do not transfer or load bituminous material near drain inlets, the stormwater drainage system, or watercourses.
- Melting tanks should be loaded with care and not filled to beyond six inches from the top to leave room for splashing.
- When servicing or filling melting tanks, ensure all pressure is released before removing lids to avoid spills.
- On large-scale projects, use mechanical or manual methods to collect excess bituminous material from the roadway after removal of markers.

Costs

- All of the above are low cost measures.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of paving and grinding operations.
- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Sample stormwater runoff required by the General Permit.
- Keep ample supplies of drip pans or absorbent materials onsite.
- Inspect and maintain machinery regularly to minimize leaks and drips.

References

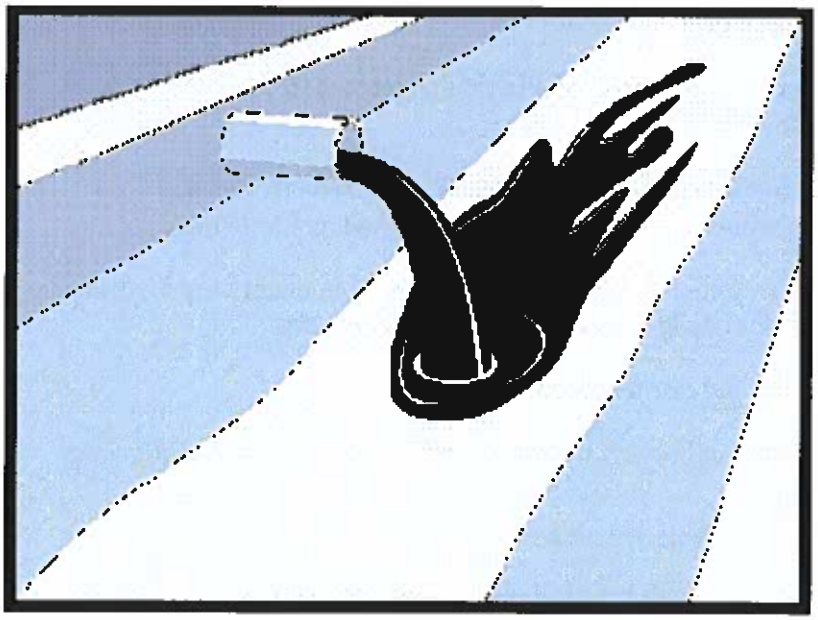
Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Hot Mix Asphalt-Paving Handbook AC 150/5370-14, Appendix I, U.S. Army Corps of Engineers, July 1991.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

Illicit Connection/Discharge NS-6



Categories		
EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	☑
WM	Waste Management and Materials Pollution Control	

Legend:
☑ **Primary Objective**
☒ **Secondary Objective**

Targeted Constituents	
Sediment	
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	☑
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose

Procedures and practices designed for construction contractors to recognize illicit connections or illegally dumped or discharged materials on a construction site and report incidents.

Suitable Applications

This best management practice (BMP) applies to all construction projects. Illicit connection/discharge and reporting is applicable anytime an illicit connection or discharge is discovered or illegally dumped material is found on the construction site.

Limitations

Illicit connections and illegal discharges or dumping, for the purposes of this BMP, refer to discharges and dumping caused by parties other than the contractor. If pre-existing hazardous materials or wastes are known to exist onsite, they should be identified in the SWPPP and handled as set forth in the SWPPP.

Implementation

Planning

- Review the SWPPP. Pre-existing areas of contamination should be identified and documented in the SWPPP.
- Inspect site before beginning the job for evidence of illicit connections, illegal dumping or discharges. Document any pre-existing conditions and notify the owner.
- Inspect site regularly during project execution for evidence

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of illicit connections, illegal dumping or discharges.

- Observe site perimeter for evidence for potential of illicitly discharged or illegally dumped material, which may enter the job site.

Identification of Illicit Connections and Illegal Dumping or Discharges

- **General** – unlabeled and unidentifiable material should be treated as hazardous.
- **Solids** - Look for debris, or rubbish piles. Solid waste dumping often occurs on roadways with light traffic loads or in areas not easily visible from the traveled way.
- **Liquids** - signs of illegal liquid dumping or discharge can include:
  - Visible signs of staining or unusual colors to the pavement or surrounding adjacent soils
  - Pungent odors coming from the drainage systems
  - Discoloration or oily substances in the water or stains and residues detained within ditches, channels or drain boxes
  - Abnormal water flow during the dry weather season
- **Urban Areas** - Evidence of illicit connections or illegal discharges is typically detected at storm drain outfall locations or at manholes. Signs of an illicit connection or illegal discharge can include:
  - Abnormal water flow during the dry weather season
  - Unusual flows in sub drain systems used for dewatering
  - Pungent odors coming from the drainage systems
  - Discoloration or oily substances in the water or stains and residues detained within ditches, channels or drain boxes
  - Excessive sediment deposits, particularly adjacent to or near active offsite construction projects
- **Rural Areas** - Illicit connections or illegal discharges involving irrigation drainage ditches are detected by visual inspections. Signs of an illicit discharge can include:
  - Abnormal water flow during the non-irrigation season
  - Non-standard junction structures
  - Broken concrete or other disturbances at or near junction structures

Reporting

Notify the owner of any illicit connections and illegal dumping or discharge incidents at the time of discovery. For illicit connections or discharges to the storm drain system, notify the local stormwater management agency. For illegal dumping, notify the local law enforcement agency.

Cleanup and Removal

The responsibility for cleanup and removal of illicit or illegal dumping or discharges will vary by location. Contact the local stormwater management agency for further information.

Costs

Costs to look for and report illicit connections and illegal discharges and dumping are low. The best way to avoid costs associated with illicit connections and illegal discharges and dumping is to keep the project perimeters secure to prevent access to the site, to observe the site for vehicles that should not be there, and to document any waste or hazardous materials that exist onsite before taking possession of the site.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect the site regularly to check for any illegal dumping or discharge.
- Prohibit employees and subcontractors from disposing of non-job related debris or materials at the construction site.
- Notify the owner of any illicit connections and illegal dumping or discharge incidents at the time of discovery.

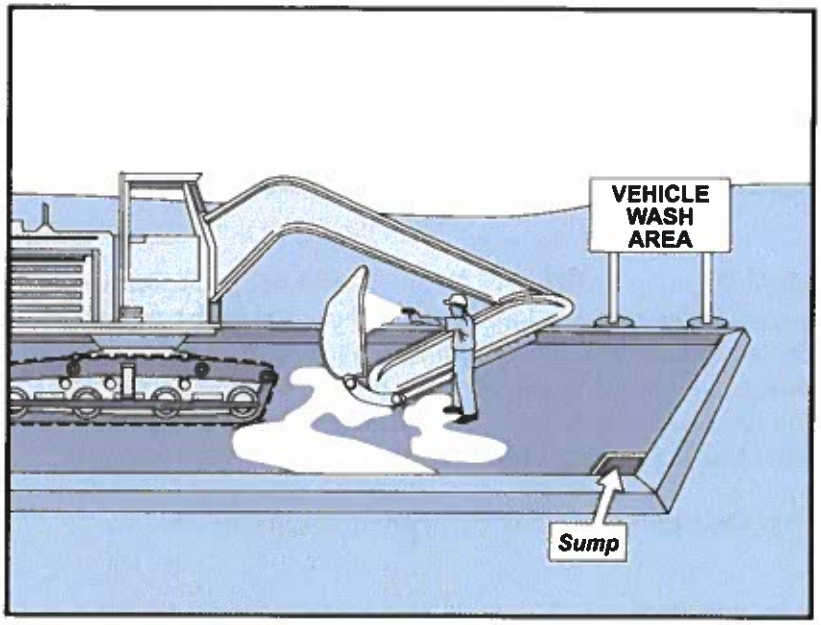
References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

Vehicle and Equipment Cleaning NS-8



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Legend:
☑ **Primary Objective**
☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	☑
Trash	
Metals	
Bacteria	
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose

Vehicle and equipment cleaning procedures and practices eliminate or reduce the discharge of pollutants to stormwater from vehicle and equipment cleaning operations. Procedures and practices include but are not limited to: using offsite facilities; washing in designated, contained areas only; eliminating discharges to the storm drain by infiltrating the wash water; and training employees and subcontractors in proper cleaning procedures.

Suitable Applications

These procedures are suitable on all construction sites where vehicle and equipment cleaning is performed.

Limitations

Even phosphate-free, biodegradable soaps have been shown to be toxic to fish before the soap degrades. Sending vehicles/equipment offsite should be done in conjunction with TC-1, Stabilized Construction Entrance/Exit.

Implementation

Other options to washing equipment onsite include contracting with either an offsite or mobile commercial washing business. These businesses may be better equipped to handle and dispose of the wash waters properly. Performing this work offsite can also be economical by eliminating the need for a separate washing operation onsite.

If washing operations are to take place onsite, then:

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- Use phosphate-free, biodegradable soaps.
- Educate employees and subcontractors on pollution prevention measures.
- Do not permit steam cleaning onsite. Steam cleaning can generate significant pollutant concentrates.
- Cleaning of vehicles and equipment with soap, solvents or steam should not occur on the project site unless resulting wastes are fully contained and disposed of. Resulting wastes should not be discharged or buried, and must be captured and recycled or disposed according to the requirements of WM-10, Liquid Waste Management or WM-6, Hazardous Waste Management, depending on the waste characteristics. Minimize use of solvents. Use of diesel for vehicle and equipment cleaning is prohibited.
- All vehicles and equipment that regularly enter and leave the construction site must be cleaned offsite.
- When vehicle and equipment washing and cleaning must occur onsite, and the operation cannot be located within a structure or building equipped with appropriate disposal facilities, the outside cleaning area should have the following characteristics:
  - Located away from storm drain inlets, drainage facilities, or watercourses
  - Paved with concrete or asphalt and bermed to contain wash waters and to prevent runon and runoff
  - Configured with a sump to allow collection and disposal of wash water
  - No discharge of wash waters to storm drains or watercourses
  - Used only when necessary
- When cleaning vehicles and equipment with water:
  - Use as little water as possible. High-pressure sprayers may use less water than a hose and should be considered
  - Use positive shutoff valve to minimize water usage
  - Facility wash racks should discharge to a sanitary sewer, recycle system or other approved discharge system and must not discharge to the storm drainage system, watercourses, or to groundwater

Costs

Cleaning vehicles and equipment at an offsite facility may reduce overall costs for vehicle and equipment cleaning by eliminating the need to provide similar services onsite. When onsite cleaning is needed, the cost to establish appropriate facilities is relatively low on larger, long-duration projects, and moderate to high on small, short-duration projects.

Inspection and Maintenance

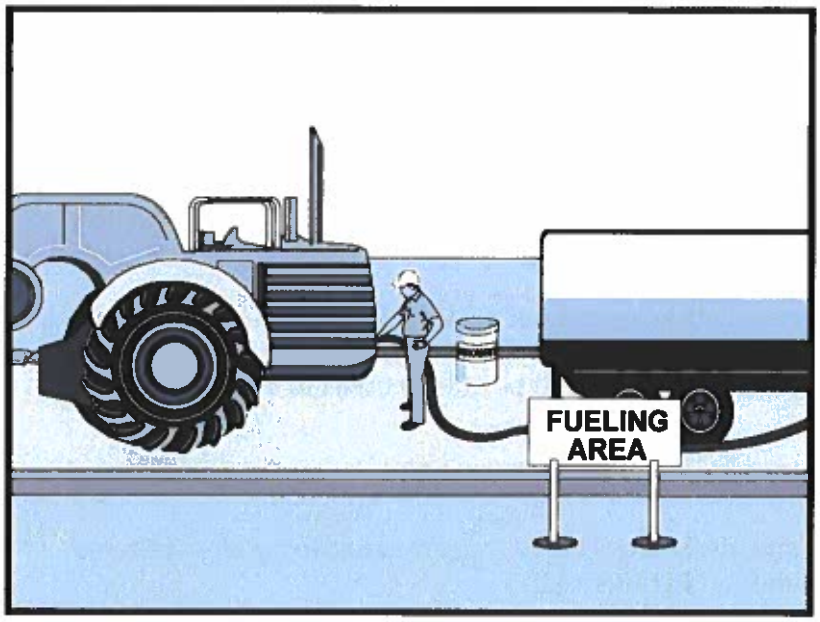
- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Inspection and maintenance is minimal, although some berm repair may be necessary.
- Monitor employees and subcontractors throughout the duration of the construction project to ensure appropriate practices are being implemented.
- Inspect sump regularly and remove liquids and sediment as needed.
- Prohibit employees and subcontractors from washing personal vehicles and equipment on the construction site.

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Swisher, R.D. Surfactant Biodegradation, Marcel Decker Corporation, 1987.

Vehicle and Equipment Fueling NS-9



Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	☑
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	☑
Organics	

Potential Alternatives

None

Description and Purpose

Vehicle equipment fueling procedures and practices are designed to prevent fuel spills and leaks, and reduce or eliminate contamination of stormwater. This can be accomplished by using offsite facilities, fueling in designated areas only, enclosing or covering stored fuel, implementing spill controls, and training employees and subcontractors in proper fueling procedures.

Suitable Applications

These procedures are suitable on all construction sites where vehicle and equipment fueling takes place.

Limitations

Onsite vehicle and equipment fueling should only be used where it is impractical to send vehicles and equipment offsite for fueling. Sending vehicles and equipment offsite should be done in conjunction with TC-1, Stabilized Construction Entrance/ Exit.

Implementation

- Use offsite fueling stations as much as possible. These businesses are better equipped to handle fuel and spills properly. Performing this work offsite can also be economical by eliminating the need for a separate fueling area at a site.
- Discourage "topping-off" of fuel tanks.
- Absorbent spill cleanup materials and spill kits should be available in fueling areas and on fueling trucks, and should

be disposed of properly after use.

- Drip pans or absorbent pads should be used during vehicle and equipment fueling, unless the fueling is performed over an impermeable surface in a dedicated fueling area.
- Use absorbent materials on small spills. Do not hose down or bury the spill. Remove the adsorbent materials promptly and dispose of properly.
- Avoid mobile fueling of mobile construction equipment around the site; rather, transport the equipment to designated fueling areas. With the exception of tracked equipment such as bulldozers and large excavators, most vehicles should be able to travel to a designated area with little lost time.
- Train employees and subcontractors in proper fueling and cleanup procedures.
- When fueling must take place onsite, designate an area away from drainage courses to be used. Fueling areas should be identified in the SWPPP.
- Dedicated fueling areas should be protected from stormwater runon and runoff, and should be located at least 50 ft away from downstream drainage facilities and watercourses. Fueling must be performed on level-grade areas.
- Protect fueling areas with berms and dikes to prevent runon, runoff, and to contain spills.
- Nozzles used in vehicle and equipment fueling should be equipped with an automatic shutoff to control drips. Fueling operations should not be left unattended.
- Use vapor recovery nozzles to help control drips as well as air pollution where required by Air Quality Management Districts (AQMD).
- Federal, state, and local requirements should be observed for any stationary above ground storage tanks.

Costs

- All of the above measures are low cost except for the capital costs of above ground tanks that meet all local environmental, zoning, and fire codes.

Inspection and Maintenance

- Vehicles and equipment should be inspected each day of use for leaks. Leaks should be repaired immediately or problem vehicles or equipment should be removed from the project site.
- Keep ample supplies of spill cleanup materials onsite.
- Immediately clean up spills and properly dispose of contaminated soil and cleanup materials.

References

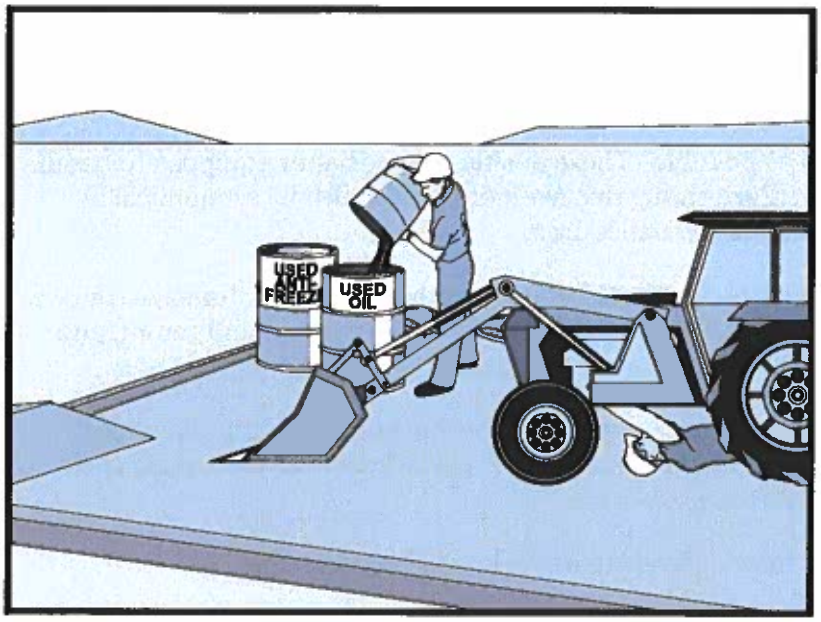
Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance, Working Group Working Paper; USEPA, April 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

Vehicle & Equipment Maintenance NS-10



Categories

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WM	Waste Management and Materials Pollution Control	

Legend:
☑ **Primary Objective**
☒ **Secondary Objective**

Targeted Constituents

Sediment	
Nutrients	☑
Trash	☑
Metals	
Bacteria	
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose

Prevent or reduce the contamination of stormwater resulting from vehicle and equipment maintenance by running a "dry and clean site". The best option would be to perform maintenance activities at an offsite facility. If this option is not available then work should be performed in designated areas only, while providing cover for materials stored outside, checking for leaks and spills, and containing and cleaning up spills immediately. Employees and subcontractors must be trained in proper procedures.

Suitable Applications

These procedures are suitable on all construction projects where an onsite yard area is necessary for storage and maintenance of heavy equipment and vehicles.

Limitations

Onsite vehicle and equipment maintenance should only be used where it is impractical to send vehicles and equipment offsite for maintenance and repair. Sending vehicles/equipment offsite should be done in conjunction with TC-1, Stabilized Construction Entrance/Exit.

Outdoor vehicle or equipment maintenance is a potentially significant source of stormwater pollution. Activities that can contaminate stormwater include engine repair and service, changing or replacement of fluids, and outdoor equipment storage and parking (engine fluid leaks). For further information on vehicle or equipment servicing, see NS-8, Vehicle and Equipment Cleaning, and NS-9, Vehicle and

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Equipment Fueling.

Implementation

- Use offsite repair shops as much as possible. These businesses are better equipped to handle vehicle fluids and spills properly. Performing this work offsite can also be economical by eliminating the need for a separate maintenance area.
- If maintenance must occur onsite, use designated areas, located away from drainage courses. Dedicated maintenance areas should be protected from stormwater runon and runoff, and should be located at least 50 ft from downstream drainage facilities and watercourses.
- Drip pans or absorbent pads should be used during vehicle and equipment maintenance work that involves fluids, unless the maintenance work is performed over an impermeable surface in a dedicated maintenance area.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- All fueling trucks and fueling areas are required to have spill kits and/or use other spill protection devices.
- Use adsorbent materials on small spills. Remove the absorbent materials promptly and dispose of properly.
- Inspect onsite vehicles and equipment daily at startup for leaks, and repair immediately.
- Keep vehicles and equipment clean; do not allow excessive build-up of oil and grease.
- Segregate and recycle wastes, such as greases, used oil or oil filters, antifreeze, cleaning solutions, automotive batteries, hydraulic and transmission fluids. Provide secondary containment and covers for these materials if stored onsite.
- Train employees and subcontractors in proper maintenance and spill cleanup procedures.
- Drip pans or plastic sheeting should be placed under all vehicles and equipment placed on docks, barges, or other structures over water bodies when the vehicle or equipment is planned to be idle for more than 1 hour.
- For long-term projects, consider using portable tents or covers over maintenance areas if maintenance cannot be performed offsite.
- Consider use of new, alternative greases and lubricants, such as adhesive greases, for chassis lubrication and fifth-wheel lubrication.
- Properly dispose of used oils, fluids, lubricants, and spill cleanup materials.
- Do not place used oil in a dumpster or pour into a storm drain or watercourse.
- Properly dispose of or recycle used batteries.
- Do not bury used tires.

- Repair leaks of fluids and oil immediately.

Listed below is further information if you must perform vehicle or equipment maintenance onsite.

Safer Alternative Products

- Consider products that are less toxic or hazardous than regular products. These products are often sold under an "environmentally friendly" label.
- Consider use of grease substitutes for lubrication of truck fifth-wheels. Follow manufacturers label for details on specific uses.
- Consider use of plastic friction plates on truck fifth-wheels in lieu of grease. Follow manufacturers label for details on specific uses.

Waste Reduction

Parts are often cleaned using solvents such as trichloroethylene, trichloroethane, or methylene chloride. Many of these cleaners are listed in California Toxic Rule as priority pollutants. These materials are harmful and must not contaminate stormwater. They must be disposed of as a hazardous waste. Reducing the number of solvents makes recycling easier and reduces hazardous waste management costs. Often, one solvent can perform a job as well as two different solvents. Also, if possible, eliminate or reduce the amount of hazardous materials and waste by substituting non-hazardous or less hazardous materials. For example, replace chlorinated organic solvents with non-chlorinated solvents. Non-chlorinated solvents like kerosene or mineral spirits are less toxic and less expensive to dispose of properly. Check the list of active ingredients to see whether it contains chlorinated solvents. The "chlor" term indicates that the solvent is chlorinated. Also, try substituting a wire brush for solvents to clean parts.

Recycling and Disposal

Separating wastes allows for easier recycling and may reduce disposal costs. Keep hazardous wastes separate, do not mix used oil solvents, and keep chlorinated solvents (like,-trichloroethane) separate from non-chlorinated solvents (like kerosene and mineral spirits). Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around. Provide cover and secondary containment until these materials can be removed from the site.

Oil filters can be recycled. Ask your oil supplier or recycler about recycling oil filters.

Do not dispose of extra paints and coatings by dumping liquid onto the ground or throwing it into dumpsters. Allow coatings to dry or harden before disposal into covered dumpsters.

Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries, even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Costs

All of the above are low cost measures. Higher costs are incurred to setup and maintain onsite maintenance areas.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Keep ample supplies of spill cleanup materials onsite.
- Maintain waste fluid containers in leak proof condition.
- Vehicles and equipment should be inspected on each day of use. Leaks should be repaired immediately or the problem vehicle(s) or equipment should be removed from the project site.
- Inspect equipment for damaged hoses and leaky gaskets routinely. Repair or replace as needed.

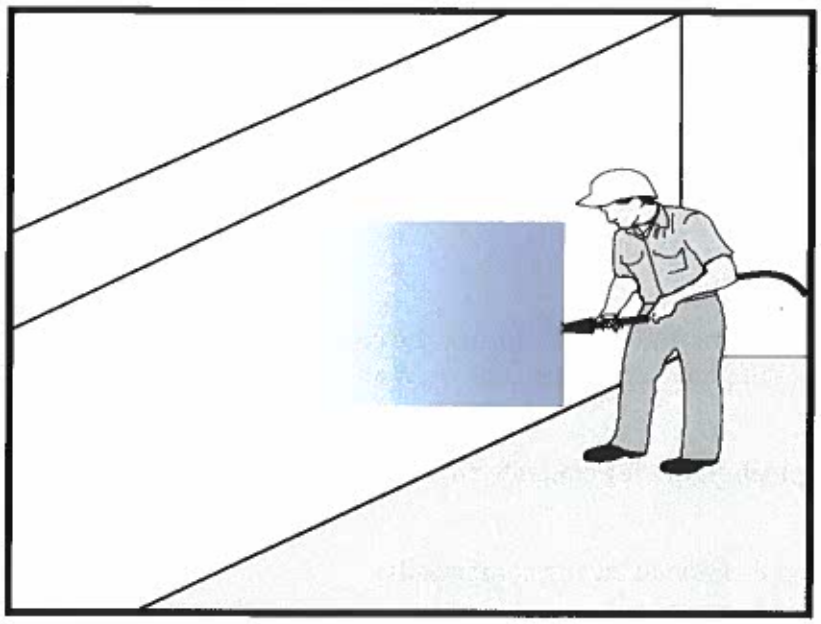
References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Coastal Nonpoint Pollution Control Program; Program Development and Approval Guidance, Working Group, Working Paper; USEPA, April 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Concrete Curing NS-12



Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	☑
WM	Waste Management and Materials Pollution Control	☑

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	

Potential Alternatives

None

Description and Purpose

Concrete curing is used in the construction of structures such as bridges, retaining walls, pump houses, large slabs, and structured foundations. Concrete curing includes the use of both chemical and water methods.

Concrete and its associated curing materials have basic chemical properties that can raise the pH of water to levels outside of the permitted range. Discharges of stormwater and non-stormwater exposed to concrete during curing may have a high pH and may contain chemicals, metals, and fines. The General Permit incorporates Numeric Effluent Limits (NEL) and Numeric Action Levels (NAL) for pH (see Section 2 of this handbook to determine your project's risk level and if you are subject to these requirements).

Proper procedures and care should be taken when managing concrete curing materials to prevent them from coming into contact with stormwater flows, which could result in a high pH discharge.

Suitable Applications

Suitable applications include all projects where Portland Cement Concrete (PCC) and concrete curing chemicals are placed where they can be exposed to rainfall, runoff from other areas, or where runoff from the PCC will leave the site.

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Limitations

- Runoff contact with concrete waste can raise pH levels in the water to environmentally harmful levels and trigger permit violations.

Implementation

Chemical Curing

- Avoid over spray of curing compounds.
- Minimize the drift by applying the curing compound close to the concrete surface. Apply an amount of compound that covers the surface, but does not allow any runoff of the compound.
- Use proper storage and handling techniques for concrete curing compounds. Refer to WM-1, Material Delivery and Storage.
- Protect drain inlets prior to the application of curing compounds.
- Refer to WM-4, Spill Prevention and Control.

Water Curing for Bridge Decks, Retaining Walls, and other Structures

- Direct cure water away from inlets and watercourses to collection areas for evaporation or other means of removal in accordance with all applicable permits. See WM-8 Concrete Waste Management.
- Collect cure water at the top of slopes and transport to a concrete waste management area in a non-erosive manner. See EC-9 Earth Dikes and Drainage Swales, EC-10, Velocity Dissipation Devices, and EC-11, Slope Drains.
- Utilize wet blankets or a similar method that maintains moisture while minimizing the use and possible discharge of water.

Education

- Educate employees, subcontractors, and suppliers on proper concrete curing techniques to prevent contact with discharge as described herein.
- Arrange for the QSP or the appropriately trained contractor's superintendent or representative to oversee and enforce concrete curing procedures.

Costs

All of the above measures are generally low cost.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities.
- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.

- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Sample non-stormwater discharges and stormwater runoff that contacts uncured and partially cured concrete as required by the General Permit.
- Ensure that employees and subcontractors implement appropriate measures for storage, handling, and use of curing compounds.
- Inspect cure containers and spraying equipment for leaks.

References

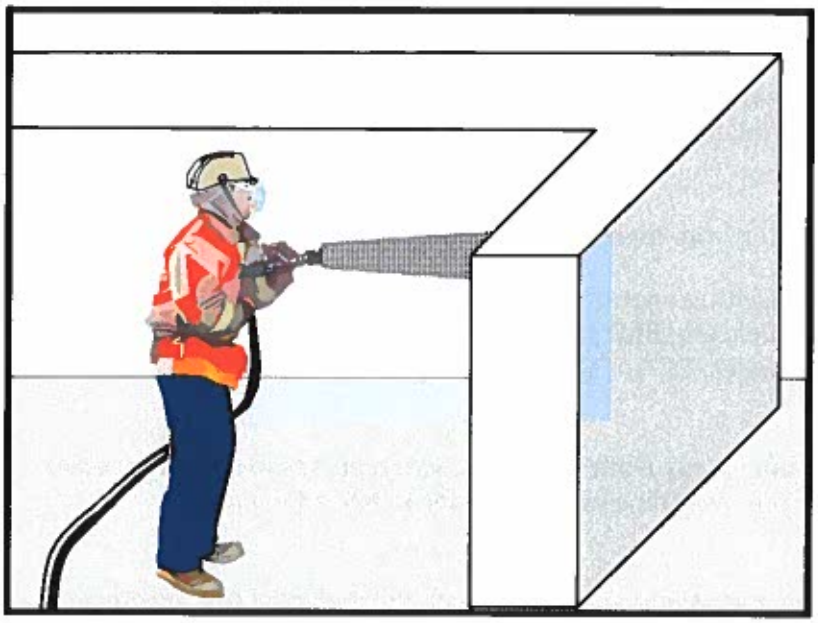
Blue Print for a Clean Bay-Construction-Related Industries: Best Management Practices for Stormwater Pollution Prevention; Santa Clara Valley Non Point Source Pollution Control Program, 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

Concrete Finishing NS-13



Categories

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Legend:
☑ **Primary Category**
☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	☑
Bacteria	
Oil and Grease	
Organics	☑

Potential Alternatives

None

Description and Purpose

Concrete finishing methods are used for bridge deck rehabilitation, paint removal, curing compound removal, and final surface finish appearances. Methods include sand blasting, shot blasting, grinding, or high pressure water blasting. Stormwater and non-stormwater exposed to concrete finishing by-products may have a high pH and may contain chemicals, metals, and fines. Proper procedures and implementation of appropriate BMPs can minimize the impact that concrete-finishing methods may have on stormwater and non-stormwater discharges.

The General Permit incorporates Numeric Effluent Limits (NEL) and Numeric Action Levels (NAL) for pH (see Section 2 of this handbook to determine your project's risk level and if you are subject to these requirements).

Concrete and its associated curing materials have basic chemical properties that can raise pH levels outside of the permitted range. Additional care should be taken when managing these materials to prevent them from coming into contact with stormwater flows, which could lead to exceedances of the General Permit requirements.

Suitable Applications

These procedures apply to all construction locations where concrete finishing operations are performed.

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Limitations

- Runoff contact with concrete waste can raise pH levels in the water to environmentally harmful levels and trigger permit violations.

Implementation

- Collect and properly dispose of water from high-pressure water blasting operations.
- Collect contaminated water from blasting operations at the top of slopes. Transport or dispose of contaminated water while using BMPs such as those for erosion control. Refer to EC-9, Earth Dikes and Drainage Swales, EC-10, Velocity Dissipation Devices, and EC-11, Slope Drains.
- Direct water from blasting operations away from inlets and watercourses to collection areas for infiltration or other means of removal (dewatering). Refer to NS-2 Dewatering Operations.
- Protect inlets during sandblasting operations. Refer to SE-10, Storm Drain Inlet Protection.
- Refer to WM-8, Concrete Waste Management for disposal of concrete debris.
- Minimize the drift of dust and blast material as much as possible by keeping the blasting nozzle close to the surface.
- When blast residue contains a potentially hazardous waste, refer to WM-6, Hazardous Waste Management.

Education

- Educate employees, subcontractors, and suppliers on proper concrete finishing techniques to prevent contact with discharge as described herein.
- Arrange for the QSP or the appropriately trained contractor's superintendent or representative to oversee and enforce concrete finishing procedures.

Costs

These measures are generally of low cost.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities.
- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Sample non-stormwater discharges and stormwater runoff that contacts concrete dust and debris as required by the General Permit.

- Sweep or vacuum up debris from sandblasting at the end of each shift.
- At the end of each work shift, remove and contain liquid and solid waste from containment structures, if any, and from the general work area.
- Inspect containment structures for damage prior to use and prior to onset of forecasted rain.

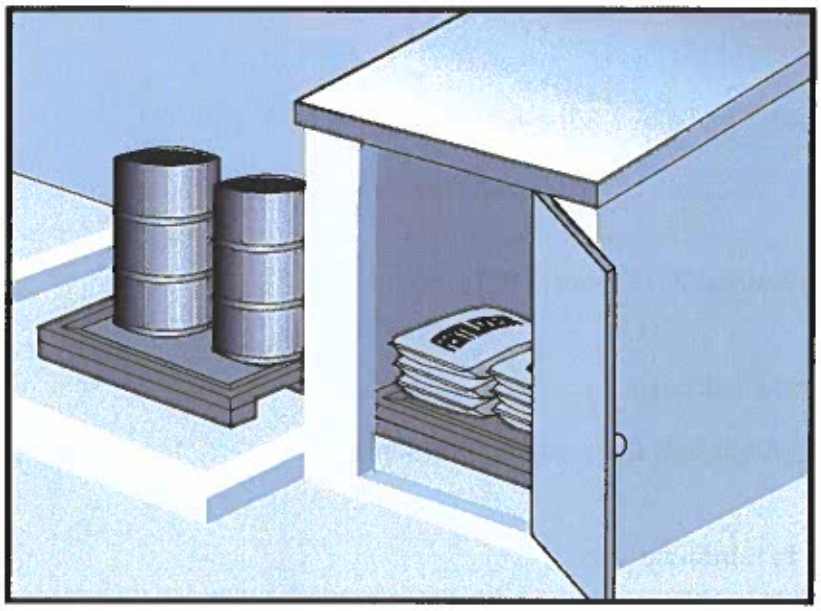
References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

Material Delivery and Storage WM-1



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Targeted Constituents

Sediment	☑
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose

Prevent, reduce, or eliminate the discharge of pollutants from material delivery and storage to the stormwater system or watercourses by minimizing the storage of hazardous materials onsite, storing materials in watertight containers and/or a completely enclosed designated area, installing secondary containment, conducting regular inspections, and training employees and subcontractors.

This best management practice covers only material delivery and storage. For other information on materials, see WM-2, Material Use, or WM-4, Spill Prevention and Control. For information on wastes, see the waste management BMPs in this section.

Suitable Applications

These procedures are suitable for use at all construction sites with delivery and storage of the following materials:

- Soil stabilizers and binders
- Pesticides and herbicides
- Fertilizers
- Detergents
- Plaster
- Petroleum products such as fuel, oil, and grease

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- Asphalt and concrete components
- Hazardous chemicals such as acids, lime, glues, adhesives, paints, solvents, and curing compounds
- Concrete compounds
- Other materials that may be detrimental if released to the environment

Limitations

- Space limitation may preclude indoor storage.
- Storage sheds often must meet building and fire code requirements.

Implementation

The following steps should be taken to minimize risk:

- Chemicals must be stored in water tight containers with appropriate secondary containment or in a storage shed.
- When a material storage area is located on bare soil, the area should be lined and bermed.
- Use containment pallets or other practical and available solutions, such as storing materials within newly constructed buildings or garages, to meet material storage requirements.
- Stack erodible landscape material on pallets and cover when not in use.
- Contain all fertilizers and other landscape materials when not in use.
- Temporary storage areas should be located away from vehicular traffic.
- Material Safety Data Sheets (MSDS) should be available on-site for all materials stored that have the potential to effect water quality.
- Construction site areas should be designated for material delivery and storage.
- Material delivery and storage areas should be located away from waterways, if possible.
  - Avoid transport near drainage paths or waterways.
  - Surround with earth berms or other appropriate containment BMP. See EC-9, Earth Dikes and Drainage Swales.
  - Place in an area that will be paved.
- Storage of reactive, ignitable, or flammable liquids must comply with the fire codes of your area. Contact the local Fire Marshal to review site materials, quantities, and proposed storage area to determine specific requirements. See the Flammable and Combustible Liquid Code, NFPA30.
- An up to date inventory of materials delivered and stored onsite should be kept.

- Hazardous materials storage onsite should be minimized.
- Hazardous materials should be handled as infrequently as possible.
- Keep ample spill cleanup supplies appropriate for the materials being stored. Ensure that cleanup supplies are in a conspicuous, labeled area.
- Employees and subcontractors should be trained on the proper material delivery and storage practices.
- Employees trained in emergency spill cleanup procedures must be present when dangerous materials or liquid chemicals are unloaded.
- If significant residual materials remain on the ground after construction is complete, properly remove and dispose of materials and any contaminated soil. See WM-7, Contaminated Soil Management. If the area is to be paved, pave as soon as materials are removed to stabilize the soil.

Material Storage Areas and Practices

- Liquids, petroleum products, and substances listed in 40 CFR Parts 110, 117, or 302 should be stored in approved containers and drums and should not be overfilled. Containers and drums should be placed in temporary containment facilities for storage.
- A temporary containment facility should provide for a spill containment volume able to contain precipitation from a 25 year storm event, plus the greater of 10% of the aggregate volume of all containers or 100% of the capacity of the largest container within its boundary, whichever is greater.
- A temporary containment facility should be impervious to the materials stored therein for a minimum contact time of 72 hours.
- A temporary containment facility should be maintained free of accumulated rainwater and spills. In the event of spills or leaks, accumulated rainwater and spills should be collected and placed into drums. These liquids should be handled as a hazardous waste unless testing determines them to be non-hazardous. All collected liquids or non-hazardous liquids should be sent to an approved disposal site.
- Sufficient separation should be provided between stored containers to allow for spill cleanup and emergency response access.
- Incompatible materials, such as chlorine and ammonia, should not be stored in the same temporary containment facility.
- Materials should be covered prior to, and during rain events.
- Materials should be stored in their original containers and the original product labels should be maintained in place in a legible condition. Damaged or otherwise illegible labels should be replaced immediately.

- Bagged and boxed materials should be stored on pallets and should not be allowed to accumulate on the ground. To provide protection from wind and rain throughout the rainy season, bagged and boxed materials should be covered during non-working days and prior to and during rain events.
- Stockpiles should be protected in accordance with WM-3, Stockpile Management.
- Materials should be stored indoors within existing structures or completely enclosed storage sheds when available.
- Proper storage instructions should be posted at all times in an open and conspicuous location.
- An ample supply of appropriate spill clean up material should be kept near storage areas.
- Also see WM-6, Hazardous Waste Management, for storing of hazardous wastes.

Material Delivery Practices

- Keep an accurate, up-to-date inventory of material delivered and stored onsite.
- Arrange for employees trained in emergency spill cleanup procedures to be present when dangerous materials or liquid chemicals are unloaded.

Spill Cleanup

- Contain and clean up any spill immediately.
- Properly remove and dispose of any hazardous materials or contaminated soil if significant residual materials remain on the ground after construction is complete. See WM-7, Contaminated Soil Management.
- See WM-4, Spill Prevention and Control, for spills of chemicals and/or hazardous materials.
- If spills or leaks of materials occur that are not contained and could discharge to surface waters, non-visible sampling of site discharge may be required. Refer to the General Permit or to your project specific Construction Site Monitoring Plan to determine if and where sampling is required.

Cost

- The largest cost of implementation may be in the construction of a materials storage area that is covered and provides secondary containment.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Keep storage areas clean and well organized, including a current list of all materials onsite.
- Inspect labels on containers for legibility and accuracy.

- Repair or replace perimeter controls, containment structures, covers, and liners as needed to maintain proper function.

References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

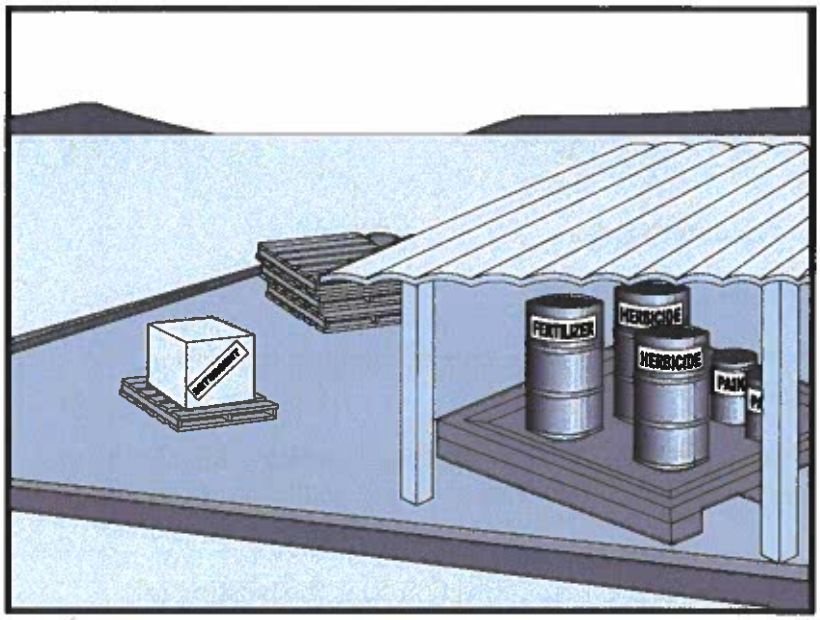
Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance, Working Group Working Paper; USEPA, April 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Material Use

WM-2



Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	☑

Legend:

☑ **Primary Category**

☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose

Prevent or reduce the discharge of pollutants to the storm drain system or watercourses from material use by using alternative products, minimizing hazardous material use onsite, and training employees and subcontractors.

Suitable Applications

This BMP is suitable for use at all construction projects. These procedures apply when the following materials are used or prepared onsite:

- Pesticides and herbicides
- Fertilizers
- Detergents
- Petroleum products such as fuel, oil, and grease
- Asphalt and other concrete components
- Other hazardous chemicals such as acids, lime, glues, adhesives, paints, solvents, and curing compounds
- Other materials that may be detrimental if released to the environment

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Limitations

Safer alternative building and construction products may not be available or suitable in every instance.

Implementation

The following steps should be taken to minimize risk:

- Minimize use of hazardous materials onsite.
- Follow manufacturer instructions regarding uses, protective equipment, ventilation, flammability, and mixing of chemicals.
- Train personnel who use pesticides. The California Department of Pesticide Regulation and county agricultural commissioners license pesticide dealers, certify pesticide applicators, and conduct onsite inspections.
- The preferred method of termiticide application is soil injection near the existing or proposed structure foundation/slab; however, if not feasible, soil drench application of termiticides should follow EPA label guidelines and the following recommendations (most of which are applicable to most pesticide applications):
  - Do not treat soil that is water-saturated or frozen.
  - Application shall not commence within 24-hours of a predicted precipitation event with a 40% or greater probability. Weather tracking must be performed on a daily basis prior to termiticide application and during the period of termiticide application.
  - Do not allow treatment chemicals to runoff from the target area. Apply proper quantity to prevent excess runoff. Provide containment for and divert stormwater from application areas using berms or diversion ditches during application.
  - Dry season: Do not apply within 10 feet of storm drains. Do not apply within 25 feet of aquatic habitats (such as, but not limited to, lakes; reservoirs; rivers; permanent streams; marshes or ponds; estuaries; and commercial fish farm ponds).
  - Wet season: Do not apply within 50 feet of storm drains or aquatic habitats (such as, but not limited to, lakes; reservoirs; rivers; permanent streams; marshes or ponds; estuaries; and commercial fish farm ponds) unless a vegetative buffer is present (if so, refer to dry season requirements).
  - Do not make on-grade applications when sustained wind speeds are above 10 mph (at application site) at nozzle end height.
  - Cover treatment site prior to a rain event in order to prevent run-off of the pesticide into non-target areas. The treated area should be limited to a size that can be backfilled and/or covered by the end of the work shift. Backfilling or covering of the treated area shall be done by the end of the same work shift in which the application is made.
  - The applicator must either cover the soil him/herself or provide written notification of the above requirement to the contractor on site and to the person commissioning the

application (if different than the contractor). If notice is provided to the contractor or the person commissioning the application, then they are responsible under the Federal Insecticide Fungicide, and Rodenticide Act (FIFRA) to ensure that: 1) if the concrete slab cannot be poured over the treated soil within 24 hours of application, the treated soil is covered with a waterproof covering (such as polyethylene sheeting), and 2) the treated soil is covered if precipitation is predicted to occur before the concrete slab is scheduled to be poured.

- Do not over-apply fertilizers, herbicides, and pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Over-application is expensive and environmentally harmful. Unless on steep slopes, till fertilizers into the soil rather than hydraulic application. Apply surface dressings in several smaller applications, as opposed to one large application, to allow time for infiltration and to avoid excess material being carried offsite by runoff. Do not apply these chemicals before predicted rainfall.
- Train employees and subcontractors in proper material use.
- Supply Material Safety Data Sheets (MSDS) for all materials.
- Dispose of latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths, when thoroughly dry and are no longer hazardous, with other construction debris.
- Do not remove the original product label; it contains important safety and disposal information. Use the entire product before disposing of the container.
- Mix paint indoors or in a containment area. Never clean paintbrushes or rinse paint containers into a street, gutter, storm drain, or watercourse. Dispose of any paint thinners, residue, and sludge(s) that cannot be recycled, as hazardous waste.
- For water-based paint, clean brushes to the extent practicable, and rinse to a drain leading to a sanitary sewer where permitted, or contain for proper disposal off site. For oil-based paints, clean brushes to the extent practicable, and filter and reuse thinners and solvents.
- Use recycled and less hazardous products when practical. Recycle residual paints, solvents, non-treated lumber, and other materials.
- Use materials only where and when needed to complete the construction activity. Use safer alternative materials as much as possible. Reduce or eliminate use of hazardous materials onsite when practical.
- Document the location, time, chemicals applied, and applicator's name and qualifications.
- Keep an ample supply of spill clean up material near use areas. Train employees in spill clean up procedures.
- Avoid exposing applied materials to rainfall and runoff unless sufficient time has been allowed for them to dry.
- Discontinue use of erodible landscape material within 2 days prior to a forecasted rain event and materials should be covered and/or bermed.

- Provide containment for material use areas such as masons' areas or paint mixing/preparation areas to prevent materials/pollutants from entering stormwater.

Costs

All of the above are low cost measures.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities.
- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Ensure employees and subcontractors throughout the job are using appropriate practices.

References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

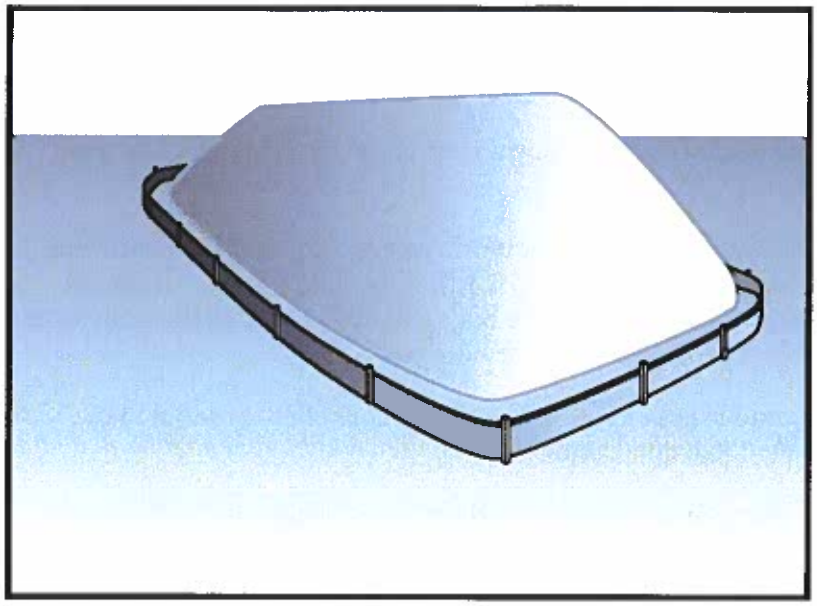
Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance, Working Group Working Paper; USEPA, April 1992.

Comments on Risk Assessments Risk Reduction Options for Cypermethrin: Docket No. OPP–2005–0293; California Stormwater Quality Association (CASQA) letter to USEPA, 2006.Environmental Hazard and General Labeling for Pyrethroid Non-Agricultural Outdoor Products, EPA-HQ-OPP-2008-0331-0021; USEPA, 2008.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Stockpile Management WM-3



Categories		
EC	Erosion Control	
SE	Sediment Control	☒
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	☒
WM	Waste Management and Materials Pollution Control	☑

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Description and Purpose

Stockpile management procedures and practices are designed to reduce or eliminate air and stormwater pollution from stockpiles of soil, soil amendments, sand, paving materials such as portland cement concrete (PCC) rubble, asphalt concrete (AC), asphalt concrete rubble, aggregate base, aggregate sub base or pre-mixed aggregate, asphalt minder (so called "cold mix" asphalt), and pressure treated wood.

Suitable Applications

Implement in all projects that stockpile soil and other loose materials.

Limitations

- Plastic sheeting as a stockpile protection is temporary and hard to manage in windy conditions. Where plastic is used, consider use of plastic tarps with nylon reinforcement which may be more durable than standard sheeting.
- Plastic sheeting can increase runoff volume due to lack of infiltration and potentially cause perimeter control failure.
- Plastic sheeting breaks down faster in sunlight.
- The use of Plastic materials and photodegradable plastics should be avoided.

Implementation

Protection of stockpiles is a year-round requirement. To properly manage stockpiles:

Targeted Constituents	
Sediment	☑
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

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- On larger sites, a minimum of 50 ft separation from concentrated flows of stormwater, drainage courses, and inlets is recommended.
- All stockpiles are required to be protected immediately if they are not scheduled to be used within 14 days.
- Protect all stockpiles from stormwater runon using temporary perimeter sediment barriers such as compost berms (SE-13), temporary silt dikes (SE-12), fiber rolls (SE-5), silt fences (SE-1), sandbags (SE-8), gravel bags (SE-6), or biofilter bags (SE-14). Refer to the individual fact sheet for each of these controls for installation information.
- Implement wind erosion control practices as appropriate on all stockpiled material. For specific information, see WE-1, Wind Erosion Control.
- Manage stockpiles of contaminated soil in accordance with WM-7, Contaminated Soil Management.
- Place bagged materials on pallets and under cover.
- Ensure that stockpile coverings are installed securely to protect from wind and rain.
- Some plastic covers withstand weather and sunlight better than others. Select cover materials or methods based on anticipated duration of use.

Protection of Non-Active Stockpiles

Non-active stockpiles of the identified materials should be protected further as follows:

Soil stockpiles

- Soil stockpiles should be covered or protected with soil stabilization measures and a temporary perimeter sediment barrier at all times.
- Temporary vegetation should be considered for topsoil piles that will be stockpiled for extended periods.

Stockpiles of Portland cement concrete rubble, asphalt concrete, asphalt concrete rubble, aggregate base, or aggregate sub base

- Stockpiles should be covered and protected with a temporary perimeter sediment barrier at all times.

Stockpiles of "cold mix"

- Cold mix stockpiles should be placed on and covered with plastic sheeting or comparable material at all times and surrounded by a berm.

Stockpiles of fly ash, stucco, hydrated lime

- Stockpiles of materials that may raise the pH of runoff (i.e., basic materials) should be covered with plastic and surrounded by a berm.

Stockpiles/Storage of wood (Pressure treated with chromated copper arsenate or ammoniacal copper zinc arsenate

- Treated wood should be covered with plastic sheeting or comparable material at all times and surrounded by a berm.

Protection of Active Stockpiles

Active stockpiles of the identified materials should be protected as follows:

- All stockpiles should be covered and protected with a temporary linear sediment barrier prior to the onset of precipitation.
- Stockpiles of "cold mix" and treated wood, and basic materials should be placed on and covered with plastic sheeting or comparable material and surrounded by a berm prior to the onset of precipitation.
- The downstream perimeter of an active stockpile should be protected with a linear sediment barrier or berm and runoff should be diverted around or away from the stockpile on the upstream perimeter.

Costs

For cost information associated with stockpile protection refer to the individual erosion or sediment control BMP fact sheet considered for implementation (For example, refer to SE-1 Silt Fence for installation of silt fence around the perimeter of a stockpile.)

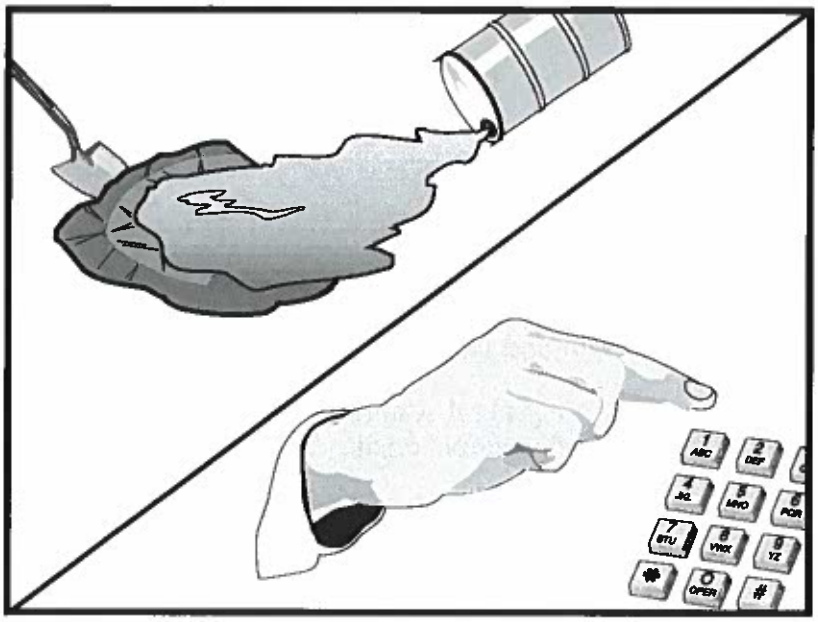
Inspection and Maintenance

- Stockpiles must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- It may be necessary to inspect stockpiles covered with plastic sheeting more frequently during certain conditions (for example, high winds or extreme heat).
- Repair and/or replace perimeter controls and covers as needed to keep them functioning properly.
- Sediment shall be removed when it reaches one-third of the barrier height.

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Spill Prevention and Control WM-4



Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	☑

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose

Prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

This best management practice covers only spill prevention and control. However, WM-1, Materials Delivery and Storage, and WM-2, Material Use, also contain useful information, particularly on spill prevention. For information on wastes, see the waste management BMPs in this section.

Suitable Applications

This BMP is suitable for all construction projects. Spill control procedures are implemented anytime chemicals or hazardous substances are stored on the construction site, including the following materials:

- Soil stabilizers/binders
- Dust palliatives
- Herbicides
- Growth inhibitors
- Fertilizers
- Deicing/anti-icing chemicals

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- Fuels
- Lubricants
- Other petroleum distillates

Limitations

- In some cases it may be necessary to use a private spill cleanup company.
- This BMP applies to spills caused by the contractor and subcontractors.
- Procedures and practices presented in this BMP are general. Contractor should identify appropriate practices for the specific materials used or stored onsite

Implementation

The following steps will help reduce the stormwater impacts of leaks and spills:

Education

- Be aware that different materials pollute in different amounts. Make sure that each employee knows what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills.
- Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.
- Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
- Establish a continuing education program to indoctrinate new employees.
- Have contractor's superintendent or representative oversee and enforce proper spill prevention and control measures.

General Measures

- To the extent that the work can be accomplished safely, spills of oil, petroleum products, substances listed under 40 CFR parts 110,117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.
- Store hazardous materials and wastes in covered containers and protect from vandalism.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Train employees in spill prevention and cleanup.
- Designate responsible individuals to oversee and enforce control measures.
- Spills should be covered and protected from stormwater runon during rainfall to the extent that it doesn't compromise clean up activities.
- Do not bury or wash spills with water.

- Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.
- Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with WM-10, Liquid Waste Management.
- Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.
- Place proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.
- Keep waste storage areas clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

Cleanup

- Clean up leaks and spills immediately.
- Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to either a certified laundry (rags) or disposed of as hazardous waste.
- Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMPs in this section for specific information.

Minor Spills

- Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.
- Use absorbent materials on small spills rather than hosing down or burying the spill.
- Absorbent materials should be promptly removed and disposed of properly.
- Follow the practice below for a minor spill:
  - Contain the spread of the spill.
  - Recover spilled materials.
  - Clean the contaminated area and properly dispose of contaminated materials.

Semi-Significant Spills

- Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.

- Spills should be cleaned up immediately:
  - Contain spread of the spill.
  - Notify the project foreman immediately.
  - If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
  - If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
  - If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

Significant/Hazardous Spills

- For significant or hazardous spills that cannot be controlled by personnel in the immediate vicinity, the following steps should be taken:
  - Notify the local emergency response by dialing 911. In addition to 911, the contractor will notify the proper county officials. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
  - Notify the Governor's Office of Emergency Services Warning Center, (916) 845-8911.
  - For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, the contractor should notify the National Response Center at (800) 424-8802.
  - Notification should first be made by telephone and followed up with a written report.
  - The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.
  - Other agencies which may need to be consulted include, but are not limited to, the Fire Department, the Public Works Department, the Coast Guard, the Highway Patrol, the City/County Police Department, Department of Toxic Substances, California Division of Oil and Gas, Cal/OSHA, etc.

Reporting

- Report significant spills to local agencies, such as the Fire Department; they can assist in cleanup.
- Federal regulations require that any significant oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hours).

Use the following measures related to specific activities:

Vehicle and Equipment Maintenance

- If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the runon of stormwater and the runoff of spills.
- Regularly inspect onsite vehicles and equipment for leaks and repair immediately
- Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
- Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- Place drip pans or absorbent materials under paving equipment when not in use.
- Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.
- Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around
- Oil filters disposed of in trashcans or dumpsters can leak oil and pollute stormwater. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask the oil supplier or recycler about recycling oil filters.
- Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

- If fueling must occur onsite, use designate areas, located away from drainage courses, to prevent the runon of stormwater and the runoff of spills.
- Discourage "topping off" of fuel tanks.
- Always use secondary containment, such as a drain pan, when fueling to catch spills/ leaks.

Costs

Prevention of leaks and spills is inexpensive. Treatment and/ or disposal of contaminated soil or water can be quite expensive.

Inspection and Maintenance

- Inspect and verify that activity–based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur.

- Keep ample supplies of spill control and cleanup materials onsite, near storage, unloading, and maintenance areas.
- Update your spill prevention and control plan and stock cleanup materials as changes occur in the types of chemicals onsite.

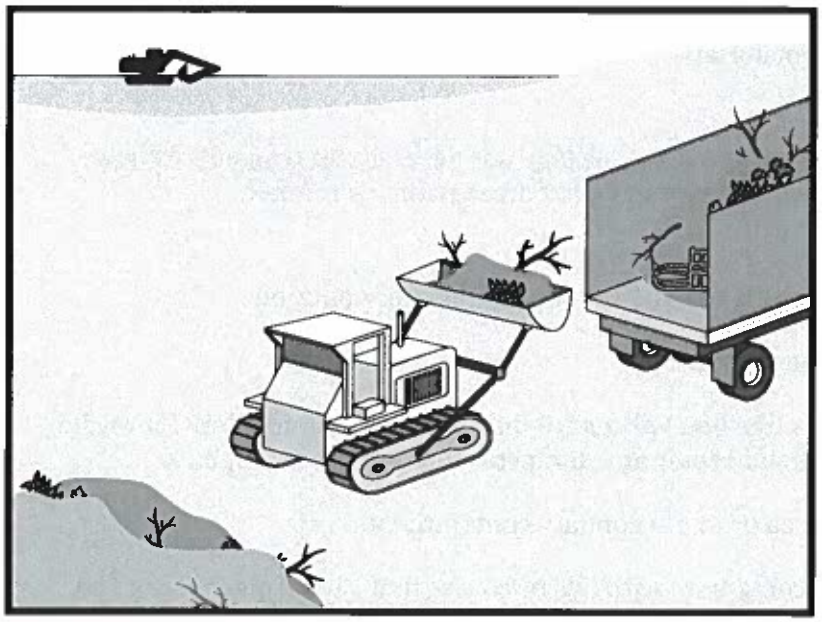
References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Solid Waste Management WM-5



Categories

EC	Erosion Control	
SE	Sediment Control	
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WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	☑

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose

Solid waste management procedures and practices are designed to prevent or reduce the discharge of pollutants to stormwater from solid or construction waste by providing designated waste collection areas and containers, arranging for regular disposal, and training employees and subcontractors.

Suitable Applications

This BMP is suitable for construction sites where the following wastes are generated or stored:

- Solid waste generated from trees and shrubs removed during land clearing, demolition of existing structures (rubble), and building construction
- Packaging materials including wood, paper, and plastic
- Scrap or surplus building materials including scrap metals, rubber, plastic, glass pieces and masonry products
- Domestic wastes including food containers such as beverage cans, coffee cups, paper bags, plastic wrappers, and cigarettes
- Construction wastes including brick, mortar, timber, steel and metal scraps, pipe and electrical cuttings, non-hazardous equipment parts, styrofoam and other materials used to transport and package construction materials
- Highway planting wastes, including vegetative material,

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plant containers, and packaging materials

Limitations

Temporary stockpiling of certain construction wastes may not necessitate stringent drainage related controls during the non-rainy season or in desert areas with low rainfall.

Implementation

The following steps will help keep a clean site and reduce stormwater pollution:

- Select designated waste collection areas onsite.
- Inform trash-hauling contractors that you will accept only watertight dumpsters for onsite use. Inspect dumpsters for leaks and repair any dumpster that is not watertight.
- Locate containers in a covered area or in a secondary containment.
- Provide an adequate number of containers with lids or covers that can be placed over the container to keep rain out or to prevent loss of wastes when it is windy.
- Plan for additional containers and more frequent pickup during the demolition phase of construction.
- Collect site trash daily, especially during rainy and windy conditions.
- Remove this solid waste promptly since erosion and sediment control devices tend to collect litter.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Do not hose out dumpsters on the construction site. Leave dumpster cleaning to the trash hauling contractor.
- Arrange for regular waste collection before containers overflow.
- Clean up immediately if a container does spill.
- Make sure that construction waste is collected, removed, and disposed of only at authorized disposal areas.

Education

- Have the contractor's superintendent or representative oversee and enforce proper solid waste management procedures and practices.
- Instruct employees and subcontractors on identification of solid waste and hazardous waste.
- Educate employees and subcontractors on solid waste storage and disposal procedures.
- Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meetings).

- Require that employees and subcontractors follow solid waste handling and storage procedures.
- Prohibit littering by employees, subcontractors, and visitors.
- Minimize production of solid waste materials wherever possible.

Collection, Storage, and Disposal

- Littering on the project site should be prohibited.
- To prevent clogging of the storm drainage system, litter and debris removal from drainage grates, trash racks, and ditch lines should be a priority.
- Trash receptacles should be provided in the contractor's yard, field trailer areas, and at locations where workers congregate for lunch and break periods.
- Litter from work areas within the construction limits of the project site should be collected and placed in watertight dumpsters at least weekly, regardless of whether the litter was generated by the contractor, the public, or others. Collected litter and debris should not be placed in or next to drain inlets, stormwater drainage systems, or watercourses.
- Dumpsters of sufficient size and number should be provided to contain the solid waste generated by the project.
- Full dumpsters should be removed from the project site and the contents should be disposed of by the trash hauling contractor.
- Construction debris and waste should be removed from the site biweekly or more frequently as needed.
- Construction material visible to the public should be stored or stacked in an orderly manner.
- Stormwater runon should be prevented from contacting stored solid waste through the use of berms, dikes, or other temporary diversion structures or through the use of measures to elevate waste from site surfaces.
- Solid waste storage areas should be located at least 50 ft from drainage facilities and watercourses and should not be located in areas prone to flooding or ponding.
- Except during fair weather, construction and highway planting waste not stored in watertight dumpsters should be securely covered from wind and rain by covering the waste with tarps or plastic.
- Segregate potentially hazardous waste from non-hazardous construction site waste.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- For disposal of hazardous waste, see WM-6, Hazardous Waste Management. Have hazardous waste hauled to an appropriate disposal and/or recycling facility.

- Salvage or recycle useful vegetation debris, packaging and surplus building materials when practical. For example, trees and shrubs from land clearing can be used as a brush barrier, or converted into wood chips, then used as mulch on graded areas. Wood pallets, cardboard boxes, and construction scraps can also be recycled.

Costs

All of the above are low cost measures.

Inspection and Maintenance

- Inspect and verify that activity–based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur
- Inspect construction waste area regularly.
- Arrange for regular waste collection.

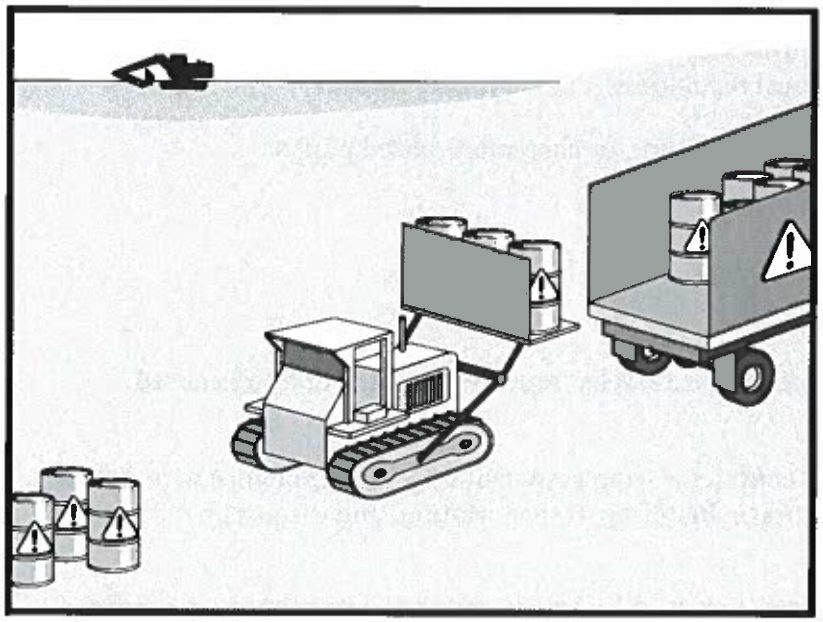
References

Processes, Procedures and Methods to Control Pollution Resulting from All Construction Activity, 430/9-73-007, USEPA, 1973.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Hazardous Waste Management WM-6



Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	☑

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	☑
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose

Prevent or reduce the discharge of pollutants to stormwater from hazardous waste through proper material use, waste disposal, and training of employees and subcontractors.

Suitable Applications

This best management practice (BMP) applies to all construction projects. Hazardous waste management practices are implemented on construction projects that generate waste from the use of:

- Petroleum Products
- Asphalt Products
- Concrete Curing Compounds
- Pesticides
- Palliatives
- Acids
- Septic Wastes
- Paints
- Stains
- Solvents
- Wood Preservatives
- Roofing Tar
- Any materials deemed a hazardous waste in California, Title 22 Division 4.5, or listed in 40 CFR Parts 110, 117, 261, or 302

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In addition, sites with existing structures may contain wastes, which must be disposed of in accordance with federal, state, and local regulations. These wastes include:

- Sandblasting grit mixed with lead-, cadmium-, or chromium-based paints
- Asbestos
- PCBs (particularly in older transformers)

Limitations

- Hazardous waste that cannot be reused or recycled must be disposed of by a licensed hazardous waste hauler.
- Nothing in this BMP relieves the contractor from responsibility for compliance with federal, state, and local laws regarding storage, handling, transportation, and disposal of hazardous wastes.
- This BMP does not cover aerially deposited lead (ADL) soils. For ADL soils refer to WM-7, Contaminated Soil Management.

Implementation

The following steps will help reduce stormwater pollution from hazardous wastes:

Material Use

- Wastes should be stored in sealed containers constructed of a suitable material and should be labeled as required by Title 22 CCR, Division 4.5 and 49 CFR Parts 172, 173, 178, and 179.
- All hazardous waste should be stored, transported, and disposed as required in Title 22 CCR, Division 4.5 and 49 CFR 261-263.
- Waste containers should be stored in temporary containment facilities that should comply with the following requirements:
  - Temporary containment facility should provide for a spill containment volume equal to 1.5 times the volume of all containers able to contain precipitation from a 25 year storm event, plus the greater of 10% of the aggregate volume of all containers or 100% of the capacity of the largest tank within its boundary, whichever is greater.
  - Temporary containment facility should be impervious to the materials stored there for a minimum contact time of 72 hours.
  - Temporary containment facilities should be maintained free of accumulated rainwater and spills. In the event of spills or leaks, accumulated rainwater and spills should be placed into drums after each rainfall. These liquids should be handled as a hazardous waste unless testing determines them to be non-hazardous. Non-hazardous liquids should be sent to an approved disposal site.
  - Sufficient separation should be provided between stored containers to allow for spill cleanup and emergency response access.

  - Incompatible materials, such as chlorine and ammonia, should not be stored in the same temporary containment facility.

  - Throughout the rainy season, temporary containment facilities should be covered during non-working days, and prior to rain events. Covered facilities may include use of plastic tarps for small facilities or constructed roofs with overhangs.

- Drums should not be overfilled and wastes should not be mixed.

- Unless watertight, containers of dry waste should be stored on pallets.

- Do not over-apply herbicides and pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Over application is expensive and environmentally harmful. Apply surface dressings in several smaller applications, as opposed to one large application. Allow time for infiltration and avoid excess material being carried offsite by runoff. Do not apply these chemicals just before it rains. People applying pesticides must be certified in accordance with federal and state regulations.

- Paint brushes and equipment for water and oil based paints should be cleaned within a contained area and should not be allowed to contaminate site soils, watercourses, or drainage systems. Waste paints, thinners, solvents, residues, and sludges that cannot be recycled or reused should be disposed of as hazardous waste. When thoroughly dry, latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths should be disposed of as solid waste.

- Do not clean out brushes or rinse paint containers into the dirt, street, gutter, storm drain, or stream. "Paint out" brushes as much as possible. Rinse water-based paints to the sanitary sewer. Filter and reuse thinners and solvents. Dispose of excess oil-based paints and sludge as hazardous waste.

- The following actions should be taken with respect to temporary contaminant:

  - Ensure that adequate hazardous waste storage volume is available.

  - Ensure that hazardous waste collection containers are conveniently located.

  - Designate hazardous waste storage areas onsite away from storm drains or watercourses and away from moving vehicles and equipment to prevent accidental spills.

  - Minimize production or generation of hazardous materials and hazardous waste on the job site.

  - Use containment berms in fueling and maintenance areas and where the potential for spills is high.

  - Segregate potentially hazardous waste from non-hazardous construction site debris.

  - Keep liquid or semi-liquid hazardous waste in appropriate containers (closed drums or similar) and under cover.

- Clearly label all hazardous waste containers with the waste being stored and the date of accumulation.
- Place hazardous waste containers in secondary containment.
- Do not allow potentially hazardous waste materials to accumulate on the ground.
- Do not mix wastes.
- Use all of the product before disposing of the container.
- Do not remove the original product label; it contains important safety and disposal information.

Waste Recycling Disposal

- Select designated hazardous waste collection areas onsite.
- Hazardous materials and wastes should be stored in covered containers and protected from vandalism.
- Place hazardous waste containers in secondary containment.
- Do not mix wastes, this can cause chemical reactions, making recycling impossible and complicating disposal.
- Recycle any useful materials such as used oil or water-based paint.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Arrange for regular waste collection before containers overflow.
- Make sure that hazardous waste (e.g., excess oil-based paint and sludge) is collected, removed, and disposed of only at authorized disposal areas.

Disposal Procedures

- Waste should be disposed of by a licensed hazardous waste transporter at an authorized and licensed disposal facility or recycling facility utilizing properly completed Uniform Hazardous Waste Manifest forms.
- A Department of Health Services certified laboratory should sample waste to determine the appropriate disposal facility.
- Properly dispose of rainwater in secondary containment that may have mixed with hazardous waste.
- Attention is directed to "Hazardous Material", "Contaminated Material", and "Aerially Deposited Lead" of the contract documents regarding the handling and disposal of hazardous materials.

Education

- Educate employees and subcontractors on hazardous waste storage and disposal procedures.
- Educate employees and subcontractors on potential dangers to humans and the environment from hazardous wastes.
- Instruct employees and subcontractors on safety procedures for common construction site hazardous wastes.
- Instruct employees and subcontractors in identification of hazardous and solid waste.
- Hold regular meetings to discuss and reinforce hazardous waste management procedures (incorporate into regular safety meetings).
- The contractor's superintendent or representative should oversee and enforce proper hazardous waste management procedures and practices.
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.
- Warning signs should be placed in areas recently treated with chemicals.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- If a container does spill, clean up immediately.

Costs

All of the above are low cost measures.

Inspection and Maintenance

- Inspect and verify that activity–based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur
- Hazardous waste should be regularly collected.
- A foreman or construction supervisor should monitor onsite hazardous waste storage and disposal procedures.
- Waste storage areas should be kept clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored.
- Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.
- Hazardous spills should be cleaned up and reported in conformance with the applicable Material Safety Data Sheet (MSDS) and the instructions posted at the project site.

- The National Response Center, at (800) 424-8802, should be notified of spills of federal reportable quantities in conformance with the requirements in 40 CFR parts 110, 117, and 302. Also notify the Governors Office of Emergency Services Warning Center at (916) 845-8911.
- A copy of the hazardous waste manifests should be provided.

References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Processes, Procedures and Methods to Control Pollution Resulting from All Construction Activity, 430/9-73-007, USEPA, 1973.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Contaminated Soil Management WM-7

Categories		
EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	☑

Legend:
☑ **Primary Objective**
☒ **Secondary Objective**

Description and Purpose

Prevent or reduce the discharge of pollutants to stormwater from contaminated soil and highly acidic or alkaline soils by conducting pre-construction surveys, inspecting excavations regularly, and remediating contaminated soil promptly.

Suitable Applications

Contaminated soil management is implemented on construction projects in highly urbanized or industrial areas where soil contamination may have occurred due to spills, illicit discharges, aerial deposition, past use and leaks from underground storage tanks.

Limitations

Contaminated soils that cannot be treated onsite must be disposed of offsite by a licensed hazardous waste hauler. The presence of contaminated soil may indicate contaminated water as well. See NS-2, Dewatering Operations, for more information.

The procedures and practices presented in this BMP are general. The contractor should identify appropriate practices and procedures for the specific contaminants known to exist or discovered onsite.

Implementation

Most owners and developers conduct pre-construction environmental assessments as a matter of routine. Contaminated soils are often identified during project planning and development with known locations identified in the plans, specifications and in the SWPPP. The contractor should review applicable reports and investigate appropriate call-outs in the

Targeted Constituents	
Sediment	
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	☑
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

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plans, specifications, and SWPPP. Recent court rulings holding contractors liable for cleanup costs when they unknowingly move contaminated soil highlight the need for contractors to confirm a site assessment is completed before earth moving begins.

The following steps will help reduce stormwater pollution from contaminated soil:

- Conduct thorough, pre-construction inspections of the site and review documents related to the site. If inspection or reviews indicated presence of contaminated soils, develop a plan before starting work.
- Look for contaminated soil as evidenced by discoloration, odors, differences in soil properties, abandoned underground tanks or pipes, or buried debris.
- Prevent leaks and spills. Contaminated soil can be expensive to treat and dispose of properly. However, addressing the problem before construction is much less expensive than after the structures are in place.
- The contractor may further identify contaminated soils by investigating:
  - Past site uses and activities
  - Detected or undetected spills and leaks
  - Acid or alkaline solutions from exposed soil or rock formations high in acid or alkaline forming elements
  - Contaminated soil as evidenced by discoloration, odors, differences in soil properties, abandoned underground tanks or pipes, or buried debris.
  - Suspected soils should be tested at a certified laboratory.

Education

- Have employees and subcontractors complete a safety training program which meets 29 CFR 1910.120 and 8 CCR 5192 covering the potential hazards as identified, prior to performing any excavation work at the locations containing material classified as hazardous.
- Educate employees and subcontractors in identification of contaminated soil and on contaminated soil handling and disposal procedures.
- Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meetings).

Handling Procedures for Material with Aerially Deposited Lead (ADL)

- Materials from areas designated as containing (ADL) may, if allowed by the contract special provisions, be excavated, transported, and used in the construction of embankments and/or backfill.
- Excavation, transportation, and placement operations should result in no visible dust.
- Caution should be exercised to prevent spillage of lead containing material during transport.

- Quality should be monitored during excavation of soils contaminated with lead.

Handling Procedures for Contaminated Soils

- Minimize onsite storage. Contaminated soil should be disposed of properly in accordance with all applicable regulations. All hazardous waste storage will comply with the requirements in Title 22, CCR, Sections 66265.250 to 66265.260.
- Test suspected soils at an approved certified laboratory.
- Work with the local regulatory agencies to develop options for treatment or disposal if the soil is contaminated.
- Avoid temporary stockpiling of contaminated soils or hazardous material.
- Take the following precautions if temporary stockpiling is necessary:
  - Cover the stockpile with plastic sheeting or tarps.
  - Install a berm around the stockpile to prevent runoff from leaving the area.
  - Do not stockpile in or near storm drains or watercourses.
- Remove contaminated material and hazardous material on exteriors of transport vehicles and place either into the current transport vehicle or into the excavation prior to the vehicle leaving the exclusion zone.
- Monitor the air quality continuously during excavation operations at all locations containing hazardous material.
- Procure all permits and licenses, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the work, including registration for transporting vehicles carrying the contaminated material and the hazardous material.
- Collect water from decontamination procedures and treat or dispose of it at an appropriate disposal site.
- Collect non-reusable protective equipment, once used by any personnel, and dispose of at an appropriate disposal site.
- Install temporary security fence to surround and secure the exclusion zone. Remove fencing when no longer needed.
- Excavate, transport, and dispose of contaminated material and hazardous material in accordance with the rules and regulations of the following agencies (the specifications of these agencies supersede the procedures outlined in this BMP):
  - United States Department of Transportation (USDOT)
  - United States Environmental Protection Agency (USEPA)
  - California Environmental Protection Agency (CAL-EPA)

- California Division of Occupation Safety and Health Administration (CAL-OSHA)
- Local regulatory agencies

Procedures for Underground Storage Tank Removals

- Prior to commencing tank removal operations, obtain the required underground storage tank removal permits and approval from the federal, state, and local agencies that have jurisdiction over such work.
- To determine if it contains hazardous substances, arrange to have tested, any liquid or sludge found in the underground tank prior to its removal.
- Following the tank removal, take soil samples beneath the excavated tank and perform analysis as required by the local agency representative(s).
- The underground storage tank, any liquid or sludge found within the tank, and all contaminated substances and hazardous substances removed during the tank removal and transported to disposal facilities permitted to accept such waste.

Water Control

- All necessary precautions and preventive measures should be taken to prevent the flow of water, including ground water, from mixing with hazardous substances or underground storage tank excavations. Such preventative measures may consist of, but are not limited to, berms, cofferdams, grout curtains, freeze walls, and seal course concrete or any combination thereof.
- If water does enter an excavation and becomes contaminated, such water, when necessary to proceed with the work, should be discharged to clean, closed top, watertight transportable holding tanks, treated, and disposed of in accordance with federal, state, and local laws.

Costs

Prevention of leaks and spills is inexpensive. Treatment or disposal of contaminated soil can be quite expensive.

Inspection and Maintenance

- Inspect and verify that activity–based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Arrange for contractor's Water Pollution Control Manager, foreman, and/or construction supervisor to monitor onsite contaminated soil storage and disposal procedures.
- Monitor air quality continuously during excavation operations at all locations containing hazardous material.
- Coordinate contaminated soils and hazardous substances/waste management with the appropriate federal, state, and local agencies.

- Implement WM-4, Spill Prevention and Control, to prevent leaks and spills as much as possible.

References

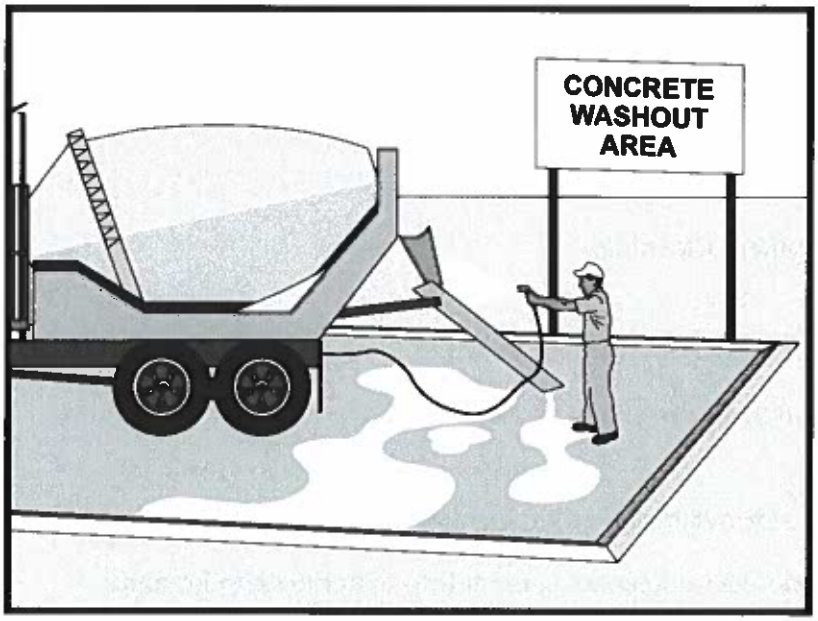
Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Processes, Procedures and Methods to Control Pollution Resulting from All Construction Activity, 430/9-73-007, USEPA, 1973.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Concrete Waste Management WM-8



Categories		
EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	☒
WM	Waste Management and Materials Pollution Control	☑

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Targeted Constituents	
Sediment	☑
Nutrients	
Trash	
Metals	☑
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

Description and Purpose

Prevent the discharge of pollutants to stormwater from concrete waste by conducting washout onsite or offsite in a designated area, and by employee and subcontractor training.

The General Permit incorporates Numeric Effluent Limits (NEL) and Numeric Action Levels (NAL) for pH (see Section 2 of this handbook to determine your project's risk level and if you are subject to these requirements).

Many types of construction materials, including mortar, concrete, stucco, cement and block and their associated wastes have basic chemical properties that can raise pH levels outside of the permitted range. Additional care should be taken when managing these materials to prevent them from coming into contact with stormwater flows and raising pH to levels outside the accepted range.

Suitable Applications

Concrete waste management procedures and practices are implemented on construction projects where:

- Concrete is used as a construction material or where concrete dust and debris result from demolition activities.
- Slurries containing portland cement concrete (PCC) are generated, such as from saw cutting, coring, grinding, grooving, and hydro-concrete demolition.

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- Concrete trucks and other concrete-coated equipment are washed onsite.
- Mortar-mixing stations exist.
- Stucco mixing and spraying .
- See also NS-8, Vehicle and Equipment Cleaning.

Limitations

- Offsite washout of concrete wastes may not always be possible.
- Multiple washouts may be needed to assure adequate capacity and to allow for evaporation.

Implementation

The following steps will help reduce stormwater pollution from concrete wastes:

- Incorporate requirements for concrete waste management into material supplier and subcontractor agreements.
- Store dry and wet materials under cover, away from drainage areas. Refer to WM-1, Material Delivery and Storage for more information.
- Avoid mixing excess amounts of concrete.
- Perform washout of concrete trucks in designated areas only, where washout will not reach stormwater.
- Do not wash out concrete trucks into storm drains, open ditches, streets, streams or onto the ground. Trucks should always be washed out into designated facilities.
- Do not allow excess concrete to be dumped onsite, except in designated areas.
- For onsite washout:
  - On larger sites, it is recommended to locate washout areas at least 50 feet from storm drains, open ditches, or water bodies. Do not allow runoff from this area by constructing a temporary pit or bermed area large enough for liquid and solid waste.
  - Washout wastes into the temporary washout where the concrete can set, be broken up, and then disposed properly.
  - Washout should be lined so there is no discharge into the underlying soil.
- Do not wash sweepings from exposed aggregate concrete into the street or storm drain. Collect and return sweepings to aggregate base stockpile or dispose in the trash.
- See typical concrete washout installation details at the end of this fact sheet.

Education

- Educate employees, subcontractors, and suppliers on the concrete waste management techniques described herein.

- Arrange for contractor's superintendent or representative to oversee and enforce concrete waste management procedures.
- Discuss the concrete management techniques described in this BMP (such as handling of concrete waste and washout) with the ready-mix concrete supplier before any deliveries are made.

Concrete Demolition Wastes

- Stockpile concrete demolition waste in accordance with BMP WM-3, Stockpile Management.
- Dispose of or recycle hardened concrete waste in accordance with applicable federal, state or local regulations.

Concrete Slurry Wastes

- PCC and AC waste should not be allowed to enter storm drains or watercourses.
- PCC and AC waste should be collected and disposed of or placed in a temporary concrete washout facility (as described in Onsite Temporary Concrete Washout Facility, Concrete Transit Truck Washout Procedures, below).
- A foreman or construction supervisor should monitor onsite concrete working tasks, such as saw cutting, coring, grinding and grooving to ensure proper methods are implemented.
- Saw-cut concrete slurry should not be allowed to enter storm drains or watercourses. Residue from grinding operations should be picked up by means of a vacuum attachment to the grinding machine or by sweeping. Saw cutting residue should not be allowed to flow across the pavement and should not be left on the surface of the pavement. See also NS-3, Paving and Grinding Operations; and WM-10, Liquid Waste Management.
- Concrete slurry residue should be disposed in a temporary washout facility (as described in Onsite Temporary Concrete Washout Facility, Concrete Transit Truck Washout Procedures, below) and allowed to dry. Dispose of dry slurry residue in accordance with WM-5, Solid Waste Management.

Onsite Temporary Concrete Washout Facility, Transit Truck Washout Procedures

- Temporary concrete washout facilities should be located a minimum of 50 ft from storm drain inlets, open drainage facilities, and watercourses. Each facility should be located away from construction traffic or access areas to prevent disturbance or tracking.
- A sign should be installed adjacent to each washout facility to inform concrete equipment operators to utilize the proper facilities.
- Temporary concrete washout facilities should be constructed above grade or below grade at the option of the contractor. Temporary concrete washout facilities should be constructed and maintained in sufficient quantity and size to contain all liquid and concrete waste generated by washout operations.

- Temporary washout facilities should have a temporary pit or bermed areas of sufficient volume to completely contain all liquid and waste concrete materials generated during washout procedures.
- Temporary washout facilities should be lined to prevent discharge to the underlying ground or surrounding area.
- Washout of concrete trucks should be performed in designated areas only.
- Only concrete from mixer truck chutes should be washed into concrete wash out.
- Concrete washout from concrete pumper bins can be washed into concrete pumper trucks and discharged into designated washout area or properly disposed of or recycled offsite.
- Once concrete wastes are washed into the designated area and allowed to harden, the concrete should be broken up, removed, and disposed of per WM-5, Solid Waste Management. Dispose of or recycle hardened concrete on a regular basis.
- Temporary Concrete Washout Facility (Type Above Grade)
  - Temporary concrete washout facility (type above grade) should be constructed as shown on the details at the end of this BMP, with a recommended minimum length and minimum width of 10 ft; however, smaller sites or jobs may only need a smaller washout facility. With any washout, always maintain a sufficient quantity and volume to contain all liquid and concrete waste generated by washout operations.
  - Materials used to construct the washout area should conform to the provisions detailed in their respective BMPs (e.g., SE-8 Sandbag Barrier).
  - Plastic lining material should be a minimum of 10 mil in polyethylene sheeting and should be free of holes, tears, or other defects that compromise the impermeability of the material.
  - Alternatively, portable removable containers can be used as above grade concrete washouts. Also called a "roll-off"; this concrete washout facility should be properly sealed to prevent leakage, and should be removed from the site and replaced when the container reaches 75% capacity.
- Temporary Concrete Washout Facility (Type Below Grade)
  - Temporary concrete washout facilities (type below grade) should be constructed as shown on the details at the end of this BMP, with a recommended minimum length and minimum width of 10 ft. The quantity and volume should be sufficient to contain all liquid and concrete waste generated by washout operations.
  - Lath and flagging should be commercial type.
  - Plastic lining material should be a minimum of 10 mil polyethylene sheeting and should be free of holes, tears, or other defects that compromise the impermeability of the material.

- The base of a washout facility should be free of rock or debris that may damage a plastic liner.

Removal of Temporary Concrete Washout Facilities

- When temporary concrete washout facilities are no longer required for the work, the hardened concrete should be removed and properly disposed or recycled in accordance with federal, state or local regulations. Materials used to construct temporary concrete washout facilities should be removed from the site of the work and properly disposed or recycled in accordance with federal, state or local regulations..

- Holes, depressions or other ground disturbance caused by the removal of the temporary concrete washout facilities should be backfilled and repaired.

Costs

All of the above are low cost measures. Roll-off concrete washout facilities can be more costly than other measures due to removal and replacement; however, provide a cleaner alternative to traditional washouts. The type of washout facility, size, and availability of materials will determine the cost of the washout.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.

- Temporary concrete washout facilities should be maintained to provide adequate holding capacity with a minimum freeboard of 4 in. for above grade facilities and 12 in. for below grade facilities. Maintaining temporary concrete washout facilities should include removing and disposing of hardened concrete and returning the facilities to a functional condition. Hardened concrete materials should be removed and properly disposed or recycled in accordance with federal, state or local regulations.

- Washout facilities must be cleaned, or new facilities must be constructed and ready for use once the washout is 75% full.

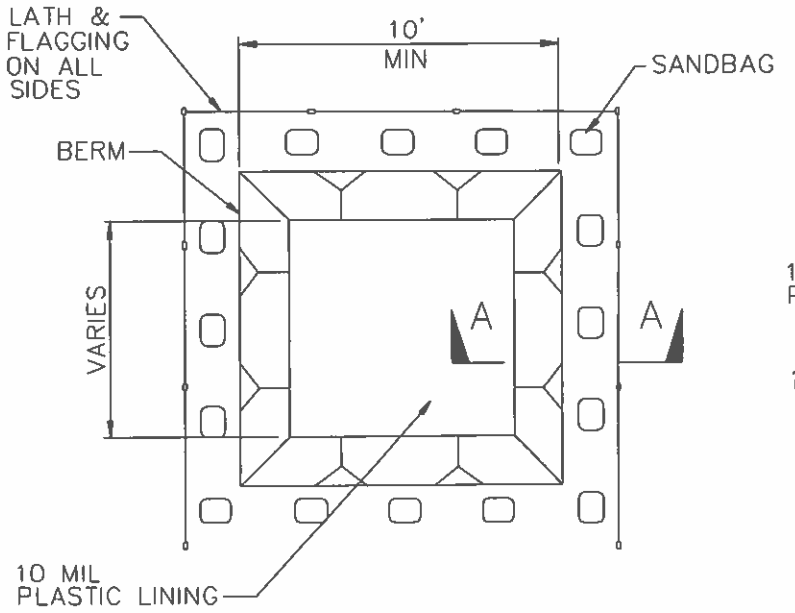
- Inspect washout facilities for damage (e.g. torn liner, evidence of leaks, signage, etc.). Repair all identified damage.

References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000, Updated March 2003.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.



PLAN
NOT TO SCALE
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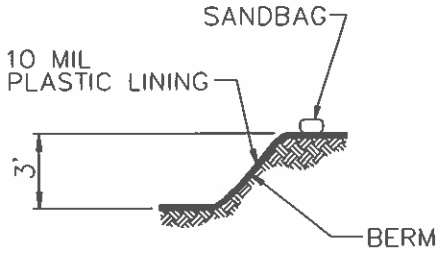
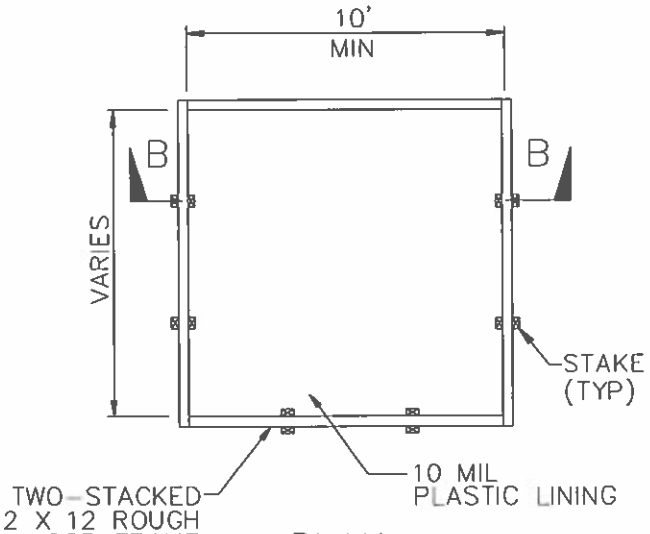
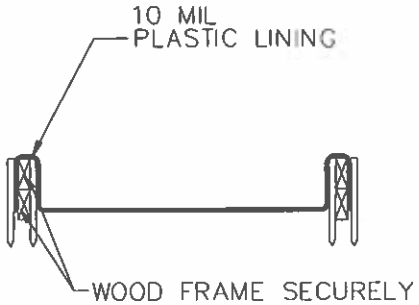


SECTION A–A
NOT TO SCALE



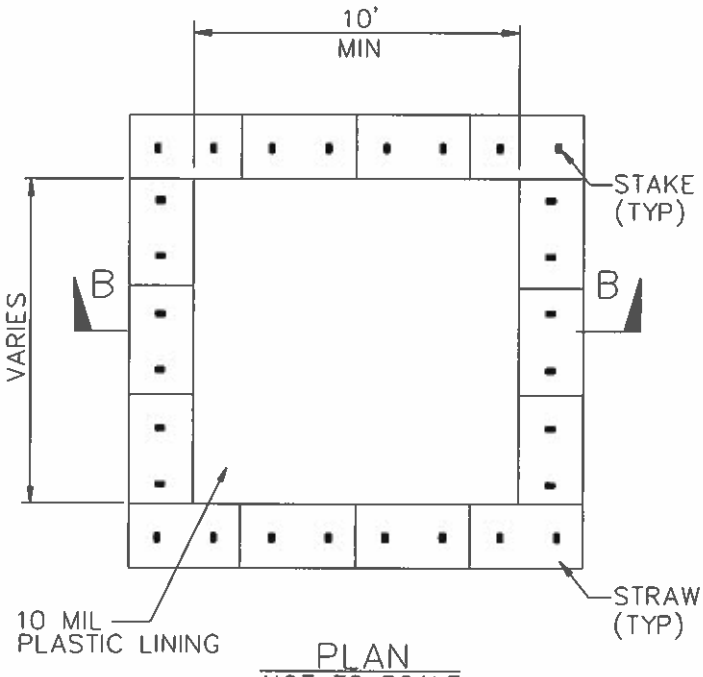
PLAN
NOT TO SCALE
TYPE "ABOVE GRADE"



SECTION B–B
NOT TO SCALE

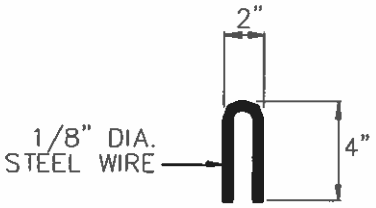
NOTES

1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

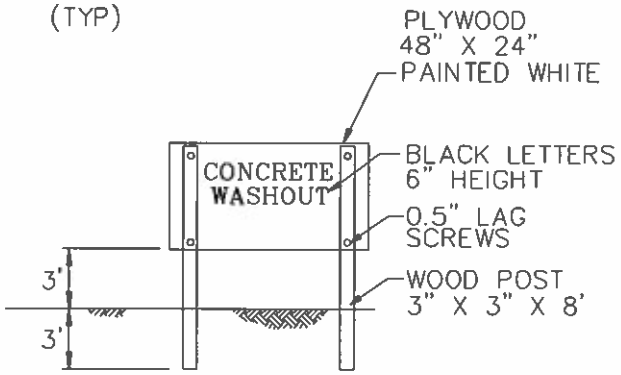


PLAN
NOT TO SCALE

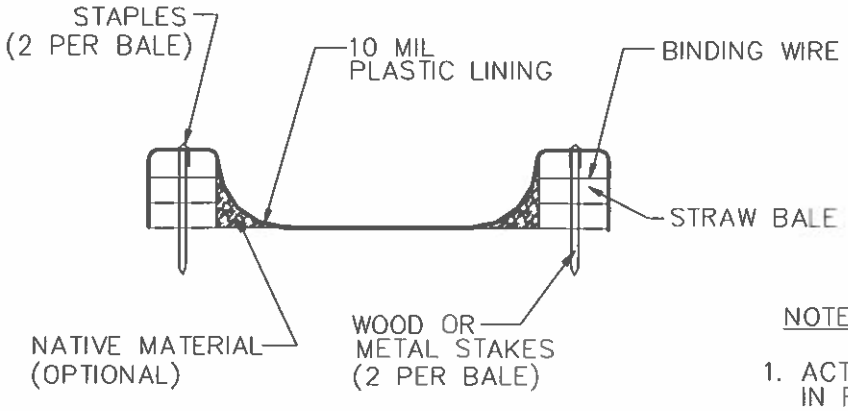
TYPE "ABOVE GRADE"
WITH STRAW BALES



STAPLE DETAIL



CONCRETE WASHOUT
SIGN DETAIL
(OR EQUIVALENT)

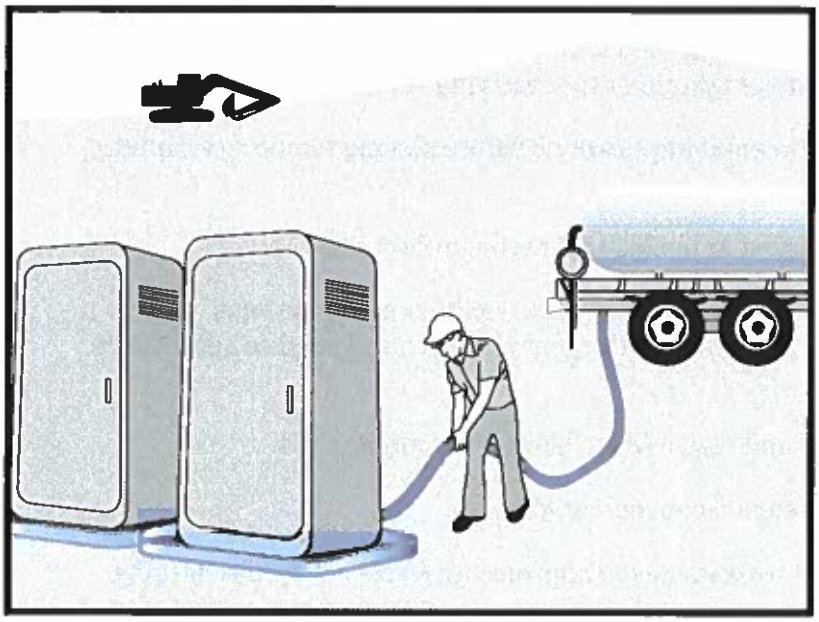


SECTION B–B
NOT TO SCALE

NOTES

1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

Sanitary/Septic Waste Management WM-9



Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	☑

Legend:

☑ **Primary Category**

☒ **Secondary Category**

Targeted Constituents

Sediment	
Nutrients	☑
Trash	☑
Metals	
Bacteria	☑
Oil and Grease	
Organics	☑

Potential Alternatives

None

Description and Purpose

Proper sanitary and septic waste management prevent the discharge of pollutants to stormwater from sanitary and septic waste by providing convenient, well-maintained facilities, and arranging for regular service and disposal.

Suitable Applications

Sanitary septic waste management practices are suitable for use at all construction sites that use temporary or portable sanitary and septic waste systems.

Limitations

None identified.

Implementation

Sanitary or septic wastes should be treated or disposed of in accordance with state and local requirements. In many cases, one contract with a local facility supplier will be all that it takes to make sure sanitary wastes are properly disposed.

Storage and Disposal Procedures

- Temporary sanitary facilities should be located away from drainage facilities, watercourses, and from traffic circulation. If site conditions allow, place portable facilities a minimum of 50 feet from drainage conveyances and traffic areas. When subjected to high winds or risk of high winds, temporary sanitary facilities should be secured to prevent overturning.

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- Temporary sanitary facilities must be equipped with containment to prevent discharge of pollutants to the stormwater drainage system of the receiving water.
- Consider safety as well as environmental implications before placing temporary sanitary facilities.
- Wastewater should not be discharged or buried within the project site.
- Sanitary and septic systems that discharge directly into sanitary sewer systems, where permissible, should comply with the local health agency, city, county, and sewer district requirements.
- Only reputable, licensed sanitary and septic waste haulers should be used.
- Sanitary facilities should be located in a convenient location.
- Temporary septic systems should treat wastes to appropriate levels before discharging.
- If using an onsite disposal system (OSDS), such as a septic system, local health agency requirements must be followed.
- Temporary sanitary facilities that discharge to the sanitary sewer system should be properly connected to avoid illicit discharges.
- Sanitary and septic facilities should be maintained in good working order by a licensed service.
- Regular waste collection by a licensed hauler should be arranged before facilities overflow.
- If a spill does occur from a temporary sanitary facility, follow federal, state and local regulations for containment and clean-up.

Education

- Educate employees, subcontractors, and suppliers on sanitary and septic waste storage and disposal procedures.
- Educate employees, subcontractors, and suppliers of potential dangers to humans and the environment from sanitary and septic wastes.
- Instruct employees, subcontractors, and suppliers in identification of sanitary and septic waste.
- Hold regular meetings to discuss and reinforce the use of sanitary facilities (incorporate into regular safety meetings).
- Establish a continuing education program to indoctrinate new employees.

Costs

All of the above are low cost measures.

Inspection and Maintenance

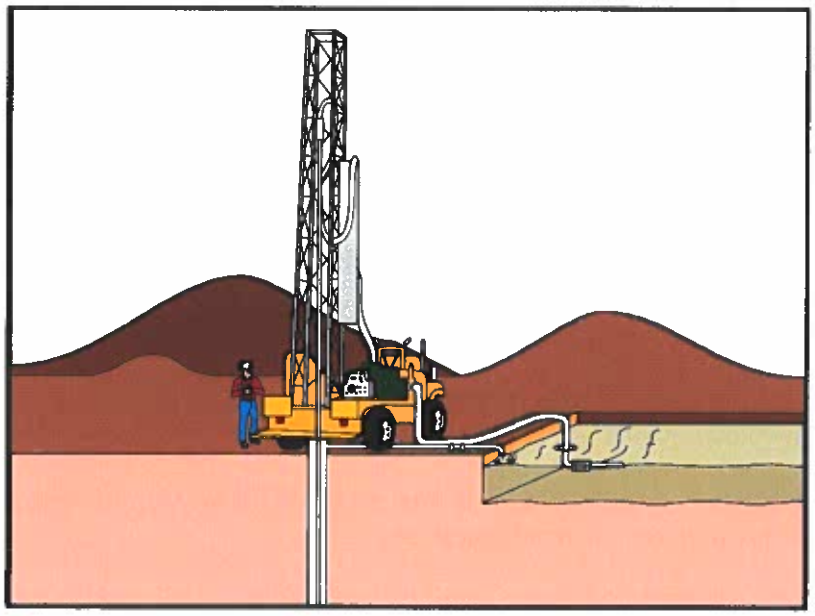
- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Arrange for regular waste collection.
- If high winds are expected, portable sanitary facilities must be secured with spikes or weighed down to prevent over turning.
- If spills or leaks from sanitary or septic facilities occur that are not contained and discharge from the site, non-visible sampling of site discharge may be required. Refer to the General Permit or to your project specific Construction Site Monitoring Plan to determine if and where sampling is required.

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Liquid Waste Management WM-10



Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	☑

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	

Potential Alternatives

None

Description and Purpose

Liquid waste management includes procedures and practices to prevent discharge of pollutants to the storm drain system or to watercourses as a result of the creation, collection, and disposal of non-hazardous liquid wastes.

Suitable Applications

Liquid waste management is applicable to construction projects that generate any of the following non-hazardous by-products, residuals, or wastes:

- Drilling slurries and drilling fluids
- Grease-free and oil-free wastewater and rinse water
- Dredgings
- Other non-stormwater liquid discharges not permitted by separate permits

Limitations

- Disposal of some liquid wastes may be subject to specific laws and regulations or to requirements of other permits secured for the construction project (e.g., NPDES permits, Army Corps permits, Coastal Commission permits, etc.).
- Liquid waste management does not apply to dewatering operations (NS-2 Dewatering Operations), solid waste management (WM-5, Solid Waste Management), hazardous wastes (WM-6, Hazardous Waste Management), or concrete slurry residue (WM-8, Concrete Waste

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Management).

- Typical permitted non-stormwater discharges can include: water line flushing; landscape irrigation; diverted stream flows; rising ground waters; uncontaminated pumped ground water; discharges from potable water sources; foundation drains; irrigation water; springs; water from crawl space pumps; footing drains; lawn watering; flows from riparian habitats and wetlands; and discharges or flows from emergency fire fighting activities.

Implementation

General Practices

- Instruct employees and subcontractors how to safely differentiate between non-hazardous liquid waste and potential or known hazardous liquid waste.
- Instruct employees, subcontractors, and suppliers that it is unacceptable for any liquid waste to enter any storm drainage device, waterway, or receiving water.
- Educate employees and subcontractors on liquid waste generating activities and liquid waste storage and disposal procedures.
- Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meetings).
- Verify which non-stormwater discharges are permitted by the statewide NPDES permit; different regions might have different requirements not outlined in this permit.
- Apply NS-8, Vehicle and Equipment Cleaning for managing wash water and rinse water from vehicle and equipment cleaning operations.

Containing Liquid Wastes

- Drilling residue and drilling fluids should not be allowed to enter storm drains and watercourses and should be disposed of.
- If an appropriate location is available, drilling residue and drilling fluids that are exempt under Title 23, CCR § 2511(g) may be dried by infiltration and evaporation in a containment facility constructed in conformance with the provisions concerning the Temporary Concrete Washout Facilities detailed in WM-8, Concrete Waste Management.
- Liquid wastes generated as part of an operational procedure, such as water-laden dredged material and drilling mud, should be contained and not allowed to flow into drainage channels or receiving waters prior to treatment.
- Liquid wastes should be contained in a controlled area such as a holding pit, sediment basin, roll-off bin, or portable tank.
- Containment devices must be structurally sound and leak free.
- Containment devices must be of sufficient quantity or volume to completely contain the liquid wastes generated.

- Precautions should be taken to avoid spills or accidental releases of contained liquid wastes. Apply the education measures and spill response procedures outlined in WM-4, Spill Prevention and Control.

- Containment areas or devices should not be located where accidental release of the contained liquid can threaten health or safety or discharge to water bodies, channels, or storm drains.

Capturing Liquid Wastes

- Capture all liquid wastes that have the potential to affect the storm drainage system (such as wash water and rinse water from cleaning walls or pavement), before they run off a surface.

- Do not allow liquid wastes to flow or discharge uncontrolled. Use temporary dikes or berms to intercept flows and direct them to a containment area or device for capture.

- Use a sediment trap (SE-3, Sediment Trap) for capturing and treating sediment laden liquid waste or capture in a containment device and allow sediment to settle.

Disposing of Liquid Wastes

- A typical method to handle liquid waste is to dewater the contained liquid waste, using procedures such as described in NS-2, Dewatering Operations, and SE-2, Sediment Basin, and dispose of resulting solids per WM-5, Solid Waste Management.

- Methods of disposal for some liquid wastes may be prescribed in Water Quality Reports, NPDES permits, Environmental Impact Reports, 401 or 404 permits, and local agency discharge permits, etc. Review the SWPPP to see if disposal methods are identified.

- Liquid wastes, such as from dredged material, may require testing and certification whether it is hazardous or not before a disposal method can be determined.

- For disposal of hazardous waste, see WM-6, Hazardous Waste Management.

- If necessary, further treat liquid wastes prior to disposal. Treatment may include, though is not limited to, sedimentation, filtration, and chemical neutralization.

Costs

Prevention costs for liquid waste management are minimal. Costs increase if cleanup or fines are involved.

Inspection and Maintenance

- Inspect and verify that activity–based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.

- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur.

- Remove deposited solids in containment areas and capturing devices as needed and at the completion of the task. Dispose of any solids as described in WM-5, Solid Waste Management.
- Inspect containment areas and capturing devices and repair as needed.

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Garney CONSTRUCTION
ADVANCING WATER

324 E. 11th Street, Suite E2
Tracy, CA, 95376

Phone: 816-741-4600
Fax: 209-229-1870

Submittal No. 003

Project: Monterey Peninsula Water Supply Project - Transfer and Feed Water Pipelines **Date: 7/18/2019**
Contractor: Garney Construction **Sub/Supplier: Garney Construction**

To: California American Water
511 Forest Lodge Rd.
Suite 100
Pacific Grove, CA 93950

Ref: X **New Submittal**
_____ **Resubmittal**

Attn: Lawrence Tam

We Are Sending:		Submitted For:		Action Taken:	
	Shop Drawings	X	Approval		Approved as Submitted
X	Letter		Your Use		Approved as Noted
	Prints		As Requested		Returned After Loan
	Change Order		Review and Comment		Resubmit
	Plans		Information Only	X	Submitted
	Samples	Sent Via:			Returned
	Specifications	X	Attached		Returned for Corrections
	Other:		Separate Cover Via:		

Submittal Type: Product Data

The Following Items are Hereby Submitted:

Submittal No.	Description	Drawing / Detail #	Spec. Section	Qty	Contains Variation to Specifications Yes	No
003	Material Recycling and Disposal Plan	N/A	01062, MM 4.13-2, MM 4.7-2b	.PDF		X

Remarks:

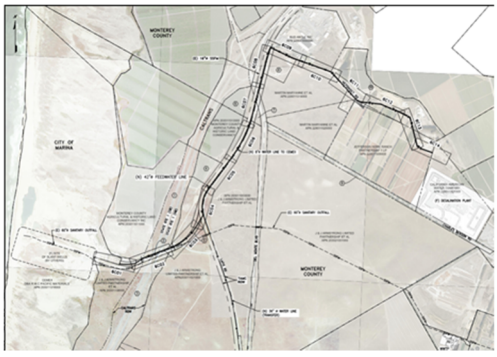
Please find the attached submittal for material recycling and disposal.

Please contact the undersigned should there be any questions or comments regarding this submittal.

Contractor's Stamp
The undersigned certifies that review, approval, verification of Products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.

Signed: Nick Hansen
Nick Hansen - Garney Construction

Material Recycling and Disposal Plan



Transfer and Feed Water Pipelines

Garney Project #1115

Overview:

The Transfer and Feedwater pipelines consists of approximately 59,000 ft of pipeline installation through the cities of Seaside and Marina and the county of Monterey. The construction activities will affect the road surfaces and native material where the pipe section and bedding material will be installed. Construction activities will also affect the unimproved surfaces in the TAMC right of away along highway 1. Garney Construction has come up with the following plan to ensure all excavated materials to be off hauled are recycled or disposed of in a manner consistent with the MMRP and contract requirements. Garney is committed to recycling more than 50% of removed site material or material construction waste to reduce project wide environmental impact. The primary material classifications to be removed during construction are Asphalt Concrete, Concrete, and Native Soil. There will be other construction wastes that require removal, including green waste (tree limbs, branches, etc.) and miscellaneous demolition materials. These items are addressed in the following plan.

Asphalt Concrete and Concrete Removal and Disposal:

The asphalt and concrete off haul materials will be primarily from roadway sections removed for installation of the 36" pipeline. Once the final pipe alignment is confirmed in the field with survey, the excavation area (approximately 4-5 ft wide) will be sawcut vertically on both sides. Once sawcutting is complete, the material (asphalt or concrete) will be removed utilizing an excavator and placed into a superdump dump truck for off haul. The native material below the AC concrete section will be kept separate from the top section in the removal process. A separate submittal for dust mitigation measures to be performed during material removal will be submitted.

Once the truck is full, the material will be off hauled to the Monterey Regional Waste Management District recycling location in Marina to be recycled into Class 2 AB. See attachment #5 confirming material will be accepted at their facility for material recycling. As this site is within the Monterey Peninsula, mileage for hauling of material is minimized. During the project, if the facility is full and cannot accept material any of the days Garney is performing off haul, Garney will send AC material to the Granite Construction AC plant in Salinas for recycling and reuse. Please see attached letter from Granite Construction confirming acceptance and recycling of this material in Attachment #2.

Soil Classification, Removal, and Disposal:

During the pipe installation, it is Garney's intent to use the native soil as backfill material for the entire section above the pipe and the required sand section surrounding the pipe. However, as the pipe section will offset a portion of the existing native material in the roadway sections, there will be excess native material that will need to be disposed of. The soil will be classified to ensure proper disposal based on the soil characteristics found. To classify this material Garney will take samples during the potholing operations to obtain a representative sample of material along the pipeline. These samples will be identified by Station numbers along the pipe alignment to easily identify the location of each sample in reference to the design pipe layout and City streets. This material will be tested by Pacific Crest Engineering Inc. (PCE) for the following criteria per the environment specification requirements:

- Test Method SW8015m – Multi-Range TPH(g,d,mo)
- Test Method SW6020 – CAM 17 metals
- Test Method SW8260B – Volatile Organic Compounds
- Test Method SW8081A – Organochlorine Pesticides
- Test Method SW8151A – Chlorinated Herbicides

Areas classified within the environmental limits will then be identified, and the classification reports will be sent to Monterey Regional Waste Management District (MRWMD) for disposal acceptance. See Attachment #3 for the MRWMD material disposal requirements. This material will be excavated during the pipeline installation utilizing an excavator, and loaded into Superdump Dump trucks in the same manner as found in the above AC/Concrete disposal section. Material will then be hauled to MRWMD for reuse. Material disposed of at MRWMD will be reused for intermediate cover, reducing the amount of virgin material otherwise needed by MRWMD to accomplish this task. See Attachment #4 for reuse information from MRWMD.

Should any particular sample come out as above threshold limits for hazardous material, the area will be identified and further potholes/sampling will be performed to identify the extent of the contaminated section and to what extent the hazardous material is classified. At that point, based on the material classification, material will be removed and disposed of to a proper receiving facility utilizing proper controls, chain of custody, and mitigation methods for the particular hazardous material in question. An amendment to the plan will be provided based on hazardous material classification should any hazardous materials be found. Known areas currently in question for potential hazardous material are as follows:

1. General Jim Moore and Gigling Road- potential VOC's from gas stations

These areas of interest will be specifically potholed and sampled to ensure material in the area is properly classified.

During excavation activities in areas previously identified as clean native soil, any material be found to have a noticeable odor or be visibly stained will be stockpiled separate from the clean fill material and will be placed on plastic, with BMP's placed around the stockpile to mitigate any leeching of the material. In lieu of wetting this material down to reduce dust per the Dust Control Plan, the material in question will be covered with plastic. The owner will be immediately notified and samples will be taken by PCE to classify the material per the above tests. This material will be kept separate and will be disposed of in a proper fashion only once the material classification is identified, and the required precautions are identified and taken during disposal based on the hazards found.

Green waste and Construction Debris Disposal:

The facility at MRWMD provides recycling services for green waste and construction materials to satisfy the recycling requirements set forth in the California Building Code, local regulations, and as required in the Contract Specifications section 01062. See Attachment #5 for the recycling overview.

Green waste will be anticipated in the TAMC right of way. Any areas that require tree trimming to allow equipment access for pipeline excavation along the alignment, Garney construction will first identify the location for trimming needed, allow review of the site by Owner environmental team for any sensitive species or migratory birds, and notify the respective city of the tree trimming operations. Tree trimming would only occur as authorized by the respective oversite authorities. Any required trimmings would be placed into a dump truck, and brought to MRWMD facility for recycling. See Attachment #6 for recycling information.

For any Miscellaneous construction material from the project, Garney will send loads of material to MRWMD for recycling per their Construction and Demolition Recycling Program. See Attachment #7 for information.

Recycling Documentation:

Garney will keep all receipts from recycling of material, and will provide these receipts to the owner upon completion of the project as documentation that the waste reduction, recycling, and diversion goals have been met.

ATTACHMENT #2

TO: Garney Construction
Sean Summers

FROM: Mitchell Bush, Mark Saucedo

DATE: 10/28/2016

RE: Salinas Asphalt Plant Recycle Policy

Granite Construction's Salinas Asphalt Facility accepts asphaltic concrete grindings and broken asphaltic concrete for recycling purposes. The material is then processed and re-used in the production of new asphaltic concrete products.

If you have any questions regarding our recycle capabilities please contact:

Mitchell Bush
Mitchell.Bush@gcinc.com
(408)-908-0068

Mark Saucedo
Mark.Saucedo@gcinc.com
(831)-750-0361

ATTACHMENT #3

Monterey Peninsula Landfill

WASTE ACCEPTANCE CRITERIA

FOR SPECIAL WASTES

The Monterey Regional Waste Management District (MRWMD) owns and operates the Monterey Peninsula Landfill (MPL), located at 14201 Del Monte Boulevard, two miles north of Marina, California. MRWMD has developed and implemented a Waste Screening and Acceptance Program to assist in preventing hazardous and other prohibited wastes from entering the facility and to establish procedures and acceptance levels for special (nontraditional) solid wastes.

The MPL accepts non-hazardous special wastes that have been properly sampled, analyzed, and found to be acceptable for disposal at the landfill or for use as cover at the landfill. The MRWMD **does not accept** waste that is defined as hazardous by RCRA and/or CCR Title 22.

The MPL is constructed with Subtitle D cells with composite liners and leachate collection and methane management systems. The cells receive predominantly municipal solid waste (including residential and commercial waste) and construction and demolition debris. In addition, the following special wastes may also be accepted for disposal at the landfill:

- Materials which meet California's definition of non-hazardous waste
- Petroleum contaminated soils
- Treated medical wastes
- Non-friable asbestos materials
- Treated wood waste
- Well drilling mud
- Harbor and lake dredgings
- Wastewater and water treatment plant sludge, screenings, and grit containing at least 20% solids.
- Limited volumes of various liquid wastes, with moisture content of greater than 50%
- Household fireplace ash
- Agricultural film plastic

Hazardous waste, friable asbestos, radioactive waste, and untreated medical waste (biohazardous or infectious waste) **are not allowed** for disposal at the MPL

Continued.

PRE-APPROVAL REQUIREMENTS

All special wastes must be pre-approved by MRWMD prior to acceptance at the MPL. MRWMD requires the completion of a Generator Waste Profile, along with any required analytical results before pre-approval will be granted. It is the responsibility of the generator to certify that the materials for management at MPL are non-hazardous per CCR Title 22 Section 66260. For materials that require laboratory analysis, the generator must provide representative analysis. MRWMD's site permits do not require any specific testing requirements or sampling frequency for individual waste streams. The California Department of Toxic Substances Control (DTSC) has developed an Information Advisory for clean fill sampling. This Information Advisory can be found at www.DTSC.ca.gov. Contact DTSC for assistance in developing an appropriate sampling plan for your special wastes.

NON-FRIABLE ASBESTOS ACCEPTANCE PROCEDURES

All non-friable asbestos containing waste must be pre-approved by MRWMD prior to acceptance. The following information provides general requirements for acceptance of non-friable asbestos containing wastes at MPL.

Asbestos containing wastes, which are friable and contain 10,000 ppm (1%) or greater friable asbestos, are regulated as a California Hazardous Waste. Friable asbestos is one that can be reduced to a powder or dust under hand pressure when dry. This classification standard is defined in California Code of Regulations, Section 66261.24. Friable asbestos containing wastes **are not accepted** at MPL.

Non-friable asbestos containing wastes and wastes containing less than 10,000 ppm (1%) friable asbestos are non-hazardous wastes. DTSC considers non-friable asbestos containing waste to be non-hazardous regardless of its asbestos content. If non-friable asbestos has a high probability of being crumbled, pulverized, or reduced to powder, the material will be considered a Regulated Asbestos-Containing Material (RACM) and thus unacceptable for disposal at MPL.

For acceptance at the MPL, the procedures listed below must be followed:

- Non-friable asbestos containing waste must be pre-approved by MRWMD staff prior to acceptance at the MPL.
- Non-friable waste must be double wrapped and sealed in plastic of 6-millimeter (6-mil) thickness, or completely covered in the truck bed by a tightly secured tarp from which the fibers cannot escape.
- Each shipment must be accompanied by a completed Generator Waste Profile manifest form.
- Each load must be scheduled at least 72 hours prior to arrival.
  Hours of acceptance are 7:00 a.m. to 4:00 p.m., Monday – Friday.

Continued

CONTAMINATED SOIL TESTING REQUIREMENTS

The MRWMD reserves the right to require the generator to perform additional analytical testing. The minimum required sampling frequency is as follows:

Stockpiles:	Less than 100 cubic yards:	3 discrete samples.
	100 to 500 cubic yards:	5 discrete samples.
	More than 500 cubic yards:	5 discrete samples plus one additional sample per 250 cubic yards in excess of 500 cubic yards.

PETROLEUM HYDROCARBONS	CONSTITUENT	EPA METHOD
Diesel	TPH (Diesel)	3550/8015
Gasoline	TPH (Gasoline)	5030/8015
	BTEX	5030/8020
	MTBE	8020
	Lead	6020A
Waste Oil	TPH (Diesel, Gasoline, Motor Oil)	8015, 5030
	Volatile Organics	8260/8010/8020
	Semi-Volatile Organics	8270
	Organochlorine Pesticides	8081
	PCBs	8082
	CAM 17 (Title 22) Metals	6020A, 7471
Fuel Oil/Bunker Oil/Hydraulic	TPH	8015
Oil/Kerosene	BTEX	5030/8020

Continued

CONTAMINANT THRESHOLD LIMITS

The MRWMD only accepts material that is represented by analytical results indicating concentrations below the following listed threshold values:

PETROLEUM HYDROCARBONS	THRESHOLD VALUE FOR ACCEPTANCE (1)	
Contaminant	**TTLC (2) (mg/kg)**	**STLC (3) (mg/L)**
MTBE	12	0.6
Benzene	10	0.5
Toluene	24	1.2
Ethylbenzene	18	0.9
Xylene	12	0.6
TPH as Gasoline, Kerosene, or Jet Fuel	1,000	
TPH as Diesel	5,000	
TPH as Motor Oil, Hydraulic, Heating, or Bunker Oil	8,000	

(1) There is no regulatory determined concentration at which point TPH is defined by California or Federal regulations as "hazardous waste".
(2) Total Threshold Limit Concentration.
(3) Soluble Threshold Limit Concentration.

INORGANICS	THRESHOLD VALUE FOR ACCEPTANCE			
Contaminant	**TTLC (mg/kg)**	**Hazardous Waste Criteria(1) (mg/kg)**	**STLC (mg/L)**	**Hazardous Waste Criteria(1) (mg/L)**
Antimony	400	500	0.06	15.0
Arsenic	400	500	0.5	5.0
Barium	8,000	10,000	10	100
Beryllium	60	75	0.04	0.75
Cadmium	80	100	0.05	1.0
Chromium (VI)	400	500	0.5	5.0
Chromium (Total or III)	2,000	2,500	0.5	5.0
Cobalt	6,400	8,000	0.5	80
Copper	2,000	2,500	20	25
Fluoride salts	14,400	18,000	90	180
Lead	800	1,000	0.5	5.0
Mercury	16	20	0.02	0.2
Molybdenum	2,800	3,500	0.1	350
Nickel	1,600	2,000	1.0	20
Selenium	80	100	0.1	1.0
Silver	400	500	0.5	5.0
Thallium	560	700	0.005	7.0
Vanadium	1,920	2,400	0.2	24
Zinc	4,000	5,000	200	250

(1) CCR Title 22 Regulatory Limits (Division 4.5, Chapter 11, Article 2)

Continued.

CONTAMINANT THRESHOLD LIMITS

ORGANIC COMPOUNDS	THRESHOLD VALUE FOR ACCEPTANCE		
Contaminant	**TTLC (mg/kg)**	**STLC (mg/L)**	**TCLP (mg/L)**
Aldrin	1.4	0.14	0.5
Benzene	10	0.5	0.5
Carbon Tetrachloride		0.5	
Chlordane	2.5	0.25	0.03
Chlorobenzene			100
Chloroform			6
Cresols			200
2,4-Dichlorophenoxyacetic acid	100	10	10
DDT, DDE, DOD	1.0	0.1	
1,4-Dichlorobenzene			7.5
1,2-Dichloroethane			0.5
1,1-Dichloroethylene			0.7
2,4-Dinitrotoluene			0.13
Dieldrin	8	0.8	
Dioxin (2,3,7,8-TCDD)	0.01	0.001	
Endrin	0.2	0.02	
Heptachlor	4.7	0.47	0.008
Hexachlorobenzene			0.13
Hexachlorobutadiene			0.5
Hexachloroethane			3.0
Kepone	21	2.1	
Lindane	4	0.4	0.4
Methoxychlor	100	10	10
Methyl Ethyl Ketone			200
Mirex	21	2.1	
Nitrobenzene			2.0
Pentachlorophenol	17	1.7	100
Perchorate	10		
Polychlorinated Biphenyls (PCB's)	50	5	
Pyridine			5.0
Tetrachloroethylene			0.7
Toxaphene	5	0.5	0.5
Trichloroethylene (TCE)	2,040	204	0.5
2,4,5-TP (Silvex)	10	1.0	1.0
2.4,5-Trichlorophenol			400
2,4,6-Trichlorophenol			2.0
Vinyl Chloride			0.2

Continued.

THE DISTRICT DOES NOT ACCEPT WASTE THAT IS DEFINED AS HAZARDOUS UNDER RCRA or CCR Title 22.

For Special Projects requiring information from District Engineer,
contact David Ramirez, P.E.
at dramirez@mrwmd.org or 831-384-5313

ATTACHMENT #4

Hi Sean,

Soil accepted at MRWMD is put to beneficial reuse onsite as daily or intermediate cover. This material reduces the amount of virgin material otherwise needed to accomplish this task. MRWMD has specific requirements for this soil which include limits on the amount of contamination and debris that can be in the soil.

Thank you,
David I. Ramirez, P.E.
Senior Engineer
Monterey Regional Waste Management District
(831) 264-6910 (Direct)
(831) 384-5313 (Office)
(831) 384-3567 (fax)

ATTACHMENT #5

- Compost
- Disposal
- Household Hazardous Waste
- Last Chance Mercantile
- Public Education
- Recycling
  - Beverage Container Buy Back Center
  - Construction & Demolition Recycling
  - Commercial & Residential Recycling
  - Electronics Recycling
  - Materials Recovery Facility
  - Special Event Recycling
- Renewable Energy
- Small Planet - School Education Program

Residential And Commercial Recycling

RETURN TO HOME

IT'S A SMALL PLANET, RECYCLE!

MRWMD's Materials Recovery Facility and recycling programs are designed to maximize diversion of recyclable materials. Since it opened, the MRF has diverted more than 1.5 million tons of recyclable and reusable materials from landfill disposal. As a result, MRWMD member jurisdictions have enjoyed some of the highest diversion levels in the State.

Materials Recovery Facility

The Materials Recovery Facility (MRF) is the centerpiece of the District's waste processing and diversion. The MRF receives commercial and "self-haul" vehicles carrying a wide range of construction and demolition material, landscaping trimmings and general refuse. More than 50% of the "mixed waste" that is received at the MRF is recycled, reused and diverted from landfill disposal.

The following materials are all processed at the MRF:

(Read More)

Buy Back Center

Located behind the Last Chance Mercantile, the District's Buy Back Center for CRV Beverage Containers will give you cash for your "CRV" beverage containers Mon.-Sat.

(Read More)

Construction And Demolition Recycling

Construction and demolition (C&D) debris makes up a significant portion of the waste stream. The MRF, designed to effectively process and divert the readily recyclable materials such as wood, metal, dry wall, and aggregate, helps contractors and builders meet new green building standards, as well as State (Cal Green) (link to) and municipal policies and ordinances. These new standards and requirements aim to boost the diversion rate for vs. disposal of these materials. See the C&D page for help on optimizing your load and tracking the diversion for your project.

Green Waste

Clean green waste such as landscape trimmings, brush, tree pruning, and grass clippings are received at the Materials Recovery Facility. The rate for these organic materials, if "clean" and free of contamination.

Clean Wood Waste

Unpainted wood is also accepted at a discounted rate. Wood must be free of contamination from mixed waste and may not include any treated or painted wood.

Mattresses

Mattresses and box springs are accepted at the Materials Recovery Facility for recycling. The cost charged to accept these items is the same the District pays to a recycler to take them away and reclaim wood, metal and fabric materials.

Appliances

The District charges $5 each for appliance that doesn't contain refrigerant and $20 each for appliances with refrigerant. Fees charged for appliances are used to recover the cost to remove mercury switches and refrigerant.

Tires

Tires received at MRWMD are delivered to recyclers in Hollister and the Bay Area where they are recycled into playground surfaces and agricultural products. Disposal fees are based upon size and number of tires.

MRWMD's Other Recycling Collection Programs

Monterey Regional Waste Management District

Service, Stewardship and Sustainability Since 1951

ATTACHMENT #6

GREEN WASTE (YARD WASTE) & WOOD WASTE ACCEPTANCE CRITERIA

KEEP THE "GREEN" CLEAN! Green waste can be converted into compost, energy and landscape material. By sorting and assuring clean loads you help the District maximize resource recovery of this material and save yourself the cost of the full disposal rate.

It is District's policy to accept loads of clean green waste at the rate of $30.00 per ton.
Examples of accepted wood waste are:

- tree limbs
- logs and beams less than 6 ft. in length and 1 ft. in diameter
- clean root balls of less than two feet across
- tree stumps* less than 1 ft. in diameter at the base
  *for stumps larger than this see table below
- construction/demolition lumber (untreated, unpainted accepted with nails)
- used pallets and crates
- unfinished wood furniture, fences and decks
- untreated wood roofing shingles/shakes (no tar paper, asbestos, or fiberglass)

* Disposal Fees for Oversized Stumps and Root balls:	
Stumps with bases in excess of 1 ft. or root balls in excess of 2 ft.	$5 for each foot in excess of these limits, plus the regular per ton rate
Stumps with bases or root balls more than 2-3 ft. in any dimension	$10 each, plus the regular per ton rate.
Stumps with bases or root balls more than 3-5 ft. in any dimension	$50 each, plus the regular per ton rate.
Stumps with bases or root balls more than 5 ft. in any dimension	$50 each, plus the "problem waste" rate at $90 per ton

Examples of accepted yard waste are:

• brush & shrub prunings	• ivy	• sawdust	• weeds
• Grass clippings	• pine needles and leaves	• sod	• woodchips

Loads containing unacceptable materials or loads mixed with refuse or recyclables are charged at the regular rate of $51.75 per ton. Examples of unacceptable materials and contaminants are:

• bones	• pampas grass	• rocks	• pressure treated or painted wood
• cacti	• plastics	• soil	• railroad ties (less than 6 feet)
• ice plant	• palm stalks and fronds		• treated poles, pier pilings (less than 6 ft.)
• succulents e.g. aloe vera	• trash		• veneer paneling / plywood

THE DISTRICT DOES NOT ACCEPT WASTE THAT IS DEFINED AS HAZARDOUS WASTE UNDER RCRA OR CCR TITLE

FOR MORE INFORMATION:
Please Contact: MRWMD Scale Supervisor, Jeannette Pagan at 831-384-5313

ATTACHMENT #7

- Compost
- Disposal
- Household Hazardous Waste
- Last Chance Mercantile
- Public Education
- Recycling
  - Beverage Container Buy Back Center
  - Construction & Demolition Recycling
  - Commercial & Residential Recycling
  - Electronics Recycling
  - Materials Recovery Facility
  - Special Event Recycling
- Renewable Energy
- Small Planet - School Education Program

Residential And Commercial Recycling

RETURN TO HOME

It is a Small Planet, Recycle!

14201 Del Monte Boulevard
Marina, CA 93933-1670
Phone: (831) 384-5313
Fax: (831) 384-3567

Hours
Map
Share

Construction And Demolition Recycling

Pay Less For Clean "Source Separated Loads"

The highest rates of recycling can be attained when you "source separate" materials at your job site, such as keeping a separate dumpster for clean concrete, wood, metal, soil, etc. Recycling construction and demolition materials at the MRWMD Materials Recovery Facility helps builders comply with California's CALGreen building requirements and meet the national LEED Building standards. MRWMD fee schedule offers discounted rates for clean loads containing source separated wood, concrete, asphalt, or soil.

Optimize Your Loads For Recycling

The MRWMD MRF uses a combination of mechanical and manual separation to process mixed waste and C&D materials as waste flows on a conveyor belt through the facility. To protect our employees, and to avoid materials that can become entangled in equipment, loads containing excessive amounts of the above materials will generally be directed to the landfill for disposal. To maximize diversion on the job site, allocate problem materials to their own dumpster.

To help ensure that your load is directed to the MRF by the MRWMD scale staff, try to keep the following problem materials out of your load:

- Fiberglass Insulation
- Large quantities of Romex cable or wire
- Ice Plant, Poison Oak

Tracking Your Diversion

We calculate MRF diversion on a monthly basis and you can see the actual diversion percentage published in our monthly Recycling Report. This report is presented to our Board of Directors each month and included on our website on the Board of Directors page.

Scale Receipt Is Your Proof Of Diversion

The MRWMD tracks diversion at the MRF on a monthly basis by recording the tonnage of material coming into the facility, the tonnage of material diverted, and the tonnage of material disposed. Diversion is not tracked on a load by load basis.

Scale receipt indicates material brought across the MRWMD scales and where it was directed.

- For Receipts labeled "MRF" we certify a min. 50% diversion for tonnage delivered on that receipt.
- Receipts indicating load went to "Green Waste" or "AC" (asphalt/concrete) are 100% diversion.
- Receipts indicating a load went to the landfill receive no diversion.

The "percent diversion – sort line" number reported monthly in the MRWMD Tonnage Report is the diversion percentage you can use for reporting on your projects. The USGBC has accepted this methodology for LEED projects locally.

If you require diversion certification, the MRWMD will provide the monthly diversion calculation for your load(s) that went to the MRF based on the month your load(s) were delivered. You can also obtain this information from your hauler.

Publications

Disposal Brochure

Garney CONSTRUCTION
ADVANCING WATER

324 E. 11th Street, Suite E2
Tracy, CA, 95376

Phone: 816-741-4600
Fax: 209-229-1870

Submittal No. **004**

Project: Monterey Peninsula Water Supply Project - Transfer and Feed Water Pipelines **Date:** **7/18/2019**
Contractor: Garney Construction **Sub/Supplier: Garney Construction**

To: California American Water
511 Forest Lodge Rd.
Suite 100
Pacific Grove, CA 93950

Ref: X **New Submittal**
_____ **Resubmittal**

Attn: Lawrence Tam

We Are Sending:		Submitted For:		Action Taken:	
	Shop Drawings	X	Approval		Approved as Submitted
X	Letter		Your Use		Approved as Noted
	Prints		As Requested		Returned After Loan
	Change Order		Review and Comment		Resubmit
X	Plans		Information Only	X	Submitted
	Samples	Sent Via:			Returned
	Specifications	X	Attached		Returned for Corrections
	Other:		Separate Cover Via:		

Submittal Type: Product Data

The Following Items are Hereby Submitted:

Submittal No.	Description	Drawing / Detail #	Spec. Section	Qty	Contains Variation to Specifications Yes	No
004	Site Specific Safety and Health Plan	N/A	01062, MM 4.13-1d, MM 4.7-2a	.PDF		X

Remarks:

Please find the attached submittal for the site specific safety and health plan.

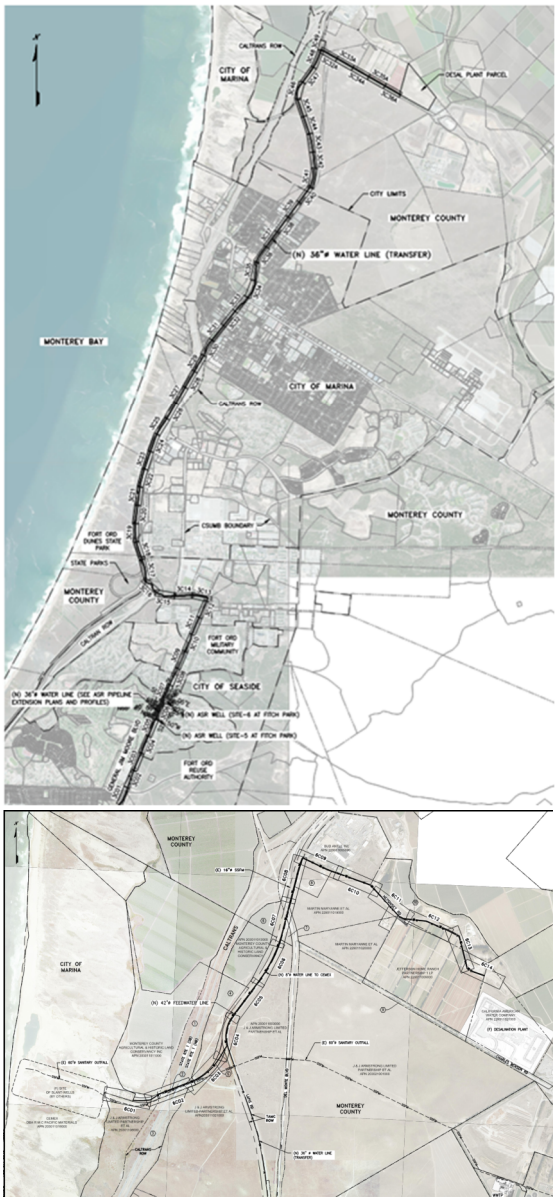
Please contact the undersigned should there be any questions or comments regarding this submittal.

Contractor's Stamp
The undersigned certifies that review, approval, verification of Products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.

Signed: Nick Hansen
Nick Hansen - Garney Construction

Project Specific Safety and Health Plan

MPWSP – Transfer and Feed Water Pipelines



Project Location: From General Jim Moore Blvd in Seaside, CA to Charles Benson Road in the county of Monterey, CA.

Project Description

Project scope of work includes the installation of approximately 59,000 LF of 36" and 42" ductile iron water line, relocating existing water mains and services along the alignment, valves and appurtenances, and street resurfacing.

Location: Areas of Seaside, Marina, County of Monterey

Key Personnel:

Personnel	Location	Cell Phone	Email
Operations Manager – Kevin Downs	Off Site/On Site	925-724-9493	kdowns@garney.com
Executive VP – Bill E. Williams	Off Site	925-337-2174	bewilliams@garney.com
General Superintendent – Greg Lutes	Offsite/On Site	916-217-4615	gregl@garney.com
Safety Manager – Joshua Gallagher	Off Site/Onsite	209-275-9564	jgallagher@garney.com
Project Manager – Sean Summers	Off Site/Onsite	415-350-3219	ssummers@garney.com
Superintendent – Brian Thompson	On Site	209-665-9922	bthompson@garney.com
Project Engineer – Nick Hansen	Off Site/Onsite	214-535-1486	nhansen@garney.com
Foreman – Kevin Netto	Onsite	831-756-9265	knetto@garney.com

Project Operations (All operations will be performed in accordance with Garney's Safety Program)

Excavations	Cathodic Protection
On and offsite material hauling	Backfill and Compaction
Aerial Lifting	Concrete Placement
Pipe positioning	Pipe Disinfection
Traffic Control	Street Resurfacing
Shoring	Setting/Maintaining BMP's
Potential Dewatering	Electrical/Signal Restoration
Welding	Relocation/Restoration of Conflicting Utilities
Pressure Testing	Cutting and Grinding

Anticipated Hazards/Exposures

Confined Space	Public exposure
Slip/Trips/Falls	Concurrent work with other trades
Materials Handling	Groundwater
Fire	Night Work

Existing utilities	Vehicular traffic adjacent to work zone
Hand and Power Tools	Hazardous Materials in Soil
Cave-Ins	
Weather Extremes	
Mobile Equipment	

Required PPE

Hard Hats	
Work Gloves	
Safety Glasses	
Appropriate Footwear	
High Visibility Clothing	
Goggles and Face Shields (when creating debris)	

Competent Persons

Name	Company	Operation
Kevin Downs	Garney	Operation Manager
Greg Lutes	Garney	General Superintendent
Joshua Gallagher	Garney	Regional Safety Manager
Sean Summers	Garney	Project Manager
Brian Thompson	Garney	Project Foreman

Project Safety Management and Responsibilities

Safety will be managed and regulated in accordance with Garney's Corporate Health and Safety Program and the site specific health and safety plan.

Emergency Action Plan

Emergency Services **911**

Service	Name	Address	Phone
Medical Clinic	Monterey Bay Urgent Care	245 Washington St. Monterey, CA	(831) 372-2273
Medical Hospital	Community Hospital of the Monterey Peninsula	23625 Holman Hwy Monterey, CA	(831) 624- 5311
Fire/Rescue- Seaside	Seaside Fire Department	1635 Broadway Avenue Seaside, CA	911 (831) 899-6790

Police- Seaside	Seaside Police Depart.	Seaside City Hall 440 Harcourt Ave Seaside, CA	(831) 899-6748
Fire/Rescue- Marina	Marina Fire Department	211 Hillcrest Ave Marina, CA	(831) 884-1226
Police- Marina	Marina Police Depart.	211 Hillcrest Ave Marina, CA	(831) 884-1210

First Aid Trained Personnel

Name	Cell Phone
Greg Lutes	916-217-4615
Kevin Downs	925-724-9493
Brian Thompson	209-665-9922
Nick Hansen	214-535-1486

EMERGENCY ACTION PLAN (EAP)

The emergency action plan for this jobsite was created to define responsibilities and procedures to be followed by staff in effectively responding to an emergency. It is a guideline to follow in the event of an emergency to help the process of getting professional medical attention to the person or personnel involved in the incident. In this EAP, specific duties will be the responsibility of some individuals on this jobsite. In an emergency all personnel should know:

1. **What is my role?**
2. **Where should I go?**

These two questions need to be answered in an emergency action plan and are crucial in the overall successful of the plan. The responsibilities on this jobsite are as follows:

ROLES AND RESPONSIBILITIES

· **OPERATION MANAGER: Kevin Downs**

o Will contact the main office & safety officers.
o Will contact the owner and engineer.
o Will be the company liaison between the project and any media.
o Will come to the jobsite and be positioned at the job trailer and near the entrance gate.

· **PROJECT SUPERINTENDENT: Greg Lutes**

o Will be coordinating all the activities surrounding the incident.
o Will coordinate the actions of the crew not involved in the accident.
o Will be involved in clearing the area of all people who are not involved with the care of the injured.
o After everyone is accounted for, will determine if and when the site will be evacuated

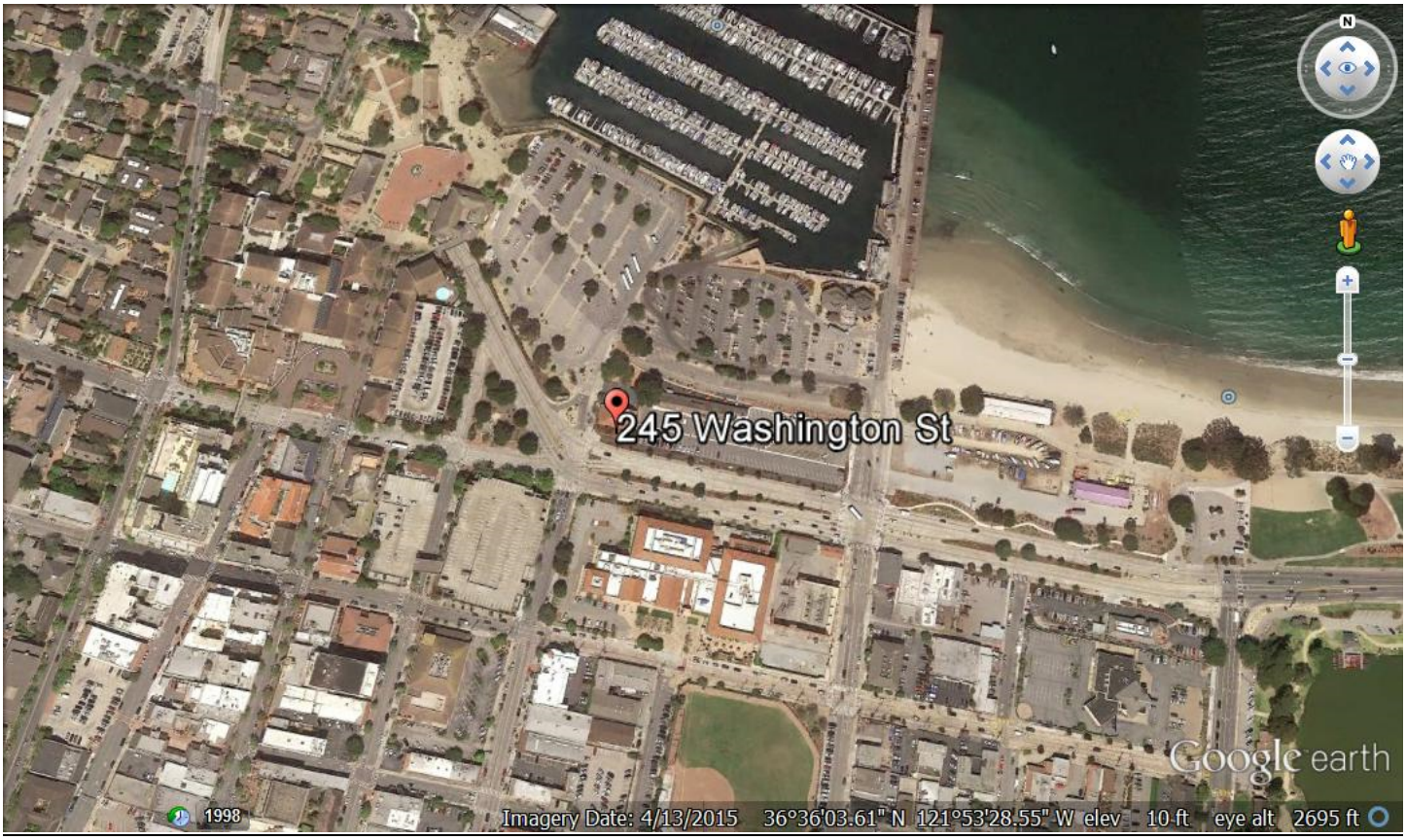
· **PROJECT FOREMAN: Brian Thompson**

o Will be positioned next to the main access to be the first point of contact with the ambulance, fire, and police that may arrive at the site.
o Will contact the main office & safety officers as a backup.

· **FIRST AID RESPONDERS:**
o First aid responders will stay with the injured giving as much medical attention as possible. These people must stay with the employee until professional medical response has arrived and taken over the situation.

IN THE EVENT OF AN INURY REQUIRING IMMEDIATE MEDICAL ATTENTION, THE INFORMATION NEEDS TO BE RELAYED TO COMMAND CENTRAL (OM, PM, OR SUPER) SO THEY CAN CALL 911. FIRST AVAILABLE PERSON WILL CALL 911.
IF THIS IS A CONFINED SPACE RESCUE CALL 911

Clinic Directions



Emergency/Evacuation
The Evacuation Signal will be **THREE LONG BLASTS** of a horn. If you hear this sequence of sounds assume the danger is real and immediately evacuate the work area and report to the Assembly Point. In addition, notification will be made to all Garney project employees assigned a radio. When the emergency signal is received, the assigned radio carrier has the responsibility to alert fellow crew members and any other nearby project employees.
Garney will provide and maintain minimum of 2ea separate egress points available at all times. Rescue operations will be closely coordinated with the Monterey/Seaside Fire and Rescue Teams depending on location along the pipeline.
Assembly

Upon receiving instructions to assemble, all craft employees will secure their work areas and walk in a calm, orderly manner to the assembly area. Due to the linear aspect of this project, the assembly area is designated as the onsite Foreman's Truck.
Securing a work area includes, but is not limited to, the following:
• All motorized equipment, welding equipment and burning equipment will be shut down.
• All gas, diesel, propane, electrical, open flame and other powered equipment will be shut down immediately. All work permits will become void.
• All electrically powered tools will be disconnected from their power source.
• Employees assigned to motorized equipment/vehicles will park off the site roads clear of fire-protection devices, i.e., hose houses, hydrants, and PI valves.
• Use or dispensing of flammable or combustible liquids and gases shall cease and containers of same shall be closed.
• Use or dispensing of corrosive liquids or solids shall cease and containers of same shall be closed.
NOTE: No vehicles other than emergency vehicles will be driven on the site in an emergency condition without the permission of the Site Foreman.
• Contractor supervision will ensure all employees working in remote areas and in confined spaces have been alerted and have proceeded to the assembly area.
• No attempt will be made to search the emergency for missing employees until:
• It is determined that a search and rescue party can be reasonably protected and equipped during such a search.

KNOW YOUR ROLE, SOMEONES LIFE COULD DEPEND ON IT

In the event of an emergency, employees should react as follows:
1. Stop all work immediately
2. Shut down all machinery, equipment and hot work
3. *Notify the Emergency Response Team*
4. Notify any subcontractors working in their area
5. Proceed to assembly point (onsite Foreman Truck)

Emergency Notification List

Contact	Company	Cell #	Email
Greg Lutes	Garney	916-217-4615	gregl@garney.com
Bill E. Williams	Garney	925-337-2174	bewilliams@garney.com
Kevin Downs	Garney	925-724-9493	kdowns@garney.com
Sean Summers	Garney	415-350-3219	ssummers@garney.com
Nick Hansen	Garney	214-535-1486	nhansen@garney.com
Joshua Gallagher	Garney	209-275-9564	jgallagher@garney.com

Heat Stress
The combination of three risk factors (climatic conditions of the environment, work demands, and clothing) causes heat stress. This is evidenced by an increase in heat stress body temperature, heart rate, and sweating.
Assessment. Garney's supervisor will assess the working conditions. Heat Stress will be considered if the environment is subjectively judged as being hot or the physiological markers of increased body temperature, increased heart rate, or excessive water loss are noted.
Controls. If the assessment concludes that employees may be at risk of heat stress, Garney's supervisor shall implement one or more of various control measures.

Mobile Equipment

All operators of mobile equipment must be qualified and authorized by the Garney project superintendent prior to operating equipment.

Inspections

a. Garney and its sub-contractors shall inspect all equipment for use on this project upon arrival or prior to use on the project site.
b. Inspection items shall include but are not limited to the following.
c. All safeguards are in place
d. All audible sounds are working
e. No leaks are present
f. Entire machine is operation and meets manufacturers specifications
g. Should any deficiencies be found, the Supervisor shall request the repairs and determine if the equipment is operational.
h. Assigned operators shall inspect all equipment prior to each shifts use. Any necessary repairs shall be reported to the crew supervisor prior to use.

Traffic Control

Where construction activity could impact or come in contact with a travel roadway or path Garney Construction will develop a Traffic Control Plan in accordance with project standards and the contract documents. The Plan will be submitted and approved by the governing authority that has jurisdiction of the particular facility. Once approved this plan will be implemented during all construction interactions with the travel way.

During road closures and detours, approved Traffic Control Plan signage will be followed. Public access will be prohibited in road closures through the use of Type 3 and Type 1 barricades, cones, and other approved traffic control devices as shown in the Traffic Control Plan and MUTCD. Only exceptions for public passage through closures will be for emergency vehicles and local traffic where the driver lives within the closure area. Work will be halted in the area and said person will be escorted to their property to ensure the safety of the crew and public.

Parking

Employee and subcontractor parking will be in designated areas (laydown yards at La Playa, Lightfighter/First, and Jefferson Ranch). Only authorized company vehicles shall be allowed to be used as project transportation to the specific work zones outside the project laydown areas.

Stop Work Authority

Each worker has the right to stop an unsafe activity and report unsafe actions.

First Aid Kits

First Aid Kits are located in all Garney Construction Vehicles and the Jobsite Office/Container.

Personal Protective Equipment (PPE)

On site personnel, visitors and vendors must use all required PPE's at all times. At Minimum, this includes High Visibility Vests, Hard Hats, Safety Glasses, and Proper footwear. First violation is written warning and counseling, second violation will result in dismissal from the project.

Confined Space

Garney is responsible for evaluating the work site to determine if any confined spaces would be deemed permit required confined spaces. Prior to every entry into a confined space atmospheric testing with an air monitor shall be completed. All air monitors shall be bump tested prior to use and shall be calibrated at least once every quarter. Documentation of the calibration shall be made available to all persons involved in confined space work. Garney does not anticipate permit required confined spaces on this project.

Slips/Trips/Falls

Slips, trips, and falls can be prevented with proper attention to the surrounding conditions and good housekeeping techniques. As this project is within the winter month's attention to wet conditions and analyzing the surrounding area prior to movements is critical. Winterization of roads and walkways will be required to maintain stable work environments.

Existing Utilities - USA and Utility Coordination

Prior to any excavation for installation of pipe or service relocations, Garney will call in to Underground Service Alert (USA) for the entire pipe design configuration for utility marking, and will pothole all utilities within the pipe alignment to ensure all utilities and depths of pipe are positively identified. During potholing and construction activities around PG&E transmission lines or other high pressure lines, Garney will contact PG&E prior to work in the area, and will have a PG&E representative onsite to assist in pipe locating and as a safeguard from any potential punctures. The USA will remain active until Garney is finished with construction in the area. The following table provides the utility contact information for the project.

UTILITY CONTACTS FOR PROJECT AREA					
AGENCY	TYPE	CONTACT	TITLE	PHONE	EMAIL
AT&T	COMMUNICATIONS	JANICE COMASKEY	ADMIN MANAGER CONSTRUCTION & ENGINNERING	(408) 635-8781	jc4363@att.com
CALIFORNIA AMERICAN WATER	WATER	DOUGLAS FRASER	SENIOR PROJECT MANAGER	(831) 236-4494	douglas.fraser@amwater.com
COMCAST	COMMUNICATIONS	MARK ROSE	CABLE CONTRACTOR	(831) 633-2392	mark.rose@cablecomllc.net
CITY OF MARINA	SEWER AND STORM DRAIN	NOURDIN KHAYATA	CITY ENGINEER	(831) 884-1212	nkhayata@ci.marina.ca.us
CITY OF MONTEREY	SEWER AND STORM DRAIN	JOHN KUEHL	BUILDING OFFICIAL	(831) 646-5643	kuehl@monterey.org
CITY OF PACIFIC GROVE	SEWER AND STORM DRAIN	VINCE GENTRY	SEWER FIELD SUPERVISOR	(831) 648-5722	vgentry@ci.pg.ca.us
CITY OF SEASIDE	SEWER, STORM DRAIN AND WATER	RICK RIEDL	SENIOR CIVIL ENGINEER	(831) 899-6884	rriedl@ci.seaside.ca.us
COUNTY OF MONTEREY	SEWER AND STORM DRAIN	CHAD ALINIO	CIVIL ENGINEER	(831) 755-4937	aliniocs@co.monterey.ca.us
MARINA COAST WATER DISTRICT	WATER	BRIAN TRUE	CAPITAL PROJECTS MANAGER	(831) 384-6131	btrue@mcwd.org
PG&E	GAS AND ELECTRIC	WEIDONG TAN	ENGINEERING & PLANNING DIV.	(831) 784-3510	wxtk@pge.com
MONTEREY PENINSULA WATER MANAGEMENT OFFICE	WATER	JOE OLIVER	WATER RESOURCES MANAGER	(831) 658-5600	joe@mpwmd.dst.ca.us
MONTEREY REGIONAL WATER POLLUTION CONTROL AGENCY	SEWER AND RECYCLED WATER	JENNIFER GONZALES	ENGINEERING MANAGER	(831) 883-6172	jennifer@mrwpca.com
PRESIDO OF MONTERY, US ARMY	UTILITIES	ANDREW STILLWELL	PUBLIC UTILITIES SPECIALIST	(831) 242-3100	andrew.n.stillwell.civ@mail.mil
FORT ORD REUSE AUTHORITY (FORA)	FORT ORD PROPERTY	STAN COOK	FACILITIES MANAGER	(831) 883-3672	stan@fora.org

Hand and Power Tools

All hand and power tools shall be maintained and operated in a safe condition and be used/operated as per the manufacturer's guidelines. All power tools designed by the manufacture with a guard shall have the guard in place at all times while in operation. All employees working with hand and power tools that produce flying sparks or particles shall be equipped with safety goggles and a full face shield. All hand and power tools shall be inspected prior to every use by

the operator of the tool. All tools found to be not in proper working condition shall be immediately removed from service and tagged out of service.

Cave-ins

Cave-ins will be prevented by following proper excavation procedures. Competent Persons, during their inspections, shall be able to determine the adequate protective system as required for Soil Classification determined. Protective systems are to be installed on all excavations greater than 5' in depth. Protective Systems shall be installed to protect workers from cave-ins. The system installed shall be one of the following:

1) *Sloping or benching of the excavated wall*
2) *Bracing using hydraulic aluminum shoring or trench shields*
3) *System designed by a registered professional engineer.*

Concurrent Work with Other Trades

As this project is within an active construction zone with multiple contractors on site, it is important to coordinate activities to ensure activities will not conflict. Employee's attention to surrounding trades and moving equipment within the work zone is critical to maintain awareness of positioning. When entering an active work zone occupied by other trades, properly communicate your work activity to other contractors to mitigate conflicts and make them aware of your items of work which could overlap.

Drug Screening Procedures

New Hire Employee Screen

All prospective Garney newly hired employees must complete and pass a drug screen prior to performing any task(s). The drug screen should be performed before they receive orientation.
The drug screen will be performed on site or at the clinic by trained personnel utilizing a five panel drug screen.

If a positive drug screen is obtained from the onsite drug screen, results will be documented and the individual will be escorted to the company clinic where a lab based drug screen will be performed.

Post-Accident Screen

All Garney employees involved in an accident or serious incident will be drug screened. Employees that must go to the clinic for injury treatment will be drug tested at the clinic. Employees involved in an accident or serious incident but do not require medical treatment at a clinic will be drug screened on site utilizing using a five panel drug screen.

If a positive drug screen is obtained from the onsite drug screen, results will be documented and the individual will be escorted to the company clinic where a lab based drug screen will be performed.

General Rules of Conduct:

The following general rules of conduct apply to all contractors and their employees while engaged in work for or on behalf of this project.

A. Never perform work over the heads of people or leave tools or equipment overhead.
B. Never jump from any elevated surface.
C. Isolate and identify hazardous work areas with safety markers, tape barriers, blinking lights, safety cones, or other means.
D. Alcoholic beverages, illegal substances or persons under the influence of such products are not permitted on the project site.
E. Firearms, explosives and ammunition are strictly prohibited.
F. Employees must wear appropriate attire at all times while on site.
G. All posted instructional signs such as WARNING, CAUTION, RESTRICTED AREA, etc. must be followed.
H. Best management practices should be utilized to ensure safe and environmentally sound performance of all tasks.
I. Appropriate signage must be used to adequately redirect traffic in the event of road or property access closures.
J. Building exits and emergency equipment must be kept accessible at all times.
K. Outdoor painting, grinding or similar activities should be done away from building air handling equipment or air intake vents.
L. Indoor painting, grinding or similar activities must be done in a manner that does not become a hazard to employees or the public. Use of general or point of operation ventilation shall be used as necessary.
M. All employees must have received appropriate safety training for their job tasks and for all chemicals and equipment to be used.
N. Property, equipment, and materials left at job sites is done at the contractors risk and shall be stored in a manner that will not expose employees or the public to a hazard.
O. All contractors must cooperate during any inspection of the work area by any authorized entity.

Training

Garney will provide regular and continuing H&S training for all employees, and to monitor subcontractor training programs. Training will to include a site safety orientation as well as task-specific training as required by regulatory agencies or identified within the Garney Safety Manual.

Task Specific Training documentation for covered tasks are available for individual Garney Employees on record at the main office. Garney Employees will have proper documentation in hand during the performance of a task requiring specific training. i.e. Confined Space and mobile equipment operation.

Health and Safety Meetings and Communication

All safety meetings will be documented. Record retention will be in accordance with the contract. Regularly scheduled safety meetings will be held on the site for all personnel. At a minimum, these will include:

• **Tailgate Safety Meetings**: Each supervisor will hold a safety/task training meeting in his or her work area, at least weekly. Subject matter will include specific safety procedures pertinent to the crew's activities, with emphasis on safe working procedures and potential hazards.

• **Monthly Supervisor Safety Meetings**: Garney will hold a monthly meeting for all supervisors and managers to review safety statistics and safety incidents, address safety concerns, and develop action plans to achieve project H&S goals and objectives. Action items shall be documented and tracked to completion.
• **Safety Communications**: Garney will provide employees with pertinent information regarding health and safety as necessary with respect to: country-specific H&S regulatory information, company-specific safety information, awareness posters, communication of workplace incidents, etc. This can be accomplished through the use of strategically located employee communication bulletin boards.

Hazard Communications and SDS

For this project Garney Construction will follow the Hazardous Communications Program and/or GHS as outlined in the Garney Safety Manual.

Safety Data Sheets (SDS)

All materials, chemicals, and liquids used in process or conjunction with the construction of this project will be logged on a Job Master SDS List. This list along with a copy of the specific SDS sheets will be maintained by the project superintendent. In addition, this information may be available to all employees by means of duplicate copy of the logs and all SDS sheets located in each supervisors vehicle.

Hazardous Material Identification

Potential risks onsite include contact with Hazardous soils during the excavation of the pipeline. Should any material found contain noticeable odor or visible staining, operations will be halted and inspection will be performed by Hazwopper trained Garney personnel. If determined as potentially hazardous, Garney will notify the Owner and Monterey County Department of Environmental Health, and will retain qualified personnel for sampling and remediation based on the material classification.

Hazwoper Trained Personnel:

Greg Lutes	Garney Superintendent	916-217-4615	gregl@garney.com

Asbestos Pipe Handling

Should Asbestos pipe be found in an area and require removal, Garney will perform the following procedures:

- Proper PPE per Cal OSHA standards will be worn by employees based confirmation of Asbestos pipe.
- Pipe will be assessed and wetted down to ensure the casing is not friable, and then will removed at the joints, bagged, labeled, and disposed of at an appropriate site.
- Should the pipe need to be cut at a certain location away from a joint, the pipe cut utilizing a snap cutter to minimize any particles. Sections will then be bagged, labeled, and disposed of as stated above

Contaminated Soil General Handling Procedures

The following are general procedures to be followed for hazardous soils found. The identified known potential hazardous material sites will be tested prior to construction in the area, and the handling procedures will be modified in a removal plan as necessary, depending on the pollutant(s) found.

- To minimize on-site storage, contaminated soil shall be disposed of properly in accordance with all applicable regulations. All hazardous waste storage will comply with the requirements in Title 22, CCR, Sections 6626.250 to 66265.260.
- Test suspected soils at an approved certified laboratory.
- If the soil is contaminated, work with the local regulatory agencies to develop options for treatment and/or disposal.
- Avoid temporary stockpiling of contaminated soils or hazardous material.
- If temporary stockpiling is necessary:
  - Cover the stockpile with plastic sheeting or tarps.
  - Install a berm around the stockpile to prevent runoff from leaving the area.
  - Do not stockpile in or near storm drains or watercourses.
- Contaminated material and hazardous material on exteriors of transport vehicles shall be removed and placed either into the current transport vehicle or the excavation prior to the vehicle leaving the exclusion zone.
- Monitor the air quality continuously during excavation operations at all locations containing hazardous material.
- Procure all permits and licenses, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the work, including registration for transporting vehicles carrying the contaminated material and the hazardous material.
- Collect water from decontamination procedures and treat and/or dispose of it at an appropriate disposal site.
- Collect non-reusable protective equipment, once used by any personnel, and dispose of at an appropriate disposal site.
- Install temporary security fence to surround and secure the exclusion zone. Remove fencing when no longer needed.
- Excavation, transport, and disposal of contaminated material and hazardous material shall be in accordance with the rules and regulations of the following agencies
  - United States Department of Transportation (USDOT).
  - United States Environmental Protection Agency (USEPA).
  - California Environmental Protection Agency (CAL-EPA).
  - California Division of Occupation Safety and Health Administration (CAL-OSHA).
  - Local regulatory agencies.

Known Potential Hazardous Soil Areas

An Environmental Database/Document Review Report (EDDRR) and the separate AECOM memo are attached to this Plan. Review of these databases was conducted for CalAm in order to identify potential hazardous sites that might impact the project corridor. The EDDRR included a third-party search of regulatory review databases undertaken by Environmental Data Resources (EDR) (sites within 1 mile), Envirostor (sites within 1/8-mile) and RWQCB's Geotracker online databases. The memo provides findings obtained during a November 14, 2016, Department of Toxic Substances Control's (DTSC) Envirostor Database review for waste sites within ¼ mile of the construction limits, as required in the Mitigation Monitoring and Reporting Plan.

The databases evaluated in these documents identified Recognized Environmental Conditions (RECs) that might have impacted soils or groundwater within the project corridor. Two sites were determined to present a potential REC and have the potential to impact soils or groundwater within the project corridor. Chemicals at these locations include:

- Total Petroleum Hydrocarbons as Gasoline (TPH-g)
- Benzene
- Methyl tertiary butyl ether (MTBE)
- Tertiary butyl alcohol (TBA)

In addition to this list of all hazardous chemicals with the potential to occur on the project site, the following table presents Permissible Exposure Limits associated with these chemicals.

Permissible Exposure Limits and Chemical/Physical Properties
Project Field Activities

Chemical Name	Cal OSHA PEL		NIOSH REL		Symptoms
	TWA (ppm)	STEL (ppm)	TWA (ppm)	STEL (ppm)	
gasoline	300 ppm	500 ppm	Ca	----	irritation eyes, skin, mucous membrane; dermatitis; headache, lassitude (weakness, exhaustion), blurred vision, dizziness, slurred speech, confusion, convulsions; chemical pneumonitis (aspiration liquid); possible liver, kidney damage; [potential occupational carcinogen]
benzene	1	5	Ca 0.1	1	irritation eyes, skin, nose, respiratory system; dizziness; headache, nausea, staggered gait; anorexia, lassitude (weakness, exhaustion); dermatitis; bone marrow depression; [potential occupational carcinogen] Benzene is known to the State of California to cause cancer according to the provisions of Proposition 65.
MTBE	40	----	50	50	The substance is irritating to the skin. If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. Exposure far above the OEL could cause lowering of consciousness.

TBA	100	150	100	150	Irritation eyes, skin, nose, throat; drowsiness, narcosis

PEL (Cal/OSHA) = Permissible Exposure Limit (8 CCR 5155, Table AC-1; 5120). California Department of Industrial Relations, General Industry Safety Orders for Chemical Contaminants; expressed as an 8-hour time-weighted average (TWA) concentration.

Per the *Environment Site Assessments and Remediation Reports*, the main site is found adjacent to the pipe alignment identified in the report to contain potential hazardous soil is found at the 351/401 Fremont St area in Monterey. This area will be potholed and sampled prior to construction to verify the material and check if it is above the hazardous material threshold. Plans will be provided to remove and remediate this soil based on the findings of the samples if found as hazardous. During potholing operations, no standing water was found in this area, and therefore contaminated water is not anticipated. If contaminated water is found, said water will be stored in holding tanks, tested, and remediated based on the contaminant found.

Secondary Area of potential hazardous material is the soil adjacent to State Route 68. This area will be tested for ADL, and should this area test above the hazardous material limits, a remediation and removal plan will be provided.

Fire Prevention

For this project Garney Construction will follow the Fire Prevention Program outlined in the Garney Safety Manual.

Fire Recognition
a. Major workplace fire hazards and or ignition sources for this site may include but are not limited to:
Welding Operations
Fuel Storage
b. Suppression Equipment:
All Garney owned pickups and construction equipment will be equipped with the 8# ABC fire extinguishers.
c. Smoking is permitted only in designated areas that will prohibit the ignition of fire from surrounding material. Smoking is prohibited within 50 feet of storage areas for flammable or explosive materials or near operations that constitute a fire hazard.
d. Open Flame Devices:
Do not leave open flame devices, such as torches, and heaters unattended.

Housekeeping

Good housekeeping will be maintained by promptly removing and disposing of accumulations of combustible scrap and debris in all areas of the job site. Properly collect, store, and remove combustible and flammable waste products at the end of each workday or at the end of each work shift. Use only noncombustible or UL labeled, nonmetallic containers to dispose of waste and rubbish. Keep combustible items separate from each other and from noncombustible items. Label the contents of containers.

Cell Phone Use

Cell use is prohibited in mobile equipment.

Garney Construction Accident Reporting

All employees and subcontractors' employees shall immediately report any incident to their supervisor (this includes accidents and incidents).
Reporting of injury or illness will be completed by the appropriate individuals as outlined in Garney Construction Safety Manual.

This document was created based on information known prior to project mobilization. Revisions and/or updates may be performed by Garney project management when additional information is known as the project progresses.

Garney CONSTRUCTION
ADVANCING WATER

324 E. 11th Street, Suite E2
Tracy, CA, 95376

Phone: 816-741-4600
Fax: 209-229-1870

Submittal No. 005

Project: Monterey Peninsula Water Supply Project - Transfer and Feed Water Pipelines **Date: 7/18/2019**
Contractor: Garney Construction **Sub/Supplier: Garney Construction**

To: California American Water
511 Forest Lodge Rd.
Suite 100
Pacific Grove, CA 93950

Ref: X **New Submittal**
_____ **Resubmittal**

Attn: Lawrence Tam

We Are Sending:		Submitted For:		Action Taken:	
	Shop Drawings	X	Approval		Approved as Submitted
X	Letter		Your Use		Approved as Noted
	Prints		As Requested		Returned After Loan
	Change Order		Review and Comment		Resubmit
	Plans		Information Only	X	Submitted
	Samples	Sent Via:			Returned
	Specifications	X	Attached		Returned for Corrections
	Other:		Separate Cover Via:		

Submittal Type: Product Data

The Following Items are Hereby Submitted:

Submittal No.	Description	Drawing / Detail #	Spec. Section	Qty	Contains Variation to Specifications Yes	No
005	Daytime Noise Control Plan	N/A	01062, MM 4.12-1b	.PDF		X

Remarks:

Please find the attached submittal for the daytime noise control plan.

Please contact the undersigned should there be any questions or comments regarding this submittal.

Contractor's Stamp
The undersigned certifies that review, approval, verification of Products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.

Signed: Nick Hansen
Nick Hansen - Garney Construction

ADVANCING WATER

In order to meet the requirements of specification section 01062-3.06 for noise control and the MMRP requirements outlined in section 4.12-1b, Garney will follow the bullet points below to ensure the noise reduction requirements are met.

- All equipment shall utilize muffled exhausts.
- Modern tier 4 construction equipment shall be used, which all incorporate modern noise muffling systems, that will be kept in good operating condition throughout use on this project.
- The use of pile driving equipment shall be avoided completely.
- Wet-saw cutting shall be used before excavations, to minimize the need for jackhammer use.
- Significant stationary noise sources shall be placed at locations selected to minimize noise exposure. If excessive noise results, noise barriers shall be erected to reduce noise exposure.
- Commute related noise impacts shall be minimized by providing employee parking at the off-site Garney Construction yard and providing group rides to the job site.
- Materials stockpiles as well as staging areas shall be placed in such a manner that minimizes noise exposure.
- On-site equipment maintenance activities shall be limited to comparatively quiet activities such as applying grease. Repairs of equipment shall be performed off-site to minimize noise exposure.
- Noise from construction worker shift change activities shall be generally avoided completely, because construction activities are planned to be limited to a single shift (except when specifically required by the Owner).
- Garney Construction shall notify residents and other sensitive receptors within 300 feet of the construction area of the construction location, nature of activities, and schedule, in writing at least 14 days prior to the commencement of construction activities. In the event that construction must occur within 100 feet of school classrooms or childcare facilities, while in session, then Garney Construction shall notify the school(s) at least 2 weeks prior to performing construction in the vicinity of the school.
- If the local municipality informs Garney Construction of noise complaints received, Garney Construction shall inform the Owner. In coordination with the Owner, Garney Construction shall modify any construction activities that generate excessive noise levels.
- If Garney Construction receives any noise complaints directly, Garney Construction shall immediately notify the owner.

Garney CONSTRUCTION
ADVANCING WATER

324 E. 11th Street, Suite E2
Tracy, CA, 95376

Phone: 816-741-4600
Fax: 209-229-1870

Submittal No. **006**

Project: Monterey Peninsula Water Supply Project - Transfer and Feed Water Pipelines **Date:** **7/26/2019**
Contractor: Garney Construction **Garney Construction**

To: California American Water
511 Forest Lodge Rd.
Suite 100
Pacific Grove, CA 93950

Ref: X **New Submittal**
_____ **Resubmittal**

Attn: Lawrence Tam

We Are Sending:		Submitted For:		Action Taken:	
	Shop Drawings	X	Approval		Approved as Submitted
X	Letter		Your Use		Approved as Noted
	Prints		As Requested		Returned After Loan
	Change Order		Review and Comment		Resubmit
X	Plans		Information Only	X	Submitted
	Samples	Sent Via:			Returned
	Specifications	X	Attached		Returned for Corrections
	Other:		Separate Cover Via:		

Submittal Type: Product Data

The Following Items are Hereby Submitted:

Submittal No.	Description	Drawing / Detail #	Spec. Section	Qty	Contains Variation to Specifications Yes	No
006	Groundwater Management Plan	N/A	02240, MM 4.7-2b	.PDF		X

Remarks:

Please find the attached submittal for the groundwater management plan.

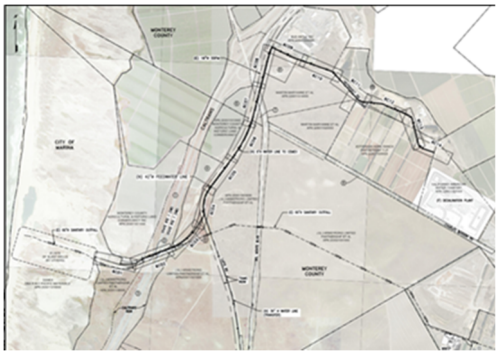
Please contact the undersigned should there be any questions or comments regarding this submittal.

Contractor's Stamp
The undersigned certifies that review, approval, verification of Products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.

Signed: Nick Hansen
Nick Hansen - Garney Construction

ADVANCING WATER

Groundwater Management Plan



Transfer and Feed Water Pipelines

Garney Project #1115

Based on the bore logs there is no dewatering anticipated for the Transfer and Feed Water pipelines. There are two areas that may potentially require dewatering which are the lake front adjacent to Del Monte Blvd (Locke Paddon Park, approximate STA 320+00 to STA 328+00), and the pipeline installation near bore number 1-5 where there was ground water found at 6' below ground surface (approximate STA 450+00 to STA 462+00). If groundwater is encountered, Garney will test for Turbidity, pH, and any other requirements from the City of Seaside/Marina prior to discharging into the sanitary sewer system upon approval from the city. Should Garney find that any areas require dewatering, Garney will use pumps to actively dewater the trench.

The trench material in the areas identified as potentially requiring dewatering may include wet spoils. This material will be removed and disposed of at the same facility as the dry trench spoils found. One site that will be utilized for these trench spoils is the Monterey Regional Waste Management District facility found at 14201 Del Monte Blvd. in Marina, Ca. The facility accepts wet trench material/dredging.

Any particulates or soil that has fallen out of the settling tank or are captured in the filtration systems will be disposed of once the dewatering is complete or if the system requires material removal. This material will be placed with the trench spoils and off hauled to the MRWMD site.

Garney CONSTRUCTION
ADVANCING WATER

324 E. 11th Street, Suite E2
Tracy, CA, 95376

Phone: 816-741-4600
Fax: 209-229-1870

Submittal No. **007**

Project: Monterey Peninsula Water Supply Project - Transfer and Feed Water Pipelines **Date:** **7/26/2019**
Contractor: Garney Construction **Kaz & Associates**

To: California American Water
511 Forest Lodge Rd.
Suite 100
Pacific Grove, CA 93950

Ref: X **New Submittal**
_____ **Resubmittal**

Attn: Lawrence Tam

We Are Sending:		Submitted For:		Action Taken:	
	Shop Drawings	X	Approval		Approved as Submitted
X	Letter		Your Use		Approved as Noted
	Prints		As Requested		Returned After Loan
	Change Order		Review and Comment		Resubmit
X	Plans		Information Only	X	Submitted
	Samples	Sent Via:			Returned
	Specifications	X	Attached		Returned for Corrections
	Other:		Separate Cover Via:		

Submittal Type: Product Data

The Following Items are Hereby Submitted:

Submittal No.	Description	Drawing / Detail #	Spec. Section	Qty	Contains Variation to Specifications Yes	No
007	Dust Control Plan - Transfer Pipeline	N/A	01062, MM 4.10-1c	.PDF		X

Remarks:

Please find the attached submittal for the dust control plan for the transfer pipeline.

Please contact the undersigned should there be any questions or comments regarding this submittal.

Contractor's Stamp
The undersigned certifies that review, approval, verification of Products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.

Signed: Nick Hansen
Nick Hansen - Garney Construction

Dust Control Plan (DCP)

For

Transmission Mains Monterey Peninsula Water Supply Project (TMMPWSP)

Transfer Pipeline

Cities of Seaside and Marina

Monterey County, CA

Owner:

California American Water Company

511 Forest Lodge Road, Suite 100

Pacific Grove, California 93950

General Contractor:

Garney Construction

324 E. 11th St, Suite E2

Tracy, CA 95376

DCP Prepared By:

Kaz & Associates, LLC

6600 Goodyear Road

Benicia, CA 94510

Preparation Date:

July 25, 2019

Section 1: Project General Information

Project Name:	Transmission Mains Monterey Peninsula Water Supply Project (TMMPWSP) - Transfer Pipeline
Project Address:	General Jim Moore Blvd. near Coe Avenue in Seaside to Lightfighter Drive; under HWY 1 and along the along the Transportation Agency for Monterey County (TAMC) right-of-way (ROW); back under HWY 1 to Marina Drive along west shoulder of Del Monte Blvd within TAMC ROW to the future Desalination Plant Site.
Cities/County:	Seaside and Marina; Monterey County
Construction Dates:	September 1, 2019 through January 2021
Disturbed Surface Area:	49.59-acres

- Pipe Installation within streets: 13,000 LF x 20' ROW area = 260,000 sf = 5.97-acres
- Pipe Installation outside of streets: 38,000 LF x 50' ROW area = 1,900,000 = 43.62-acres

Right of Way (ROW) Areas:

- 20 ft wide work areas related to pipe installation within existing roads/streets
- 50 ft wide work areas for all unpaved ROW areas

Storage Yard Locations:

- Northwest corner of Lightfighter and First Street
- CalAm La Playa Yard – 1237 Playa Avenue, Seaside, Ca 93955
- 299 Neponset Road, Salinas, CA, 93908

Description of Construction operations:

The TMMPWSP - Transfer Pipeline will consist of the installation of approximately 51,000 linear feet (LF) of 36" diameter transmission main pipe installation. The Transfer Pipeline will deliver product water from the Desalination Plant to the existing 30-inch shared pipeline and the aquifer storage and recovery (ASR) system. The Transfer Pipeline will begin at the proposed Desalination

Plant and connect to the shared pipeline approximately 1,000 LF south of the intersection of General Jim Moore Blvd. and Coe Avenue in Seaside. There are four jack and bore locations along the alignment, as well as all associated appurtenances, flow meter vaults (3), an above grade pressure regulating station and numerous pressure reducing vaults. The following construction activities are potential sources of dust:

- Pot Holing for existing utilities within existing roads and ROW areas
- Construction of the Transmission Mains and appurtenances, including all associated vaults, Jack/Bore, and pipeline testing activities
- Site Restoration, stabilization and paving activities

Attachment 1 site map reflects project's alignment, water sources and storage yard locations

Section 2: Site Contacts

Project Owner:	California American Water Company		
Contact:	Tim O'Halloran	Title:	Engineering Manager – Coastal Division
Phone:	(831) 646-3291		
General Contractor:	Garney Construction*		
Contact:	Sean Summers	Title:	Project Manager
Phone:	(415) 350-3219		
Contact:	Brian Thompson	Title:	Superintendent
Phone:	(209) 665-9922		

*Responsible for the preparation, submittal, and implementation of the Dust Control Plan and responsible for the dust generating operation and dust control applications

Section 3: Best Management Practices and Actions

Dust Control activities will consist of applying water and/or other dust palliatives to prevent or alleviate airborne emissions from exposed pipeline areas or stockpiles from the forces of wind.

Dust control will be applied in accordance with project specifications, (01062: Environmental Requirements, Section D) as well as all local requirements related to dust emissions. The following actions and BMPs will be deployed by Garney Construction during construction of the pipeline:

- Water will be applied to active and inactive exposed areas a minimum of three (3) times daily and or more frequently based on the construction activities, exposed area and wind conditions.
    - Nontoxic soil stabilizers may be used for unpaved access roads, parking areas, staging areas and completed pipe sections under direction of trained staff or as necessary if daily water application (3x per day) are not effective or feasible.
- Hydroseed and/or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more).
- Stockpiles will be adequately wetted (twice daily) or covered when not in use and at the end of each workday.
- Street sweeping (with water sweepers) will be performed for paved streets and staging areas daily, and as necessary if soil or debris are present on paved areas.
- Potable water sources (metered) will be from fire hydrants along the project alignment or from the available potable water tap at/near the designated storage yards.
- Equipment/vehicle speed within active or disturbed areas will be limited to approximately 15 miles per hour (mph) or less to minimize visible dust generation on exposed soils. Speed limit signs will be installed for unpaved areas to limit equipment or vehicle speed to 15 mph or less.
- Haul trucks will be covered and maintain a minimum of 2 feet of freeboard for hauling operations of soil, sand, and other construction materials within public roads. If the 2 feet of freeboard is ineffective, all haul trucks will be covered.
- Soil drop heights will be minimized while loading trucks to minimize potential dust generation.

- Excavation/grading activities will be suspended during high wind conditions, 15 mph or greater wind per project specifications. Additional dust control actions will be taken such as additional watering or covering of exposed stockpiles and spoils with plastic liners or tarps.
- Erosion and sediment control BMPs will be deploy as outlined in the site specific SWPPP to appropriately stabilize disturbed soil areas and provide secondary containment.
- Stabilized construction entrance/exits will be deployed between paved and unpaved areas as outlined in the site specific SWPPP to minimize dirt track out to paved areas. Rock aggregate (3-6"-minus) underlined with fabric, steel rumble plates or other equivalent BMPs will be used for the stabilized entrance/exit.
- Wheel washers shall be installed and used by truck operators at the exits of the construction sites to the MPWSP Desalination Plant, the slant wells, and the ASR well facilities.
- Signs, cones, and other barricades will be used to restrict access to the construction area, staging and storage areas to prevent dust emissions.
- Disturbed areas where vegetation cover was removed will be have vegetation replanted as quickly as possible.

Signage:

Publicly visible signage will be posted along alignment with telephone numbers of Garney's designated staff related to dust complaints. Monterey Bay Unified Air Pollution Control District (MBUAPCD) contact number will be posted (831) 647-9411.

Maintenance and Management:

During all phases of construction, the active and inactive areas will be assessed daily. Designated construction foreman will perform inspections daily during shifts. If any dirt/debris is present on the road outside the direct construction area, Garney Construction will utilize a sweeper to remove the dirt/debris. The project superintendent will spot check areas to ensure no dust issues are present. As necessary, based on the field assessments additional actions will be taken using

the BMPs and actions outlined above to minimize dust and address potential problem areas by end of day.

In the event that complaint arise related to the construction of the pipeline,. The following Garney Construction staff will respond within 48 hours.

Contact:	Brian Thompson
Title:	Superintendent
Phone:	(209) 665-9922

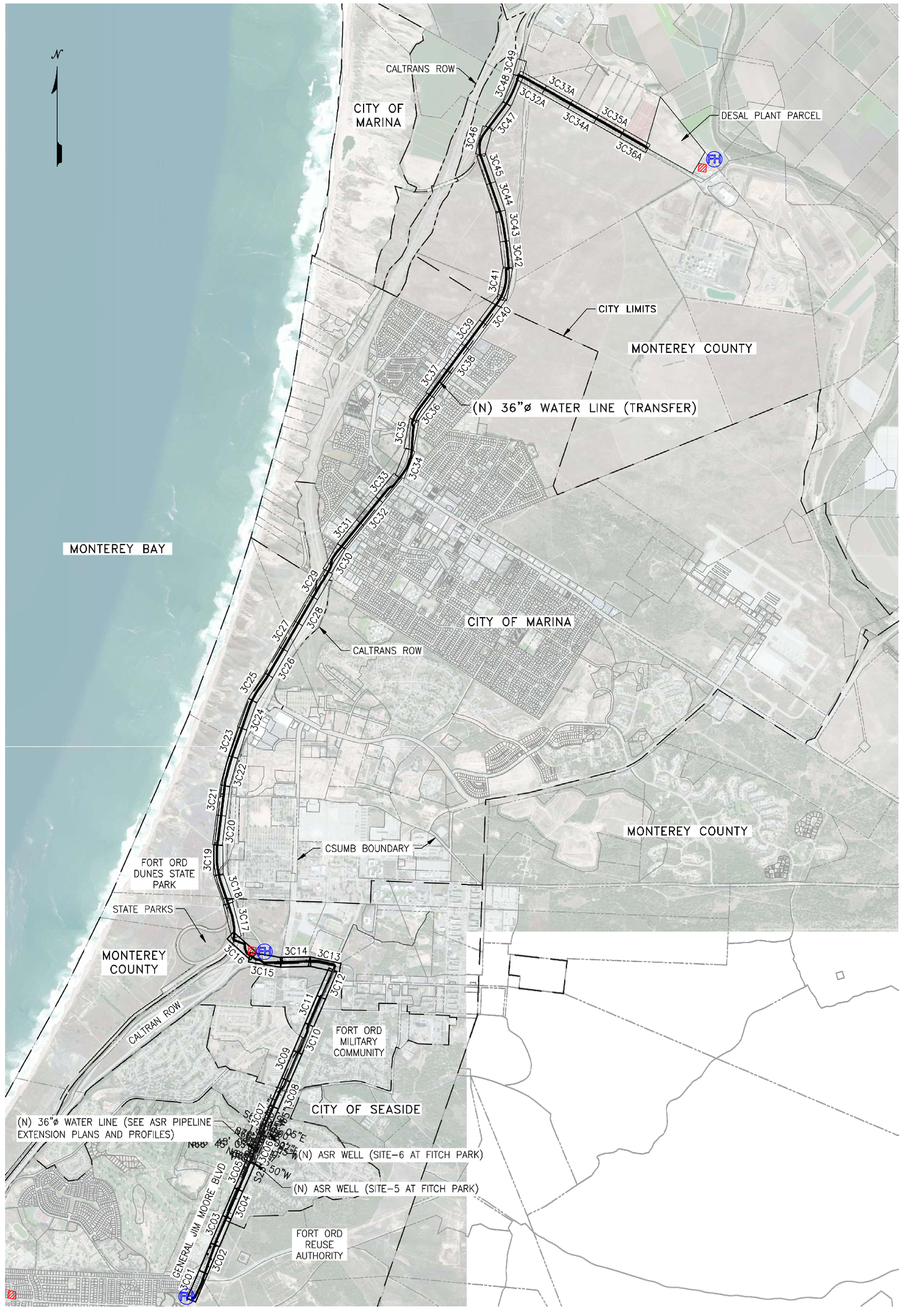
Contingencies:

During unforeseen incidents, if dust emissions become uncontrollable, construction activities will cease immediately until appropriate actions can be implemented or dust emissions are in compliance with local requirements. Additional water trucks will be available for use on an on-call/as needed basis.

Attachments

Attachment 1: Site Map

Attachment 1: Site Map



KEY MAP
1"=2,000'

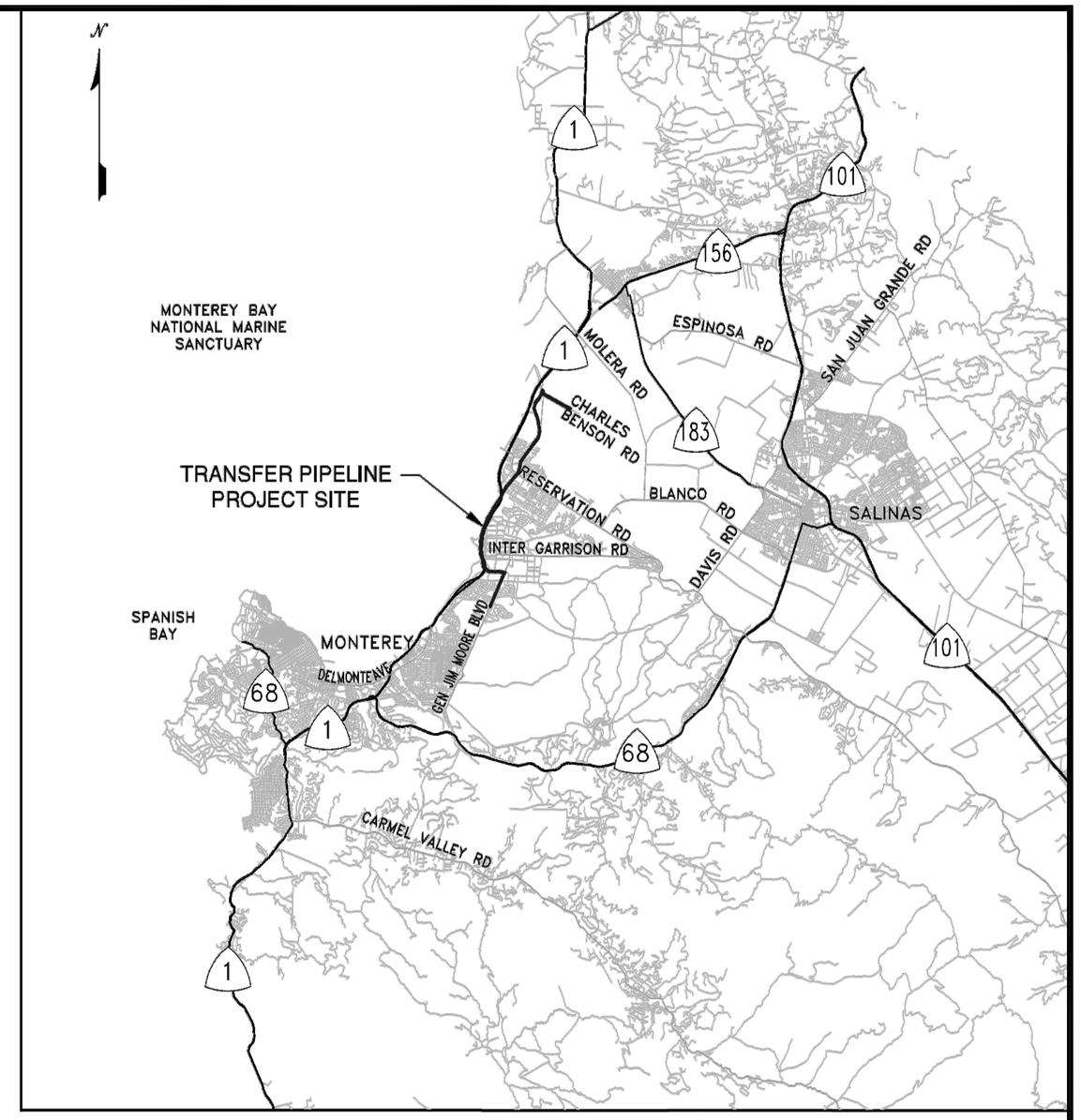
0 2000 4000 6000
SCALE: 1" = 2,000'

LEGEND

- PIPELINE ALIGNMENT
- STORAGE YARD LOCATIONS
- FIRE HYDRANT OR OTHER WATER SOURCE LOCATIONS

NOTES

1) SEE DUST CONTROL PLAN FOR DEPLOYMENT AND IMPLEMENTATION ACTIONS TO BE TAKEN DURING CONSTRUCTION.
2) PLAN TO BE UPDATED TO REFLECT CHANGES TO STAGING AREAS AND WATER SOURCE LOCATIONS.



SITE LOCATION MAP
NTS

BMP INSTALLATION LOG

AREA	DESCRIPTION OF BMP's	DATE COMPLETED

REV	DESCRIPTION	DWN/CKD	APPROVED	DATE

PREPARED FOR:
GARNEY CONSTRUCTION
324 E. 11TH STREET, SUITE E2
TRACY, CA 95376
(925) 800-1848

PREPARED BY:
KAZ ASSOCIATES
ENVIRONMENTAL SERVICES
6600 GOODYEAR ROAD, BENICIA, CA 94510
PHONE: (707) 747-1126 FAX: (925) 871-5172

DRAWING DESCRIPTION:
TRANSMISSION MAINS FOR MPWSP
TRANSFER PIPELINE
SEASIDE, MARINA AND MONTEREY COUNTY, CA
DUST CONTROL OVERVIEW
JULY 2019

SHEET 1 OF 31

Garney CONSTRUCTION
ADVANCING WATER

324 E. 11th Street, Suite E2
Tracy, CA, 95376

Phone: 816-741-4600
Fax: 209-229-1870

Submittal No. **008**

Project: Monterey Peninsula Water Supply Project - Transfer and Feed Water Pipelines **Date:** **7/26/2019**

Contractor: Garney Construction **Sub/Supplier: Garney Construction**

To: California American Water
511 Forest Lodge Rd.
Suite 100
Pacific Grove, CA 93950

Ref: X **New Submittal**

_____ **Resubmittal**

Attn: Lawrence Tam

We Are Sending:		Submitted For:		Action Taken:	
	Shop Drawings	X	Approval		Approved as Submitted
X	Letter		Your Use		Approved as Noted
	Prints		As Requested		Returned After Loan
	Change Order		Review and Comment		Resubmit
X	Plans		Information Only	X	Submitted
	Samples	Sent Via:			Returned
	Specifications	X	Attached		Returned for Corrections
	Other:		Separate Cover Via:		

Submittal Type: Product Data

The Following Items are Hereby Submitted:

Submittal No.	Description	Drawing / Detail #	Spec. Section	Qty	Contains Variation to Specifications Yes	No
008	General Avoidance and Minimization Measures	N/A	MM 4.6-1c	.PDF		X

Remarks:

Please find the attached submittal for the general avoidance and minimization measures.

Please contact the undersigned should there be any questions or comments regarding this submittal.

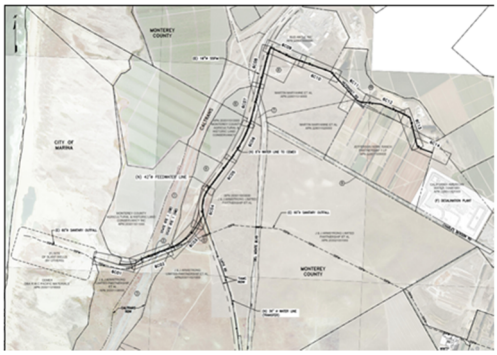
Contractor's Stamp

The undersigned certifies that review, approval, verification of Products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.

Signed: Nick Hansen

Nick Hansen - Garney Construction

General Avoidance and Minimization Measures



Transfer and Feed Water Pipelines

Garney Project #1115

Garney will implement the following general avoidance and minimization measures to protect special-status species and sensitive natural communities at the facility sites during construction:

1. The construction footprint, staging areas, equipment access routes, and disposal or temporary placement of spoils, shall be delineated prior to construction to avoid natural resources outside of the project area. Any construction-related disturbance outside of these boundaries, including driving, parking, temporary access, sampling or testing, or storage of materials, shall be prohibited without explicit approval of the Lead Biologist.

2. New access driveways shall not extend beyond the delineated construction work area boundary. Construction vehicles shall pass and turn around only within the delineated construction work area boundary or local road network. Where new access is required outside of existing roads or the construction work area, the route shall be clearly marked (i.e., flagged and/or staked) prior to being used, subject to review and approval of the Lead Biologist.

3. Vehicle speeds within the project area shall not exceed 15 miles per hour on roads within the construction work zones.

4. Excavated soils shall be stockpiled in disturbed areas lacking native vegetation. Stockpile areas will be along the entire alignment, biologist to clear stockpile alignment prior to construction.

5. Standard best management practices (such as setbacks and use of silt fences and fiber rolls) shall be employed to prevent loss of habitat due to erosion caused by project related impacts (i.e., grading or clearing for new roads). All detected erosion shall be remedied immediately upon discovery.

6. Fueling of construction equipment shall take place at least 50 feet from drainages (including streams, creeks, ditches, culverts, or storm drain inlets) and native habitats. Contractor equipment shall be checked for leaks prior to operation and repaired when leaks are detected. Fuel containers shall be stored within appropriately-sized secondary containment barriers.

7. If special-status wildlife species are found on the site immediately prior to construction or during project construction, construction activities shall cease in the vicinity of the animal until the animal moves on its own (if possible, as determined by the Lead Biologist or biological monitor) outside of the project area. Additional mitigation measures specific to special-status plants; Smith's blue butterfly; black legless lizard, silvery legless lizard, and coast horned lizard; western burrowing; American badger; Monterey dusky-footed woodrat, California red-legged frog and California tiger salamander are described in Mitigation Measure 4.6-1f, 4.6-1g, 4.6-1h, 4.6-1j 4.6-1k, and 4.6-1o. The Lead Biologist and Lead Agencies shall consult with wildlife resource agency(ies) with jurisdiction over the species regarding any additional avoidance, minimization, or mitigation measures that may be necessary if the animal does not move on its own. A report shall be prepared by the Lead Biologist to document the activities of the animal within the site; all fence construction, modification, and repair efforts; and movements of the animal once again outside the exclusion fence. This report shall be submitted to the CPUC and pertinent wildlife agencies with jurisdiction over the wildlife species.

8. Vegetation removal and grading activities shall be conducted during daylight hours. Immediately prior to conducting vegetation removal or grading activities inside fenced exclusion areas, the Lead Biologist or a qualified biologist shall survey within the exclusion area to ensure that no special-status species are present.

ADVANCING WATER

324 E. 11th Street, Suite E2
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Phone: 816-741-4600
Fax: 209-229-1870

Submittal No. 009

Project: Monterey Peninsula Water Supply Project - Transfer and Feed Water Pipelines **Date: 7/26/2019**
Contractor: Garney Construction **Garney Construction**

To: California American Water
511 Forest Lodge Rd.
Suite 100
Pacific Grove, CA 93950

Ref: X **New Submittal**
_____ **Resubmittal**

Attn: Lawrence Tam

We Are Sending:		Submitted For:		Action Taken:	
	Shop Drawings	X	Approval		Approved as Submitted
	Letter		Your Use		Approved as Noted
	Prints		As Requested		Returned After Loan
	Change Order		Review and Comment		Resubmit
X	Plans		Information Only	X	Submitted
	Samples	Sent Via:			Returned
	Specifications	X	Attached		Returned for Corrections
	Other:		Separate Cover Via:		

Submittal Type: Product Data

The Following Items are Hereby Submitted:

Submittal No.	Description	Drawing / Detail #	Spec. Section	Qty	Contains Variation to Specifications Yes	No
009	Construction Vehicle Movement Plan	N/A	MM 4.9-c, MM 4.9-1	.PDF		X

Remarks:

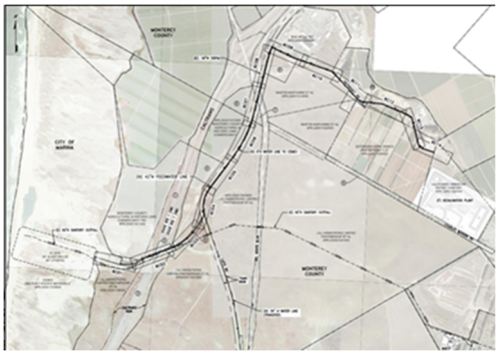
Please find the attached submittal for the construction vehicle movement plan.

Please contact the undersigned should there be any questions or comments regarding this submittal.

Contractor's Stamp
The undersigned certifies that review, approval, verification of Products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.

Signed: Nick Hansen
Nick Hansen - Garney Construction

Construction Vehicle Movement Plan

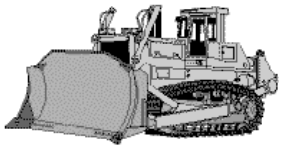


Transfer and Feed Water Pipelines

Garney Project #1115

Equipment Operations

Reference: 29 CFR 1926.600



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Purpose:

Equipment plays a vital role in production on a construction project. However with its rewards also comes the inherent danger of moving vehicles for site workers. Garney has established the following program to serve as guidelines to prevent unnecessary vehicles incidents on its projects.

1926.600 – General requirements for Equipment

1. Equipment operators must possess verified experience (use the equipment experience verification form on the Safety SharePoint site) and/or received Garney specific training for the piece of equipment to be operated.
2. The site superintendent is responsible for compiling a list of names of those persons who are designated / authorized to operate equipment on a Garney project. The list of equipment and names shall be posted in the project office. **There will be no exception, and violators of this policy shall be subject to disciplinary action up to and including termination.**
3. All equipment left unattended at night, adjacent to a highway or active construction site shall be equipped with appropriate warning devices as required by the State's applicable DOT requirements.
4. Heavy machinery, equipment, or parts thereof, which are suspended or held aloft by use of slings, hoists, or jacks shall be substantially blocked or cribbed to prevent falling or shifting before employees are permitted to work under or between them. Bulldozer and scraper blades, end-loader buckets, dump bodies, and similar equipment, shall be either fully lowered or blocked when being repaired or when not in use. All controls shall be in a neutral position, with the motors stopped and brakes set, unless work being performed requires otherwise.
5. Equipment cabs shall have safety glass or equivalent glass that does not distort the driver's vision.
6. When equipment is parked, the parking brake shall be set; on an incline, the wheels shall also be locked.
7. For cranes, derricks, and hoist see Section 18n – Cranes & Hoisting Operations section of the manual.
8. Only trained and authorized workers shall be allowed to operate powered industrial trucks and forklifts.
9. Equipment used for lifting and handling (other than cranes hoist, elevators, derricks and conveyors) shall meet applicable requirements of design, construction, stability, testing maintenance, inspection and operation as specified in ANSI B56.1-1969 'Safety Standards for Powered Industrial Trucks'.
10. A motor vehicle and bidirectional machine in which the rear view is obstructed shall have a reverse signal alarm audible above surrounding background noise or be backed up only when an observer signals it is safe to do so.

11. The following guidelines shall be adhered to while equipment is working or being moved in the vicinity of power lines or energized transmitters, except where the lines have been de-energized and visibly grounded at the site.

VOLTAGE	MINIMUM CLEARANCE (FEET)
750 – 50,000	10
50,000 – 75,000	11
75,000 – 125,000	13
125,000 – 175,000	15
175,000 – 250,000	17
250,000 – 370,000	21
370,000 – 550,000	27
550,000 – 1,000,000	42

    a. All overhead power lines shall be assumed to be energized unless and until the person owning the line indicates that the line is de-energized and it has been visibly grounded at the project site.
    b. A designated spotter shall be used for all operations where working around or passing under an overhead power line. The spotter is responsible for observing clearance of the equipment and must give a timely warning in the event that operator must cease all movement.
12. Any piece of equipment that is in need of repair or any piece of equipment with defective safety equipment/alarms shall be removed from service until it is repaired.

1926.601 – Motor Vehicles

1. All vehicles shall have a service, emergency, and parking brake system; these systems may use the same components. All braking systems shall be in good operating condition.
2. When visibility conditions warrant additional light, vehicles shall be equipped with at least two headlights and two taillights. Vehicles shall have operable brake lights at all times.
3. Tools and material that are carried in the same compartment with workers shall be secured.
4. Vehicles with cabs shall have windshields and powered wipers. Cracked and broken windshield glass shall be replaced. Vehicles that operate in fog or frost shall have defogging and defrosting devices.
5. Vehicles whose payload is loaded by a crane, power shovel, loader, or similar equipment shall have a cab shield and/or canopy adequately to protect the operator.
6. All equipment with an obstructed view to the rear shall have an audible alarm to signal the vehicle is travelling in reverse. The audible alarm shall be above that of the surrounding noise.
7. Only persons seated in a designated seat my travel in a piece of equipment or motor vehicle.
8. All persons working inside of a piece of equipment with a Rollover Protection System (ROPS) shall have the supplied seatbelt fastened at all times while in the piece of equipment.
9. All equipment shall have a documented inspection completed by the operator at the beginning (Daily Equipment Inspection sheet is available on the Safety SharePoint site).

1926.602– Earth Moving Equipment

1. Earth-moving equipment includes scrapers, loaders, crawlers or wheel tractors, excavators, bulldozers, off-highway trucks, graders, agricultural and industrial tractors, and similar equipment.
2. All equipment shall be maintained in safe working condition and shall be appropriate and adequate for the intended use.

3. Equipment shall be operated only by qualified and authorized personnel. Equipment repairs are to be performed only by qualified personnel.
4. Equipment operator and truck drivers shall make a pre-shift walk-around safety inspection of their equipment, and any conditions that affect safe operation shall be corrected before further use.
5. Equipment shall not be operated unless all required guards and safety devices are in place and functioning.
6. Careless, reckless or otherwise unsafe operation or use of equipment shall be grounds for dismissal.
7. Seat belts shall be provided on all earth-moving equipment; they shall be used at all times by all operators of such equipment.
8. Construction equipment or vehicles shall not be moved on access roads or grades unless the road or grade has been constructed and maintained to safely accommodate such equipment as required by the State's applicable DOT requirements.
9. When necessary, an emergency access ramp or berm shall be constructed to restrain runaway vehicles.
10. Brakes on all earth-moving equipment detailed under 29 CFR.602 (a)(1) shall have service braking systems capable of stopping and holding the equipment while fully loaded as specified in the society of *Automotive Engineers Recommended Practices.*
11. Before performing any service or repair work, all equipment shall be stopped and positively secured against movement or operation, unless it is designed to be serviced while running, in accordance with the manufacturer's instructions.
12. When equipment is serviced or repaired, the operator shall dismount until the service or repair is completed and then makes a complete walk-around safety check before remounting.
13. All bi-directional earthmoving equipment with an obstructed view to the rear shall be equipped with an automatic back-up alarm which can be heard above and distinguished from the surrounding noise level. Subcontractors and suppliers' delivery trucks (such as concrete trucks) must have a signalman in full view prior to, and during, any reverse motion operation on the project.
14. All off-highway earthmoving equipment and trucks such as loaders, dozers, scrapers, motor graders, rock trucks, tractors, rollers and compactors shall be equipped with rollover protective structures (ROPS) and seat belts, in accordance with applicable regulations (OSHA, MSHA, USBR, COE). Seat belts shall be used by the operators of all equipment provided with ROPS.
15. Mobile equipment shall not be left unattended unless parked securely to prevent movement, with all ground engaging tools lowered to the ground, brakes set and the engine off.
16. Equipment parked at night shall be lighted, barricaded or otherwise clearly marked where exposed to traffic as required by the State's applicable DOT requirements.
17. Personnel shall not be transported or ride on equipment or vehicles which are not designed for that purpose.
18. When fueling equipment or vehicles with gasoline or liquefied petroleum gas (LPG) the engine shall be shut down.
19. Haul roads shall be designed, constructed and maintained for safe operation consistent with the type of haulage equipment in use. Standard traffic control signs shall be used where necessary.
20. Additional precautions are required when operating equipment on streets and roads open to public vehicular traffic. Appropriate warning signs, flagmen, and/or escorts **MUST** be utilized to stop or control the flow of traffic when a piece of equipment must cross or enter an active lane of traffic. Equipment must be inspected before start of operation each morning to determine that it is street legal and as per local DOT requirements.

1926.1000 – Rollover Protection Structures (ROPS) for Material Handling Equipment

1. Roll-over protective structures (ROPS) applies to the following material handling equipment;
    a. Rubber-tire self-propelled scrapers
    b. Rubber-tire front end loaders
    c. Rubber-tire dozers
    d. Wheel-type agricultural and industrial tractors
    e. Crawler tractors
    f. Crawler type loaders
    g. Motor graders (with or without attachments.)
2. Roll-over protective structures and supporting attachments shall meet the minimum performance of 29CFR 1926.1001 and .1002 along with all applicable current standards.
3. Roll-over protection that has been removed shall be remounted with equal quality or better bolts or welding as required for the original mounting.
4. Roll-over protection shall have a label permanently affixed showing the manufacturer or fabricator's name and address, ROPS model number and the machine or equipment make, model or service number that the structure is designed to fit.

Other Vehicle Safety & Warnings

1. Disabled or parked vehicles next to roadways shall be posted or identified with flares, cones, barricades, reflective triangles or other appropriate warning devices as required by the State's applicable DOT requirements.
2. All over-the-road vehicles shall have appropriate DOT approved flare, triangles, or other warning devices available in the vehicle.
3. Motor vehicles used to carry workers shall be provided with secured seats for passengers with seat belts.
4. Truck bed loads being hauled over public roadways where the load material may be a hazard to other vehicles shall be covered with tarps or other material to keep the loads material from flying free per local traffic ordinance.
5. Vehicles and equipment shall display a slow moving traffic identification symbol on vehicles designed to move slowly (25 mph or less) on public roads.

Garney Specific Requirement

1. All equipment left unattended on a project site must be equipped with a Third Party Lock / Anti-Theft device to render the equipment immovable. The purchasing information is available within the Corporate Safety Menu.
2. Cell phones, MP3 players, radios, etc… shall not be used at any time while operating a piece of equipment.

City of Seaside Encroachment Permit

CITY OF SEASIDE
440 Harcourt Avenue, Seaside, CA 93955
831-899-6825
831-899-6211 Fax

ENCROACHMENT PERMIT

Administrative Use:

Permit Number:	_____	Permit Fee:	_____
Date Issued:	_____	Receipt No:	_____
Expiration Date:	_____	Bond Amount:	_____
		Receipt No:	_____

Applicant/Permittee (May be Contractor): California American Water Company

Phone: (831) 646-3241

Address: 511 Forest Lodge Road #100, Pacific Grove, CA 93950

Contact Person: Christopher Cook

Contact Phone: (831) 646-3241

Job Address/Location: General Jim Moore Blvd to Lightfighter Dr to HWY 1

Cross Streets: Coe Ave, McClue Way, Normandy Rd, Gigling Rd, 1st Ave

Assessor Parcel No:

Tract No:

Contractor:

Phone:

Address:

State Contractor's License No:

Seaside Business License No:

Type of Work: [X] Street Improvement [X] Street Excavation [ ] Driveway [X] Sidewalk

Project Description:

Traffic Control/Lane Drop Required: [ ] no [X] yes, explain below

Sidewalk Closure Required: [ ] no [X] yes

Permittee to Notify the Following:
Underground Service Alert 1-800-227-2600
Seaside Police 831-899-6748
Seaside Fire 831-899-6790
Monterey-Salinas Transit, FAX work location to 831-899-7789
AMR Ambulance 831-718-9555

Applicant/Permittee hereby agrees to comply with the Standard Conditions attached to this application, any special provisions which may be attached to this application

and all City Ordinances, Resolutions, Standards and Specifications currently in force. Execution below shall confirm that Applicant/Permittee has received and reviewed the Standard Conditions, understands the same and agrees to be bound thereby.

Specific Standards for Permit # _____:

_____

_____

Signature (below): Date:

Contractor Applicants, please type or handwrite name:

PERMIT ISSUED BY:

SEASIDE PUBLIC WORKS/ENGINEERING DEPARTMENT DATE

I have examined the work covered by this permit and find that it is accordance with the standards of the City of Seaside and recommend acceptance.

Encroachment Inspector Date

Date Bond Released /Reimbursed Amount Check No.

CITY OF SEASIDE
PERMIT TO ENCROACH

I. STANDARD CONDITIONS

A. Permittee or Permittee's authorized representative must notify the City of Seaside (the City) at least 48 hours before starting any work under this Permit. Failure to so notify is cause for revocation of Permit. Should Permittee fail to commence the work or project for which this permit was issued within 180 days from the date of issuance set forth above or fail to actively and diligently exercise the privileges of this Permit, the Permit becomes null and void.

B. The City shall not be responsible for monitoring the Permittee's compliance with any laws or regulations. If the Permittee performs any work knowing or having reason to know that it is contrary to laws or regulations, the Permittee shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such work.

C. Permittee or Permittee's authorized representative shall notify (underground service alert) at least 24 hours before commencing any excavation necessary to perform the work authorized by this Permit. Permittee agrees to contact and obtain an Inquiry ID Number from (underground service alert) 800 - 422 - 4133 at least two (2) working days prior to commencing work. By signing this Permit application, Permittee acknowledges that Permittee understands the statutes and regulations pertaining to excavation near or in the vicinity of underground utilities and agrees to strictly conform all of Permittee's activities to such requirements. And failure on the part of Permittee to comply with such requirements shall be grounds for the immediate revocation of this Permit.

D. A copy of this Permit shall be kept at the site of the work throughout the period of operations within the jurisdictional limits of the City and any right-of-way therein and shall be shown to any City employee, agent or duly authorized representative or any law enforcement officer upon demand.

E. This Permit is valid only for the purpose specified herein. No change to the scope of work as identified in the application and/or drawings submitted therewith is permitted except upon written permission of the City Engineer or his/her duly authorized representative.

F. Compliance with the American with Disabilities Act (ADA): All work shall be conducted in compliance with all applicable Federal, State, and Local Access Laws, regulations and guidelines including but not limited to the Americans with Disabilities Act Accessibility Guidelines (ADAAG), the Public Rights-of-Way Guidelines (PROWG), Design Information Bulletin 82-05, "Pedestrian Accessibility Guidelines for Highway Projects" and the City's encroachment permit and encroachment permit packet shall be approved by the City's California Licensed Professional Engineer, Licensed Architect, or Licensed Landscape Architect, Activities and uses authorized under this Permit are subject to any instruction of the City Engineer or his/her designated representative, including but not limited to the Public Works Inspector. All instructions must be strictly observed.

G. Any damage caused to City structures by reason of exercise of this Permit shall be replaced or repaired by Permittee at his/her/its sole expense to the satisfaction of the City. Upon notice of damage to City structures arising from the exercise of this Permit, should Permittee fail to promptly make repairs or replaced the damaged item, the City may make any and all repairs or replacement or have repairs/replacement made and Permittee will be billed and shall reimburse City for all costs incurred.

H. Unless otherwise specified herein, this Permit may be revoked or canceled at any time by the City Engineer or his/her duly authorized representative at the sole discretion of the City Engineer or his/her duly authorized representative.

I. Upon written notice of cancellation or revocation of this Permit for any cause whatsoever, Permittee shall promptly restore City right-of-way and structures to their condition prior to the issuance of the Permit and then shall vacate City property. Should Permittee fail to promptly restore the premises or structures to a condition satisfactory to the City Engineer or his/her duly authorized representative, the

City may make any and all repairs or have repairs made and Permittee will be billed and shall reimburse City for all costs incurred.

J. Unless otherwise specifically provided, all costs incurred by Permittee as a result of the conditions of the Permit or the exercise by City of any right, authority, or reservation contained therein shall be the sole responsibility of and shall be borne entirely by the Permittee.

K. Issuance of this Permit shall not be construed as an obligation on the part of the City to assume responsibility for any damages incurred to the Permittee's improvements and/or for any injury or death to person(s) or damage to property arising out of the permitted work.

L. This permit is non-transferable.

M. The City Engineer or his/her designated representative may cancel the permit if the work authorized herein is not commenced within sixty (60) days of issuance and thereafter, in the opinion of the City Engineer, is not diligently prosecuted to completion. Cancellation may be effected by giving written notice thereof by sending the same to the applicant by ordinary mail to the address shown on the application.

N. The permittee or permittee's authorized representative shall notify the City Engineer when all work is completed.

II. INSURANCE

A. Permittee shall maintain and provide commercial general liability insurance, with coverage at least as broad as Insurance Services Office form CG 00 01, in an amount not less than $2,000,000 per occurrence, $4,000,000 general aggregate, for bodily injury, personal injury, and property damage. The policy must include coverage for contractual liability that has not been amended. Any endorsement restricting standard ISO "insured contract" language will not be accepted. *Any insurance proceeds available to Permittee in excess of the minimum limits and coverage set forth in this Permit and which is applicable to a given loss or claim shall be deemed by this Permit to be applicable to the City.* A certificate of insurance evidencing this coverage shall be provided to the City prior to the start of any work under this Encroachment Permit. The City's Risk Manager may from time to time increase the limits of the required insurance coverage.

B. The City is to be named as an additional insured with an endorsement in favor of the City.

C. Coverage provided by Permittee shall be primary and any insurance or self-insurance procured or maintained by City shall not be required to contribute with it. The limits of insurance required herein may be satisfied by a combination of primary and umbrella or excess insurance. Any umbrella or excess insurance shall contain, or be endorsed to contain a provision that such coverage shall also apply on a primary and non-contributory basis for the benefit of City before the City's own insurance or self-insurance shall be called upon to protect it as a named insured.

D. A severability of interests provision must apply for all additional insureds ensuring that Permittee's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the insurer's limits of liability. The policy(ies) shall not contain any cross-liability exclusions.

E. None of the coverages required herein will be in compliance with these requirements if they include any limiting endorsement of any kind that has not been first submitted to City and approved in writing.

F. If Permittee maintains higher limits than the minimums shown above, City requires and shall be entitled to coverage for the higher limits maintained by Permittee. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to City.

G. Permittee must also maintain worker's compensation insurance as required by State law.

III. INDEMNITY AGREEMENT

A. Permittee shall indemnify, defend, and hold harmless City, its officers, employees, and agents from any and all losses, costs, expenses, claims, liabilities, actions, or damages, including liability for injuries to any person or persons or damage to property arising at any time during and/or arising out of or in any way connected with Permittee's authorized activities under the terms of this permit unless solely caused by the gross negligence or willful misconduct of City, its officers, employees, or agents.

B. It is expressly understood and agreed between the parties to this Permit that this is an agreement and permit for access to and for certain events to occur or work to take place on City property. This Agreement and permit is not a construction contract or an agreement for design professional services as those terms are defined or used under Title 12 of the California Civil Code (§§ 2772 et. seq.).

IV. DUTY TO DEFEND

A. As an express and material term of City's issuance of this Permit, Permittee agrees to defend, at its sole expense, the Indemnitees from and against any and all Claims arising out of or related to the permitted encroachment. Permittee's duty to defend shall apply immediately upon demand from the Indemnitees for any injury or death to persons or damage to property occasioned by reason of or arising out of the acts or omissions of the City, its officers, employees and/or agents and the acts or omissions of Permittee, his/her/its agents, employees, contractors and subcontractors and/or any other person or entity performing work authorized by this Permit.

B. In the event of any controversy, claim or dispute arising out of or relating to this Permit or the violation of any covenant contained herein, the prevailing party shall be entitled to receive from the losing party reasonable expenses, including attorney's fees and costs.

C. The City Engineer or his/her designated representative may, either at the time of the issuance of this permit or at any time thereafter until the completion of the work, prescribe such additional conditions as he/she may deem necessary for the protection of the public property or for the prevention of undue interference with traffic or to assure public safety.

V. OTHER CONDITIONS

A. **Progress of Work** Work shall proceed as expeditiously as possible. If the work consists of multiple phases, each phase of work must be approved the City before proceeding with the next phase. The City Engineer or his/her designated representative may cancel the permit if the work authorized herein is not commenced within sixty (60) days of issuance and thereafter, in the opinion of the City Engineer, is not diligently prosecuted to completion. Cancellation may be effected by giving written notice thereof by sending the same to the Permittee by ordinary mail to the address shown on the application.

B. **Care of Drainage** If the proposed work alters surface runoff or interferes with established drainage, ample provisions shall be made by the Permittee to provide adequate drainage and erosion control as approved by the City Engineer. Construction waste or excavated materials will not be allowed to be washed into the storm drain or sewer system.

C. **Maintenance** The Permittee agrees by acceptance of this permit to exercise reasonable care to properly maintain utilities within the City right of way and to inspect for and immediately repair any damage to any improvement within the right of way which occurs as a result of the Permittee activities.

D. **Test Results** If necessary, the Permittee shall provide the City Engineer with soil compaction test results. Compliance with compaction requirements shall be certified by a City-approved materials testing laboratory with local experience.

E. **Pavement Replacement** All pavement that is removed or damaged shall be replaced in accordance with current City of Seaside standards.

F. **Protection of Traffic** Provide protection for the traveling public. Barricades shall be placed with flashing amber lights at night. Flag persons shall be provided if necessary. Warning signs, lights and

temporary traffic control devices shall be placed in conformance with the requirements of the City Engineer or Inspector and the Caltrans Manual of Traffic Control.

G. **Storage of Materials** No material shall be stored within two (2) feet of the edge of the pavement, sidewalk or traveled way or within the shoulder line where the shoulders are wider than five (5) feet. No supplies or equipment shall be stored on the City Street or right of way.

H. **Cleanup** Immediately, upon completion of work and after each work day, all material and debris shall be entirely removed. The right of way shall be left in the same or better condition as before work started.

I. **Conformance of Construction** All construction shall conform to the most current Caltrans and City of Seaside standards and specifications.

J. **Bond** Prior to permit issuance, the Permittee is required to provide a bond in the form of a Letter of Credit, Cashier's Check, Money Order, Cash, or Surety Bond in an amount determined by the City Engineer. The bond will be in the name of the City of Seaside and be held by or deposited to the City. The bond will be released or refunded to the individual submitting it upon satisfactory completion of the improvements, acceptance of the project by the City, and written request by the Permittee [SMC 12.04.020].

K. Permittee or Permittee's authorized representative must notify City of Seaside, herein referred to as "City", at least 48 hours before starting any work under this Permit. Failure to so notify is cause for revocation of Permit. Should Permittee fail to commence the work or project for which this permit was issued within 180 days from the date of issuance set forth above or fail to actively and diligently exercise the privileges of this Permit, the Permit becomes null and void.

L. The City of Seaside shall not be responsible for monitoring the Permittee's compliance with any laws or regulations. If the Permittee performs any work knowing or having reason to know that it is contrary to laws or regulations, the Permittee shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such work.

M. Permittee or Permittee's authorized representative shall notify (underground service alert) at least 24 hours before commencing any excavation necessary to perform the work authorized by this Permit. Permittee agrees to contact and obtain an Inquiry ID Number from (underground service alert) 800 - 422 - 4133 at least two (2) working days prior to commencing work. By signing this Permit application, Permittee acknowledges that Permittee understands the statutes and regulations pertaining to excavation near or in the vicinity of underground utilities and agrees to strictly conform all of Permittee's activities to such requirements. And failure on the part of Permittee to comply with such requirements shall be grounds for the immediate revocation of this Permit.

N. A copy of this Permit shall be kept at the site of the work throughout the period of operations within the jurisdictional limits of the City of Seaside and any right-of-way therein and shall be shown to any City of Seaside employee, agent or duly authorized representative or any law enforcement officer upon demand.

O. This Permit is valid only for the purpose specified herein. No change to the scope of work as identified in the application and/or drawings submitted therewith is permitted except upon written permission of the City of Seaside Engineer or his/her duly authorized representative.

P. Compliance with the American with Disabilities Act (ADA): All work shall be conducted in compliance with all applicable Federal, State, and Local Access Laws, regulations and guidelines including but not limited to the Americans with Disabilities Act Accessibility Guidelines (ADAAG), the Public Rights-of-Way Guidelines (PROWG), Design Information Bulletin 82-05, "Pedestrian Accessibility Guidelines for Highway Projects" and the City of Seaside's encroachment permit and encroachment permit packet shall be approved by the City of Seaside's California Licensed Professional Engineer, Licensed Architect, or Licensed Landscape Architect. Activities and uses authorized under this Permit are subject to any instruction of the City of Seaside Engineer or his/her designated representative, including but not limited to the Public Works Inspector. All instructions must be strictly observed.

Q. Any damage caused to City of Seaside structures by reason of exercise of this Permit shall be replaced or repaired by Permittee at his/her/its sole expense to the satisfaction of the City Engineer. Upon notice of damage to City of Seaside structures arising from the exercise of this Permit, should

Permittee fail to promptly make repairs or replaced the damaged item, the City may make any and all repairs or replacement or have repairs/replacement made and Permittee will be billed and shall reimburse City of Seaside for all costs incurred.

R. Unless otherwise specified herein, this Permit may be revoked or canceled at any time by the City Engineer or his/her duly authorized representative at the sole discretion of the City Engineer or his/her duly authorized representative.

S. Upon written notice of cancellation or revocation of this Permit for any cause whatsoever, Permittee shall promptly restore City right-of-way and structures to their condition prior to the issuance of the Permit and then shall vacate City property. Should Permittee fail to promptly restore the premises or structures to a condition satisfactory to the City Engineer or his/her duly authorized representative, the City may make any and all repairs or have repairs made and Permittee will be billed and shall reimburse City for all costs incurred.

T. Unless otherwise specifically provided, all costs incurred by Permittee as a result of the conditions of the Permit or the exercise by City of Seaside of any right, authority, or reservation contained therein shall be the sole responsibility of and shall be borne entirely by the Permittee.

U. Issuance of this Permit shall not be construed as an obligation on the part of the City to assume responsibility for any damages incurred to the Permittee's improvements and/or for any injury or death to person(s) or damage to property arising out of the permitted work.

V. This permit is non-transferable.

W. The permittee or permittee's authorized representative shall notify the City Engineer when all work is completed.

VI. DOCUMENTS INCORPORATED BY REFERENCE

A. The following documents are incorporated into this encroachment permit.

   a. City Standard Plans

   b. Caltrans Standard Plans

   c. Caltrans Standard Specifications

B. In the event of conflict in the referenced documents for this encroachment permit, the order of precedence from highest to lowest shall be as follows;

   i. Permits and Licenses
   ii. Project Specific Conditions found in Exhibit B to the Encroachment Permit
   iii. Standard Conditions found in Exhibit A to the Encroachment Permit
   iv. Project Plans
   v. Revised Standard Specifications
   vi. Standard Specifications
   vii. Revised Standard Plans
   viii. Standard Plans
   ix. Supplemental project information.

Exhibit A

City of Seaside, Public Works Engineering
Encroachment Permit Special Provisions

Transmission Mains for Monterey Peninsula Water Supply Project (MPWSP) Transfer Pipeline prepared by AECOM dated August, 2015
Permit # (_____)
Applicant: California American Water
Applicant: Garney Construction

May 30, 2019

These specifications are for construction of the proposed Transmission Mains (Project), and, along with construction drawings titled "Transmission Mains for Monterey Peninsula Water Supply Project (MPWSP) Transfer Pipeline, dated August 2015 by AECOM, and details, will accompany each individual Encroachment Permit. All activities shall comply with applicable State, Federal and Local regulations, including but not limited to the Seaside Public Improvement Standards and Standard Specifications, California Department of Transportation

A. General

1. Adhere to applicable city standards, except as modified herein.
2. Notification sent to all affected residents and businesses. Notices shall be sent at least 72 hours in advance of construction activities. See Section B, Traffic Control, below for requirements for placing "No parking signs".
3. Applicant shall implement the following outreach programs as a minimum during construction of the pipeline project:
   3.1. Provide a 24/7 public hotline
   3.2. Door hangers and mailing notices as appropriate
   3.3. Neighborhood meetings as appropriate
   3.4. Install signs along pipeline route on barricades identifying project name and hotline phone number
   3.5. Attend council meetings if requested.
4. Notify City of Seaside Engineering Division **2 weeks prior to start of construction** and provide regular updates as may be required.
   4.1. Email notifications to Scott Ottmar, sottmar@ci.seaside.ca.us, Billy Thomas, bthomas@ci.seaside.ca.us, and Rick Riedl, rriedl@ci.seaside.ca.us.
5. Adhere to the Project Mitigation Monitoring and Reporting Program (MMRP).
   5.1. Provide mitigation plans when requested by the City.
6. If the disturbed area is to be over one (1) acre, a Storm Water Pollution Prevention Plan (SWPPP) shall be prepared and a WDID obtained by the applicant from the State Water Quality Control Board. Submit the SWPPP for City of Seaside review.
   6.1. See Section F, Storm Water Pollution Prevention, below for further details.
7. Subsurface construction shall be accomplished utilizing the following methods:
   A. Trenching in street
   B. Trenching in sidewalk
8. Pot holes are required to determine the type and location of underground utilities.
   8.1. Unless waived by the city inspector, contractor will provide profile of utility. Profile shall identify which utilities are present and depth to the utility.
   8.2. Notify City of Seaside at least 24 hours in advance of digging potholes.
   8.3. City of Seaside may inspect potholes and depths as deemed appropriate.

9. General Jim Moore Boulevard and Lightfighter Drive shall be coated from lip of gutter to lip of gutter with a slurry seal upon pavement restoration. See section E, Paving, below for pavement restoration requirements.
10. Protection and Repair of Existing Storm Drains and Sanitary Sewer Lines
    10.1. Closed Circuit Television (CCTV) inspections of City storm drain lines shall be performed and meet "Performance Specification Guidelines for Pipe Condition Assessment using CCTV" by the National Association of Sewer Service Companies (NASSCO).
    10.2. CCTV inspections are to be performed at all utility crossings or any other locations where City utilities (storm drains) are found to be located within 6'-5" of the outside diameter of the pipeline (i.e. based on USA markings and/or potholing).
    10.3. Contractor shall repair storm drains damaged by construction operations to the satisfaction of the City.
11. Provide City with an indexed preconstruction video of existing surface improvements shown from both directions. Provide copy of preconstruction photographs.
12. Restore, repair, or replace private property improvements damaged by construction operations to the pre-construction conditions as commercially practical and to the private property owner's satisfaction. In the event the private property owner is not satisfied with the restoration or repair of damaged improvements, Applicant's External Affairs Manager, Construction Manager, and/or other such representative shall meet with the property owner to resolve the issue.
13. As determined necessary by the city engineer, a Revegetation Plan shall be prepared and submitted to the City of Seaside by a qualified biologist to revegetate and restore impacted habitat. This plan shall include a list of appropriate species, planting specifications, monitoring procedures, success criteria, and contingency plan if success criteria are not met.
14. The City of Seaside retains the right to hire a third party inspector, to monitor adherence to these conditions.
    14.1. Third party inspector to be paid by Applicant.
    14.2. Any expenses greater than paid permit fees will be billed to Applicant, and paid upon demand. Failure to pay constitutes a breach of this permit.
    14.3. City inspections are intended for Quality Assurance (QA) purposes.
    14.4. Provide Quality Control (QC) reports in accordance with the City's Quality Assurance Program (QAP) and as requested by the City to verify conformance to these permit conditions. In the event that there is a conflict between the QAP and the conditions in this permit, the QAP shall prevail unless otherwise directed by the City Engineer.
    14.5. City shall be included in construction progress meetings and provided copies of meeting agendas and minutes when requested
15. Contractor and sub-contractors contracted by Applicant shall provide insurance and indemnification to the City of Seaside prior to start of construction. Insurance shall have following minimum policy coverage:
    15.1. Bodily injury: $2,000,000 per occurrence and $4,000,000 aggregate
    15.2. Automobile liability: $1,000,000 combined single
    15.3. Worker's compensation: $1,000,000 per accident or disease.
16. Applicant to provide a bond in the amount of pavement restoration.
    16.1. Applicant to submit an engineer's estimate of probable cost for pavement restoration as described within these conditions.
17. Contractors must have a City of Seaside business license.
18. New underground water main and appurtenances to be located per plans titled: Transmission Mains for Monterey Peninsula Water Supply Project (MPWSP) Transfer Pipeline, dated August 2015 by

AECOM. This permit authorizes work only in areas of the City of Seaside right of way or property owned by the City of Seaside within existing easements.

18.1. Applicant is responsible for determining and securing easements and coordinating with property owners for installation of water mains and associated infrastructure, including fire hydrants, blow-off valves and air release valves.

18.2. Applicant shall submit record drawings upon completion of the work.

B. Temporary Traffic Control

1. Notify, coordinate, and resolve access, ingress, egress, special needs (disabilities), and parking issues with all private property owners/tenants and businesses along the pipeline route.
2. Temporary Traffic control shall conform to the most recent edition of the California Manual of Uniform Traffic Control Devices and must also be prepared and stamped by a licensed traffic engineer.
   2.1. Submit traffic control plan to City for review and approval two week prior to start of construction.
3. Haul roads will follow pipeline alignment and approved traffic control plans to the extent possible.
4. Avoid truck trips through designated school zones during school drop off and pickup hours. Provide construction schedule updates to the schools for bus route coordination.
5. Road closure with detour is not permitted along General Jim Moore Boulevard or Lightfighter Drive.
   5.1. At least one lane of traffic shall be maintained at all times.
   5.2. At least one driveway approach shall be available for each business affected.
   5.3. Provide safe provision for pedestrians and bicycles around and within construction zones in conformance with approved traffic control plans.
6. "No Parking" signs shall be posted a minimum of 72 hours prior to work beginning in that area, and
   6.1. shall clearly state the date(s) and time that no parking is in effect, and
   6.2. shall provide a contact phone number for the project manager and/or contractor
   6.3. Over-night parking of tracked construction vehicles is authorized on public right of way only inside of the work zone. All other construction vehicles are prohibited from over-night parking on public right of way inside or outside of the work zone.
7. Provide changeable message signs (CMS) alerting motorists of detours two weeks in advance for work along General Jim Moore Boulevard and Lightfighter Drive. CMS to be left out for duration of detour.
8. Notify Police, Fire Departments, and Monterey Salinas Transit prior to construction commencing.

C. Excavation in Parkways and Sidewalks

1. Unless otherwise approved by City Inspector, excavations in sidewalks and parkways must be backfilled or temporarily paved. No excavations shall remain open past work hours.
2. Backfill in parkways and sidewalks as approved by City Inspector. Temporary backfill shall be ADA compliant.
3. Compaction of backfill in parkways and sidewalks shall be 90% minimum.
4. All improvements and landscaping in parkways shall be restored in-kind. The contractor shall take photographs of each work area prior to beginning and retain in files for reference and examination.
5. Sidewalk areas shall be repaired per City of Seaside standards S-101, S-102, S-103, S-104.
   a. Damaged concrete shall be removed and replaced to the nearest construction joint.
6. Vaults and boxes installed within parkways and sidewalks shall be flush to finish grade.
   6.1. Lids and covers must clearly denote type of utility contained within.

D. Excavation in Streets

1. Street excavations shall be square and saw cut with smooth straight edges unless otherwise approved by the City.
2. Backfill or plating shall occur on same day as excavation. No excavations may remain open past work hours.
   2.1. See S-601 for trench restoration details.
3. Compaction shall achieve 95% relative at optimum moisture content, in agreement with Section 19-5 of the current Standard Specifications, State of California, Department of Transportation.
   3.1. Compaction shall be **in layers** not to exceed 0.67 feet (8 inches). At depths greater than 2.5 feet (30 inches), compaction shall be in layers not to exceed 1 foot (12 inches).
   3.2. Compaction testing will be provided for each day when backfill occurs or at 300 LF maximum, whichever is more frequent.
   3.3. Compaction test for at least one lift of each type of backfill material placed during the day.
   3.4. Provide copies of compaction reports from a certified **third party testing company**.
4. Slurry backfill, if used, shall conform to S-600 or alternative slurry backfill material by written approval of the City Inspector. Admixtures shall not be used without first providing product submittals and obtaining City's written approval. Care shall be taken to keep the edges of the asphalt free from slurry.
5. Steel plates shall conform to California Department of Transportation Standard Specifications and shall have a traction surface. Provide Certificate of Compliance that plate meets these standards.
6. Slurry backfill shall remain a minimum of 4 inches below the finished surface. Slurry shall cure for 24 hours. If the slurry has attained sufficient hardness for traffic, the excavation shall be covered with temporary paving. Where the slurry has not attained sufficient hardness, the excavation must be covered with steel plates until the next day.
7. Temporary paving and trench plates shall be maintained in good condition at all times, and shall be inspected by the permittee at the end of each work day. Temporary paving materials shall be added as needed to maintain a smooth riding surface within 48 hours of any complaint received from the public or as directed by the City Engineer.
8. Trenching within existing pavement will be patched with cold mix upon completion of slurry backfill. Cold mix removed at time of final pavement installation.
9. Provide shoring, trench box or shield when required by OSHA excavation requirements. Submit stamped calculations to the City for review.
10. Vaults and boxes installed within city streets shall be flush with final pavement and rated for vehicular traffic, H-20 wheel loading.
11. Damage to streets by construction vehicles, including track marks, shall be repaired to the satisfaction of the City Engineer.

E. Paving

1. Temporary paving may be cold-mix asphalt, flush with the finished surface.
2. Prior to paving with hot mix asphalt, the edges of the asphalt shall be cleaned as necessary before the application of the tack coat.
3. General Jim Moore Boulevard and Lightfighter Drive shall receive a Type II slurry seal for the entire width, or up to centerline or median as applicable.
4. Trench restoration shall be in conformance with standard plan s-601.
5. Hot mix asphalt work shall conform to Section 39 of the Standard Specification, State of California, Department of Transportation, most recent edition.
6. Quality Assurance testing shall conform to the Sampling and Testing Frequency Table provided by the City.

7. In streets that are cracked, damaged or "alligatored," the extent of removal and replacement of asphalt shall be per the city inspector's direction.
8. Restore pavement markings in kind. Existing signs, striping, pavement legends, and markings will be restored to current City standards and as directed by the City. Provide temporary pavement markings and striping on arterials in accordance with MUTCD and Caltrans standards. Provide permanent striping, legends, and markings within ten (10) business days of permanent pavement restoration. City to provide specifications on painting, striping, and markings.
   8.1. Adhere to sections 84 and 85 of Caltrans Standard Specifications as applicable.
   8.2. When using paint, apply a minimum of two coats.
9. Repair cross gutters per standard S-106.
   9.1. Replace cross gutter to nearest construction joint, unless otherwise directed by the city inspector
   9.2. Weather permitting, pavement restoration paving should occur within 10 working days of the completion of the underground construction as shown on Project plans.
10. Restore and test traffic loop detectors within three (3) business days of structural pavement restoration. Contractor to coordinate with City for loop replacement/repair standards.
    10.1 Contractor may use alternate methods of traffic detection in lieu of traffic loops. Alternate form of traffic detection must be approved by the City.
11. Survey monuments and benchmarks removed or damaged due to construction shall be restored by a licensed land surveyor.
    11.1. All survey monuments shall be replaced in accordance with City standard detail S-802 and recorded with the County in conformance with the requirements of the "Business and Professional Code" of the State of California, chapter 15, "Land Surveyors" article 5, "Surveying Practice", and section 8762 "Record of Survey" as appropriate.
    11.2. Benchmarks shall be re-established to the point nearest the original benchmark and set with a bronze disc.
12. All final pavement restoration shall be completed within 30 days of pipeline completion, unless otherwise agreed to in writing by the City.

F. Storm Water Pollution Prevention Requirements

1. Adhere to submitted project SWPPP prepared by TBD titled "_____", prepared (DATE).
2. Provide drain inlet protection.
   2.1. Drain inlet protection shall not interfere with storm water flows. Contractor is responsible for maintaining drain inlet protection.
   2.2. No obstructions to storm drain inlets are permitted during a rain event.
3. Materials management
   3.1. Covering stockpiles, trash and debris
   3.2. Concrete washout if applicable
   3.3. Containment of hazardous materials and waste.
   3.4. Drip pans beneath heavy equipment.
4. Daily sweeping at a minimum or more frequent as required to prevent offsite tracking of sediment.
5. Applicant or its contractor shall submit a plan prior to discharge of flush water from pipeline mains.
   5.1. Applicant responsible for securing necessary permission from Monterey Regional Water Pollution Control Agency for discharge to the sanitary sewer system.
6. No discharge to the storm drain system without prior written approval by the City of Seaside
   6.1. Develop and submit a plan demonstrating removal of chlorine, sediment, or other pollutants as identified by the City prior to discharge to the storm drain system.

7. At the direction of the city inspector, video inspection of storm drains will be conducted when significant leak has occurred causing sediment to discharge to the storm drain system. Hydro flushing of the system will be required to remove sediment created by water main leaks.
   7.1. Provide information requested by city inspector, to include but not limited to: date, time and duration of leak, how much water discharged to the storm drain system, quantity of storm drain system flushing collected, summary of other clean up measures and description of cause, if known, and corrective actions to prevent repeat of water main failure.

G. Cleanup

1. Cleanup shall occur at the end of each day, including vacuuming if necessary. All construction tools, equipment, trash, debris, spoils and materials shall be removed from the area or otherwise secured within 10 feet of the face of curb within the work zone in a manner that will not impede traffic.
2. Stock piling of materials and equipment within the public right of way outside of the work zone will not be allowed
3. Boring operations will require vacuum equipment to clean up mud and/or slurry.
   3.1. Storm water protection devices shall be utilized to prevent mud from entering the storm drains. Contractor responsible for maintaining storm water protection devices to prevent flooding.

G. Supervision

1. City of Seaside shall be provided a copy of daily reports, as requested by inspector.
2. Each crew shall have a responsible and competent foreman present during construction who shall exercise strict supervision over the crew.
3. Workers shall not use private property for any reason. Adequate water and toilet facilities shall be provided. Workers shall be courteous, considerate and conduct themselves professionally.
4. Workers shall wear shirts or tags that clearly identify their company's name.

H. Permit Duration & Working Hours

1. This permit is valid for 90 calendar days. All construction and pavement restoration shall be completed within 90 calendar days from the date the applicant provides notice in writing to the City.
   1.1. The City Engineer may extend the duration of the permit for weather delays or reasonable unforeseen conditions.
   1.2. Applicant shall submit in writing a request for permit extension a minimum of 14 days prior to expiration.
2. Working hours along General Jim Moore Boulevard are Monday through Friday, 9 AM to 7 PM during school year, 7 AM to 5 PM during summer or as approved in writing by the City Engineer.
3. Working hours along Lightfighter Drive are Monday through Friday, 7 AM to 5 PM or as approved in writing by the City Engineer.
4. City may perform inspections on backfill and paving and general road reconstruction work throughout the project.
5. Work may be suspended during significant regional events including:
   5.1. Major Tournaments and events held at Bayonet & Blackhorse golf course. Contractor is responsible for checking with golf course for event schedule.
6. No work may occur in the street on Saturday, Sunday or holidays or as approved in writing by the City Engineer.

Summary of Engineering Standards

City of Seaside: S-101, S-102, S-103, S-104, , S-600, S-601, S-802

SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C30 (CA)	Lane Closed
R4-8a	Keep Left
W20-1	Road Work Ahead
W20-5(R)	Right Lane Closed Ahead

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

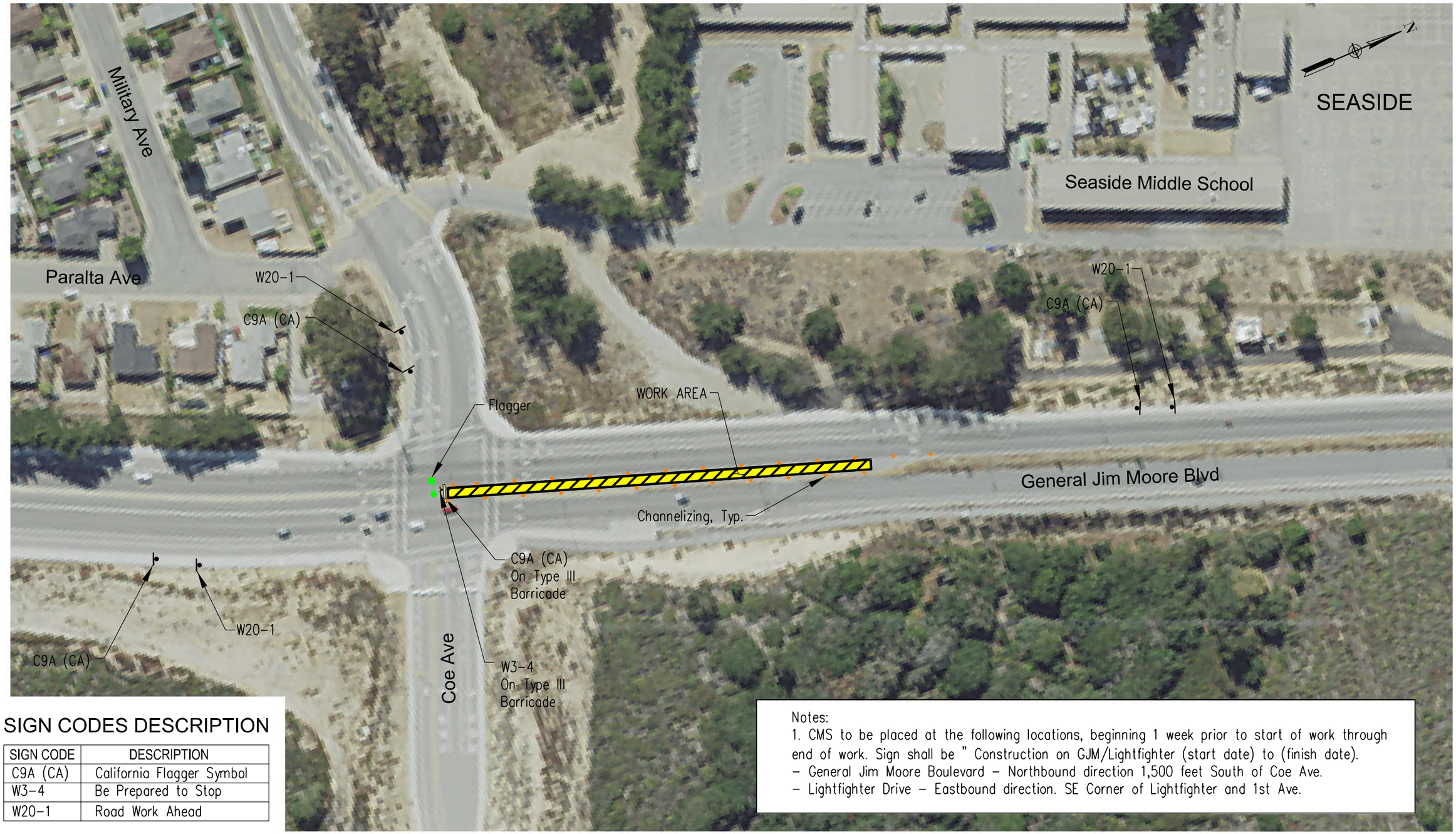
POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd TRAFFIC CONTROL PLAN	TCP 1
40 MPH	320'	350'	40'					

SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C9A (CA)	California Flagger Symbol
C30 (CA)	Lane Closed
R4-7a	Keep Right
W20-1	Road Work Ahead
W20-5(L)	Left Lane Closed Ahead

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd / Coe Ave TRAFFIC CONTROL PLAN	TCP 2
40 MPH	320'	350'	40'					

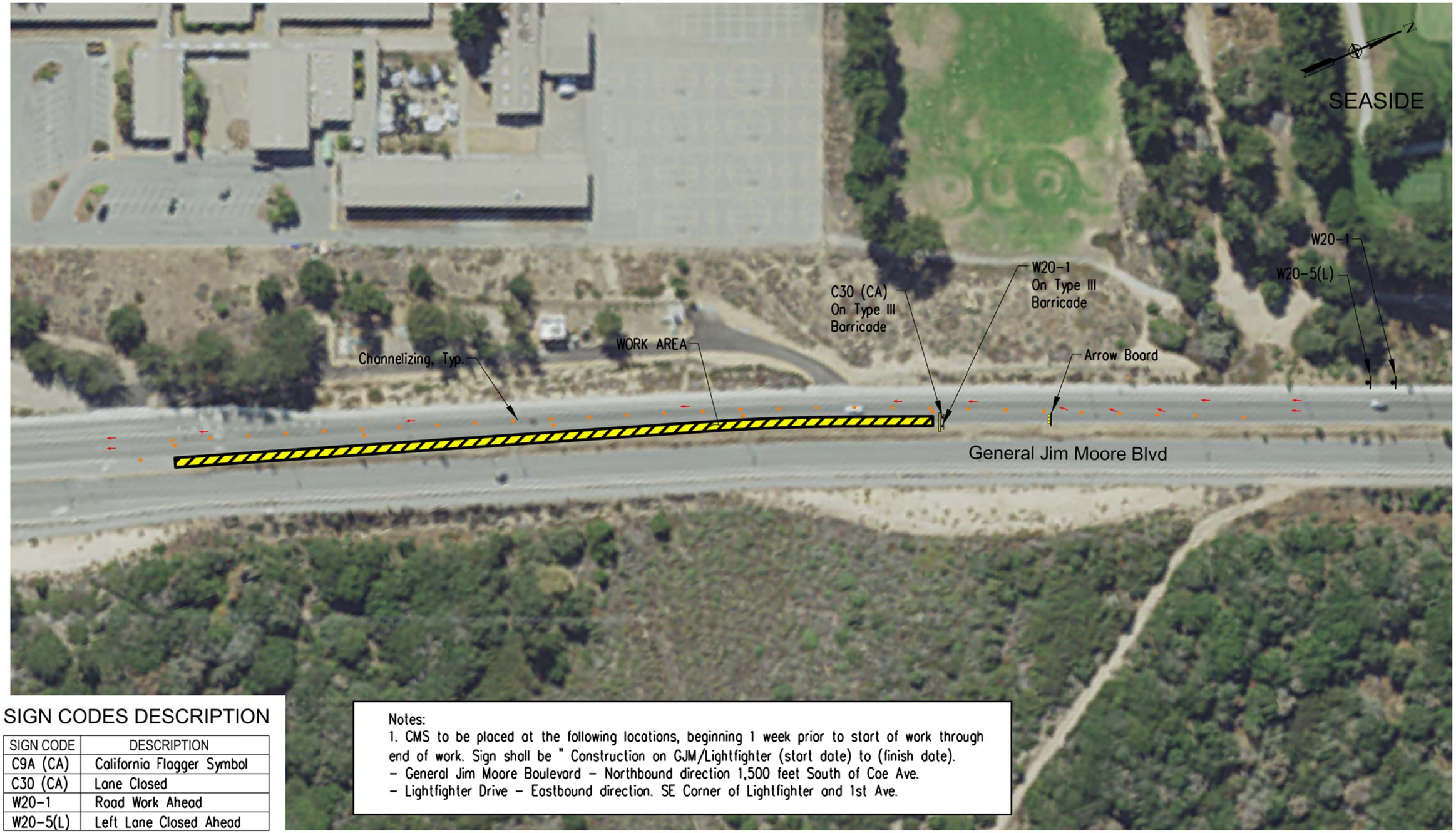


SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C9A (CA)	California Flagger Symbol
W3-4	Be Prepared to Stop
W20-1	Road Work Ahead

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd / Coe Ave TRAFFIC CONTROL PLAN	TCP 3
40 MPH	320'	350'	40'					



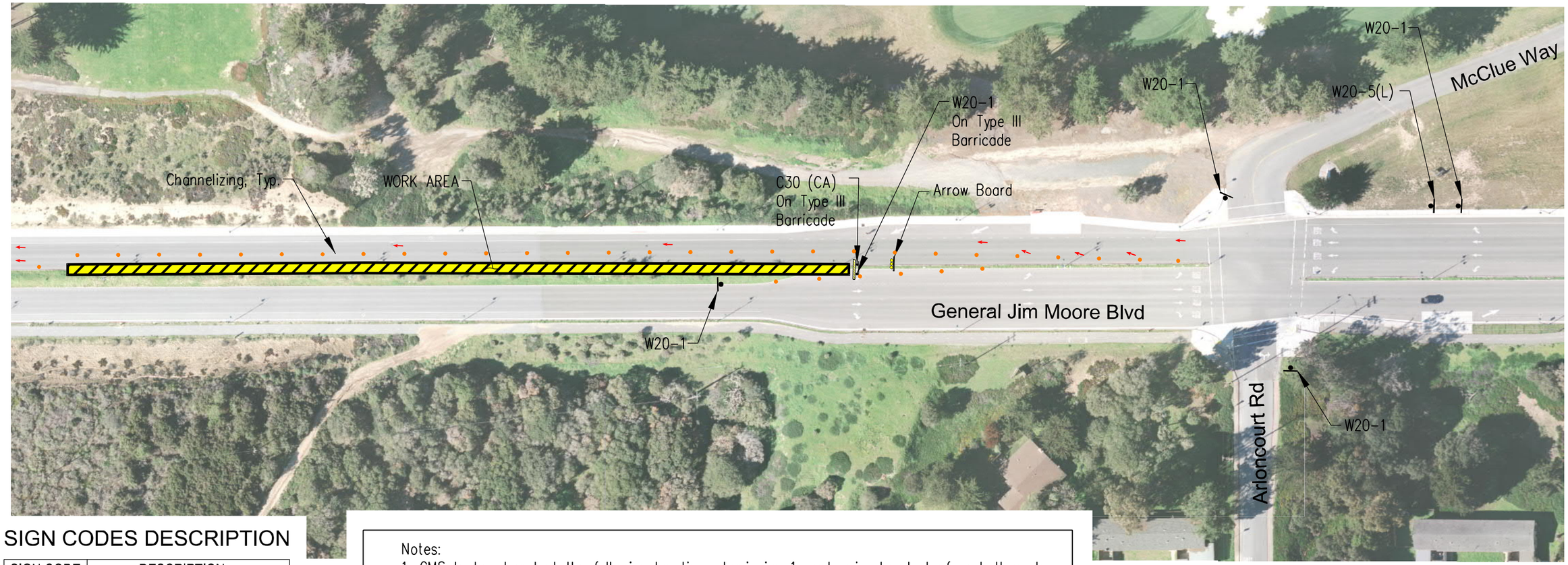
SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C9A (CA)	California Flagger Symbol
C30 (CA)	Lane Closed
W20-1	Road Work Ahead
W20-5(L)	Left Lane Closed Ahead

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd TRAFFIC CONTROL PLAN	TCP 4
40 MPH	320'	350'	40'					

SEASIDE



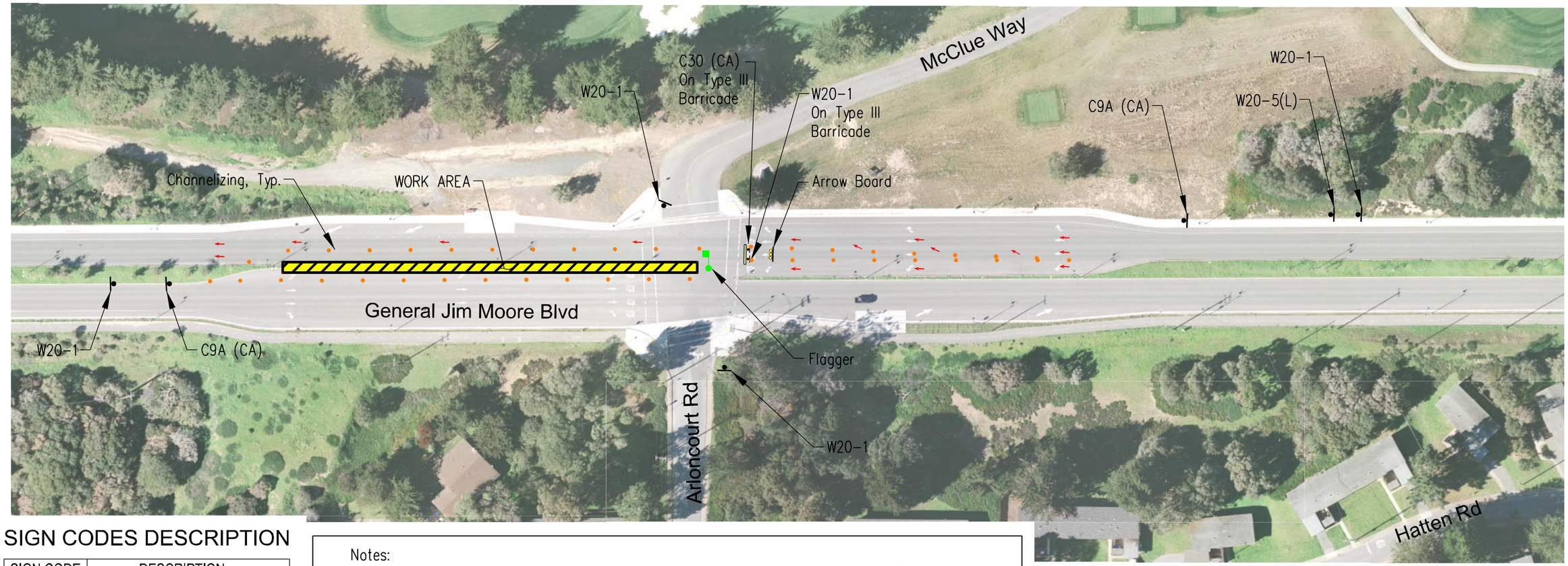
SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C30 (CA)	Lane Closed
W20-1	Road Work Ahead
W20-5(L)	Left Lane Closed Ahead

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd TRAFFIC CONTROL PLAN	TCP 5
40 MPH	320'	350'	40'					

SEASIDE



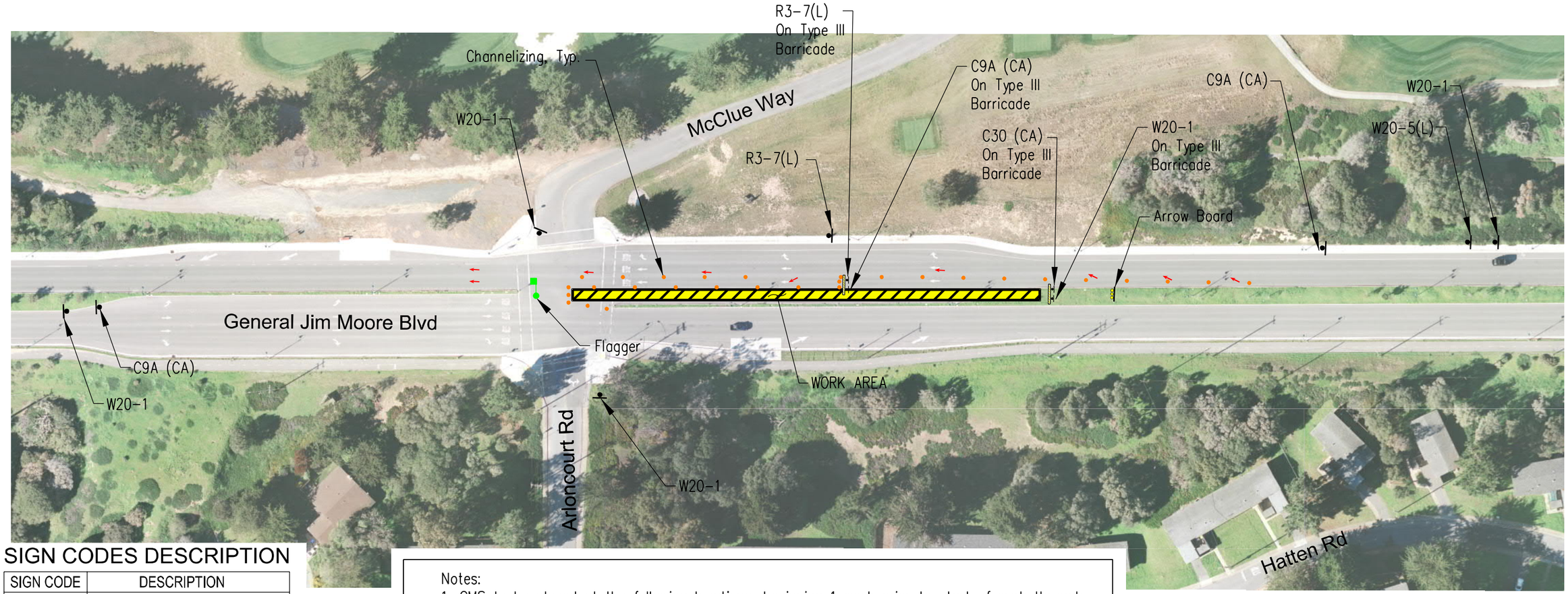
SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C30 (CA)	Lane Closed
C9A (CA)	California Flagger Symbol
W20-1	Road Work Ahead
W20-5(L)	Left Lane Closed Ahead

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd/ Arloncourt Rd/McClue Way TRAFFIC CONTROL PLAN	TCP 6
40 MPH	320'	350'	40'					

SEASIDE



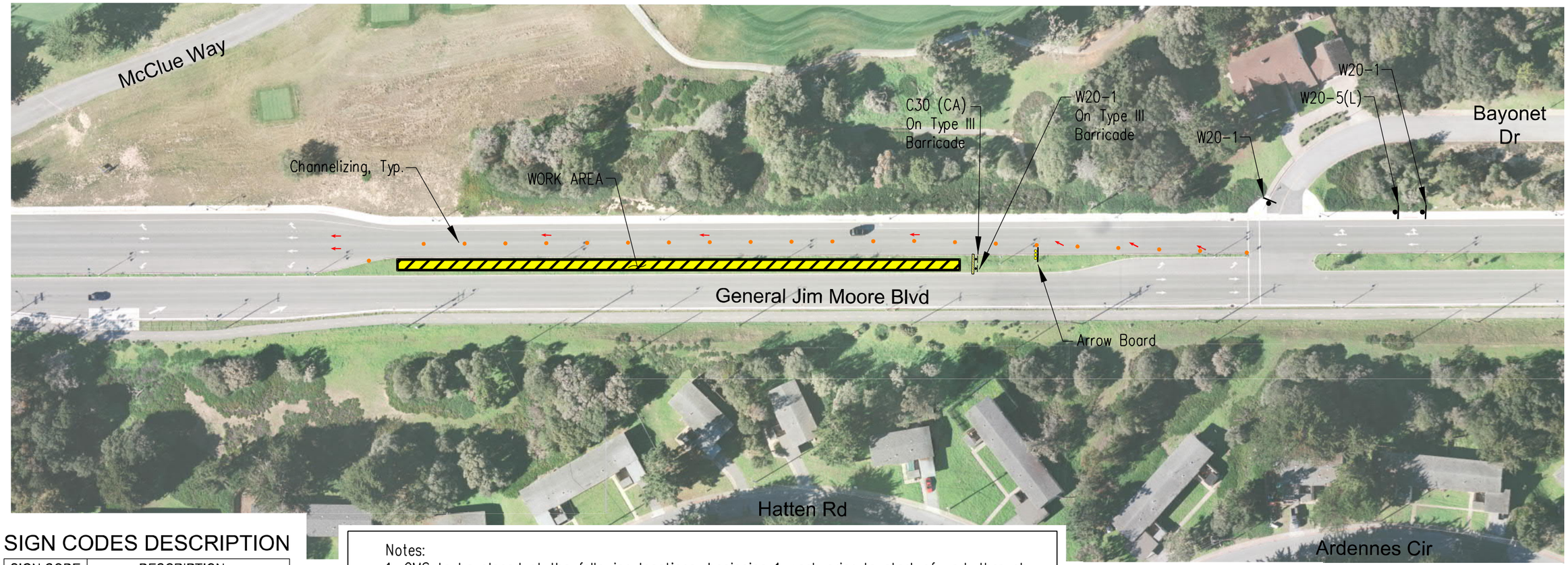
SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C30 (CA)	Lane Closed
C9A (CA)	California Flagger Symbol
R3-7(L)	Left Lane Must Turn Left
W20-1	Road Work Ahead
W20-5(L)	Left Lane Closed Ahead

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd/ Arloncourt Rd/McClue Way TRAFFIC CONTROL PLAN	TCP 7
40 MPH	320'	350'	40'					

SEASIDE



SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C30 (CA)	Lane Closed
W20-1	Road Work Ahead
W20-5(L)	Left Lane Closed Ahead

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd TRAFFIC CONTROL PLAN	TCP 8
40 MPH	320'	350'	40'					

SEASIDE

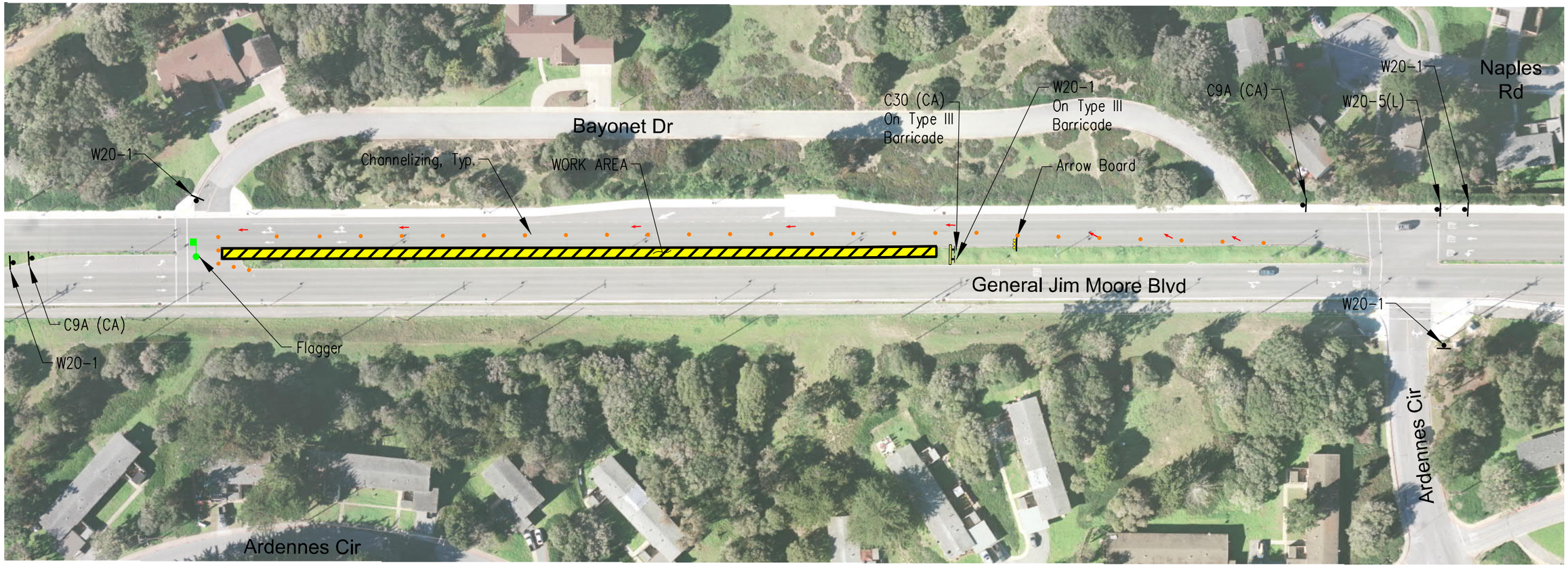
SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C9A (CA)	California Flagger Symbol
C30 (CA)	Lane Closed
W20-1	Road Work Ahead
W20-5(L)	Left Lane Closed Ahead

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd / Hilby Ave TRAFFIC CONTROL PLAN	TCP 9
40 MPH	320'	350'	40'					

SEASIDE



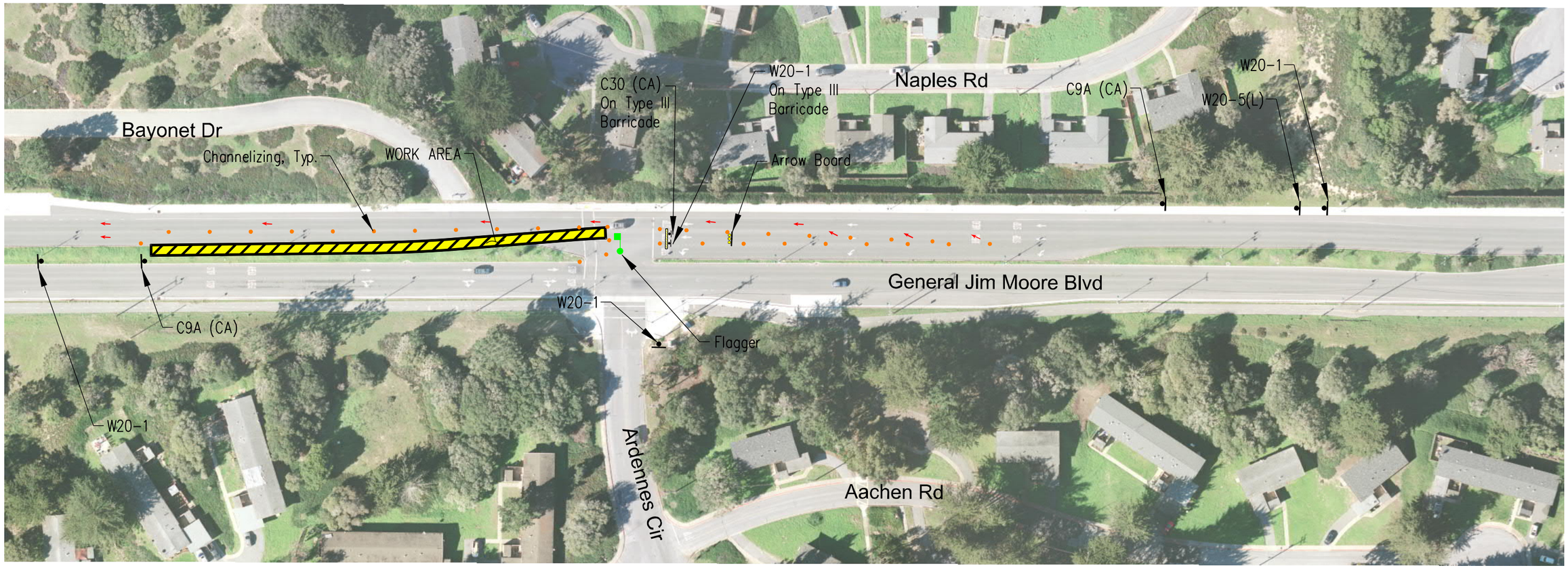
SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C9A (CA)	California Flagger Symbol
C30 (CA)	Lane Closed
W20-1	Road Work Ahead
W20-5(L)	Left Lane Closed Ahead

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd / Bayonet Dr TRAFFIC CONTROL PLAN	TCP 10
40 MPH	320'	350'	40'					

SEASIDE



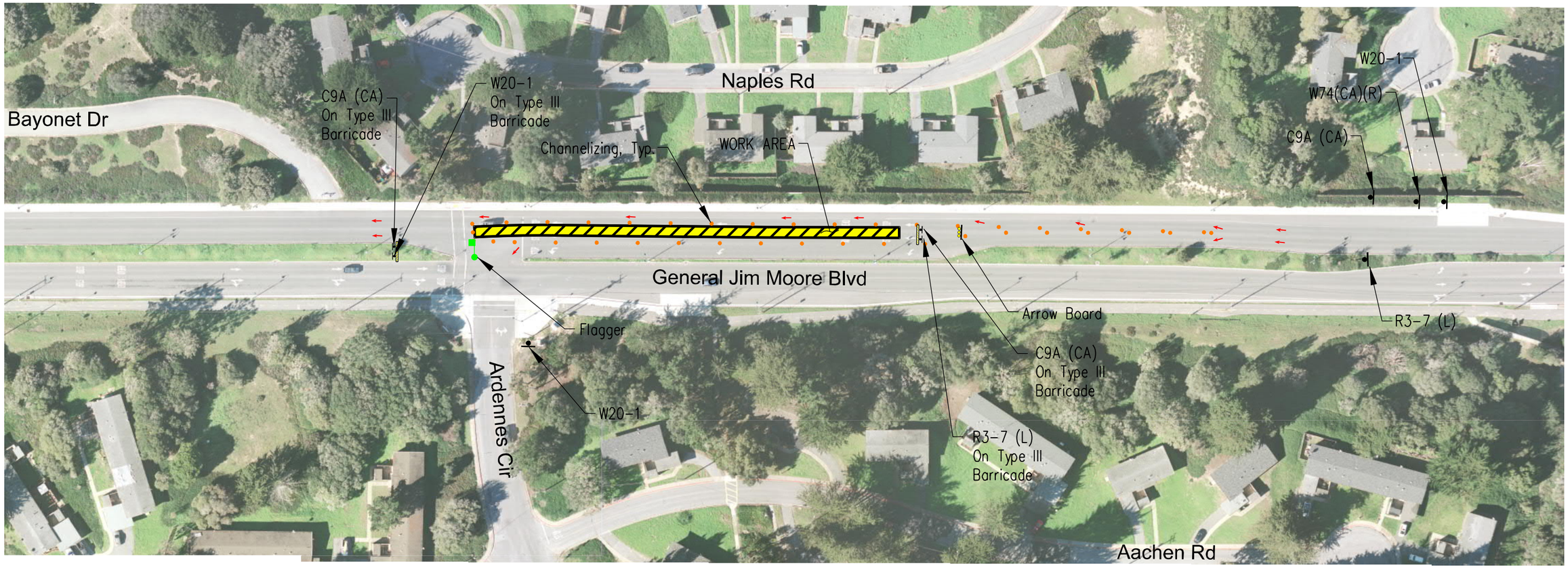
SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C9A (CA)	California Flagger Symbol
C30 (CA)	Lane Closed
W20-1	Road Work Ahead
W20-5(L)	Left Lane Closed Ahead

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd / Ardennes Cir TRAFFIC CONTROL PLAN	TCP 11
40 MPH	320'	350'	40'					

SEASIDE



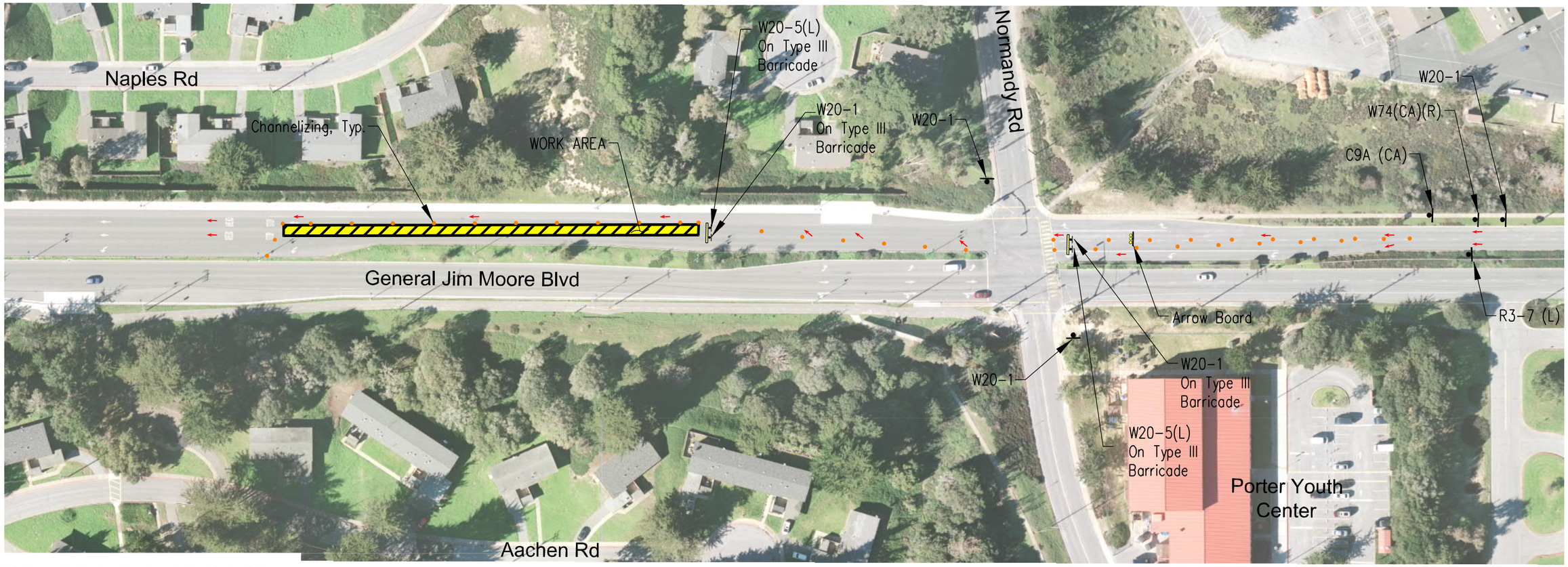
SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C9A (CA)	California Flagger Symbol
R3-7 (L)	Left Lane Must Turn Left
W20-1	Road Work Ahead
W74 (CA)(R)	Thru Traffic Merge Right

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd / Ardennes Cir / Normandy Rd TRAFFIC CONTROL PLAN	TCP 12
40 MPH	320'	350'	40'					

SEASIDE



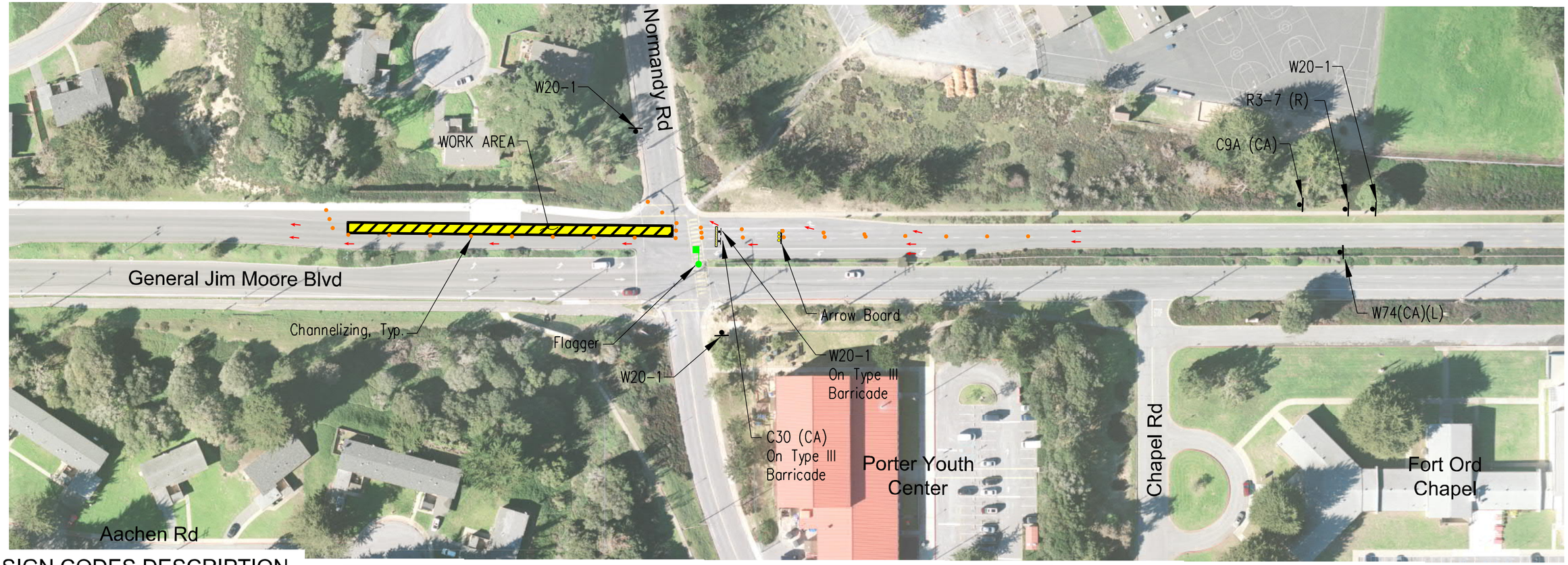
SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
R3-7 (L)	Left Lane Must Turn Left
W20-1	Road Work Ahead
W20-5(L)	Left Lane Closed Ahead
W74 (CA)(R)	Thru Traffic Merge Right

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM		General Jim Moore Blvd / Ardennes Cir / Normandy Rd TRAFFIC CONTROL PLAN	TCP 13
40 MPH	320'	350'	40'					

SEASIDE



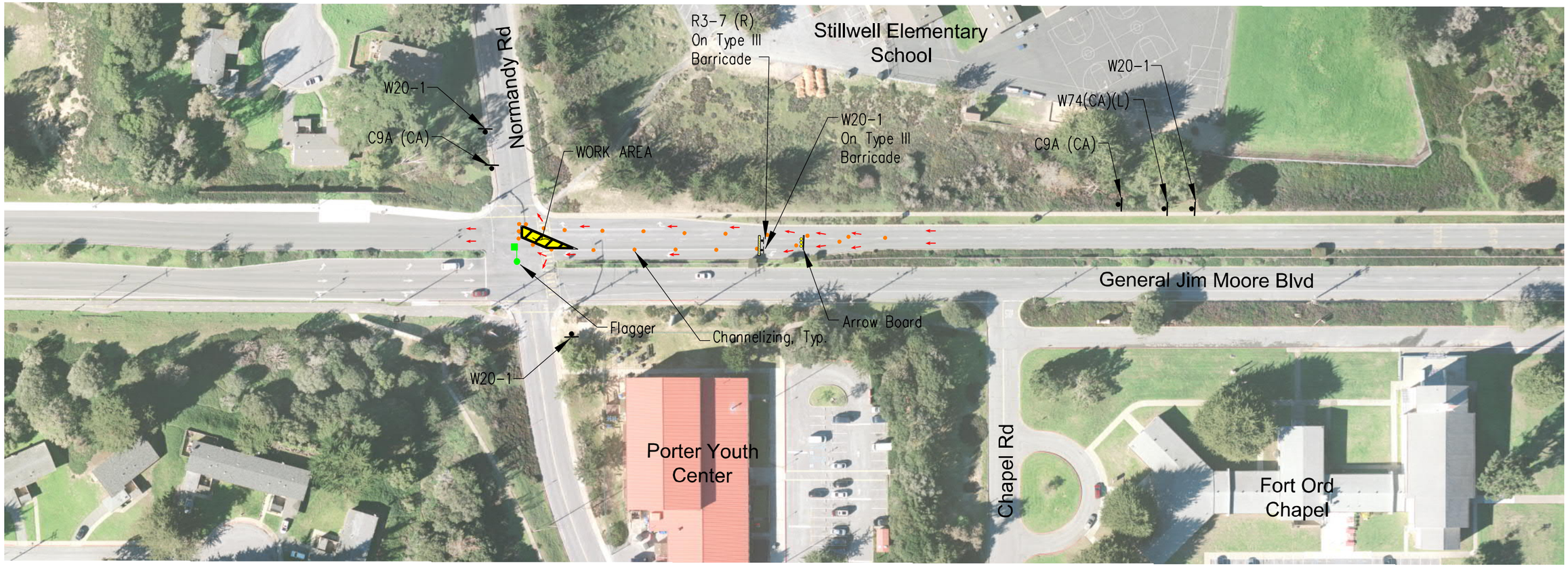
SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C30 (CA)	Lane Closed
C9A (CA)	California Flagger Symbol
R3-7 (R)	Right Lane Must Turn Right
W20-1	Road Work Ahead
W74 (CA)(L)	Thru Traffic Merge Left

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd / Ardennes Cir / Normandy Rd TRAFFIC CONTROL PLAN	TCP 14
40 MPH	320'	350'	40'					

SEASIDE



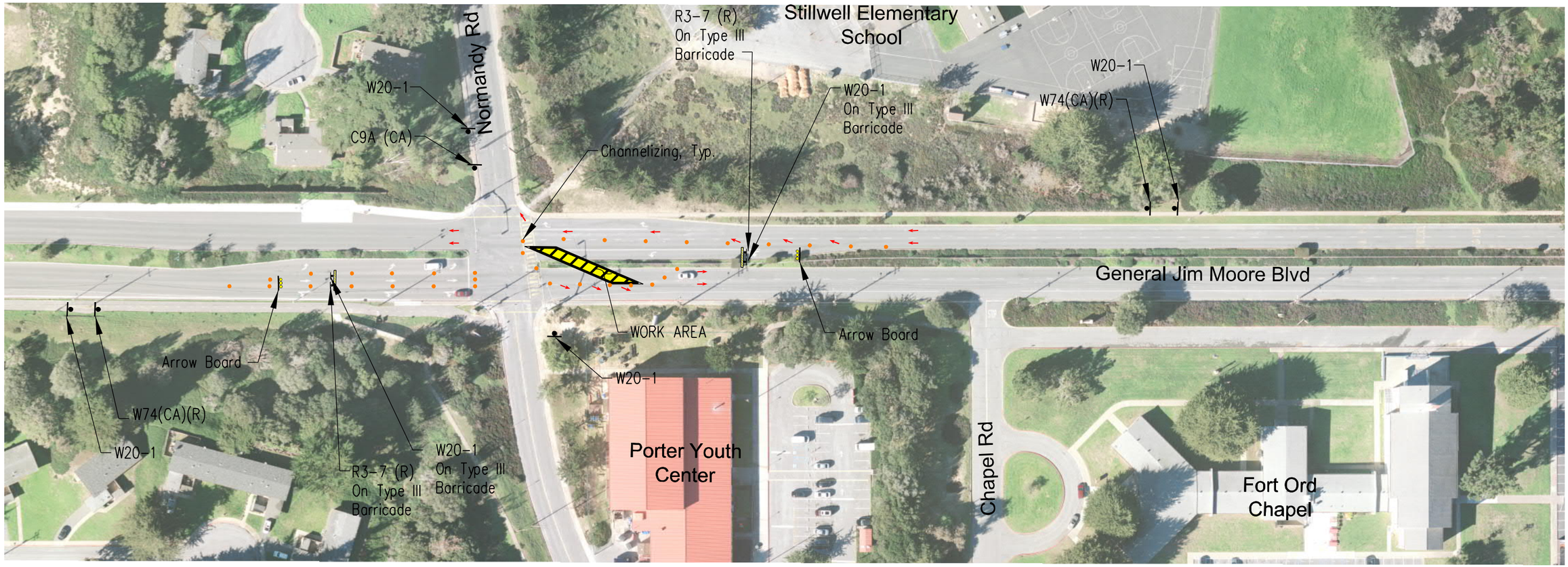
SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C9A (CA)	California Flagger Symbol
R3-7 (R)	Right Lane Must Turn Right
W20-1	Road Work Ahead
W20-5(L)	Left Lane Closed Ahead
W74 (CA)(L)	Thru Traffic Merge Left

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd / Normandy Rd TRAFFIC CONTROL PLAN	TCP 15
40 MPH	320'	350'	40'					

SEASIDE



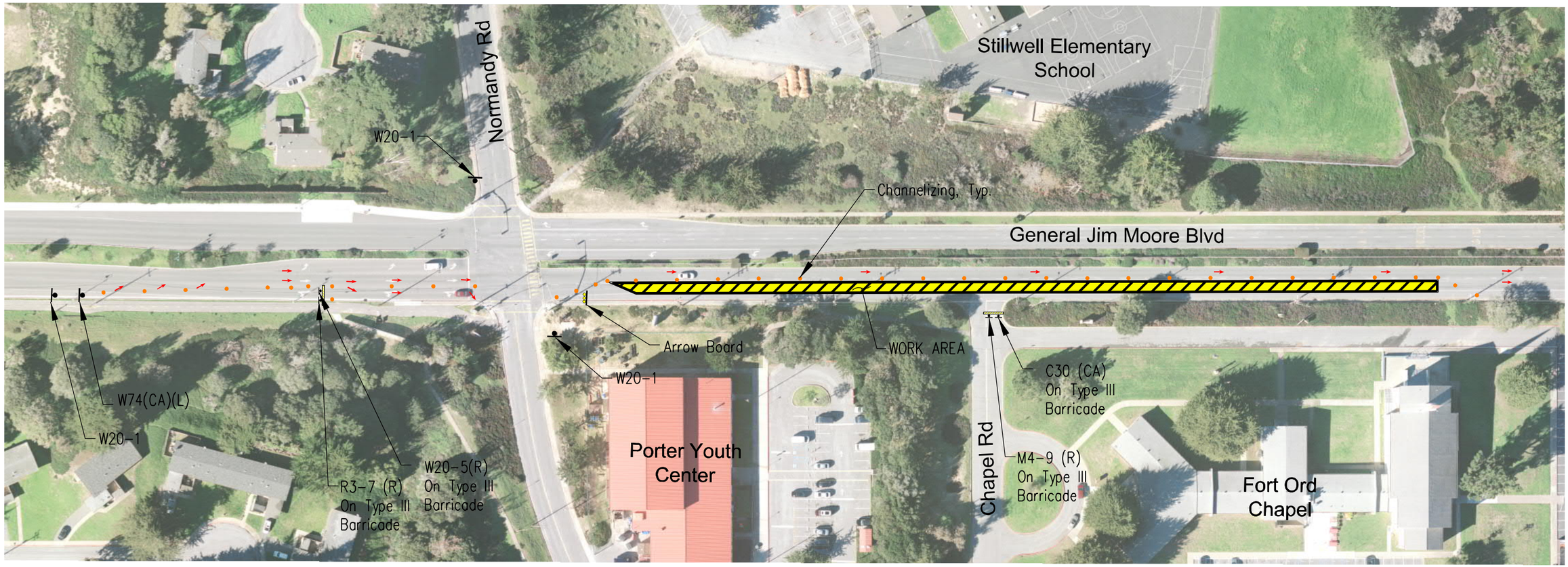
SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
R3-7 (L)	Left Lane Must Turn Left
R3-7 (R)	Right Lane Must Turn Right
W20-1	Road Work Ahead
W20-5(L)	Left Lane Closed Ahead
W74 (CA)(R)	Thru Traffic Merge Right

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd / Normandy Rd TRAFFIC CONTROL PLAN	TCP 16
40 MPH	320'	350'	40'					

SEASIDE



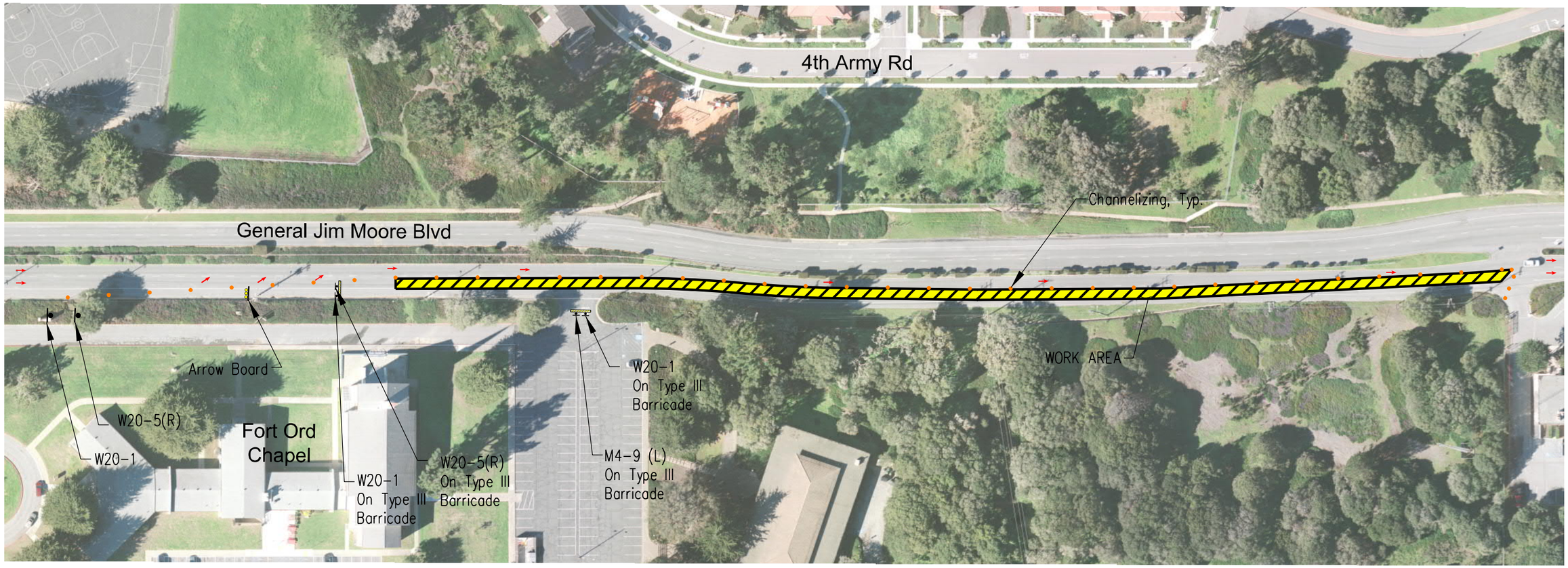
SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C30 (CA)	Lane Closed
M4-9 (R)	Detour Right Arrow
R3-7 (R)	Right Lane Must Turn Right
W20-1	Road Work Ahead
W20-5(R)	Right Lane Closed Ahead
W74 (CA)(L)	Thru Traffic Merge Left

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd / Normandy Rd TRAFFIC CONTROL PLAN	TCP 17
40 MPH	320'	350'	40'					

SEASIDE



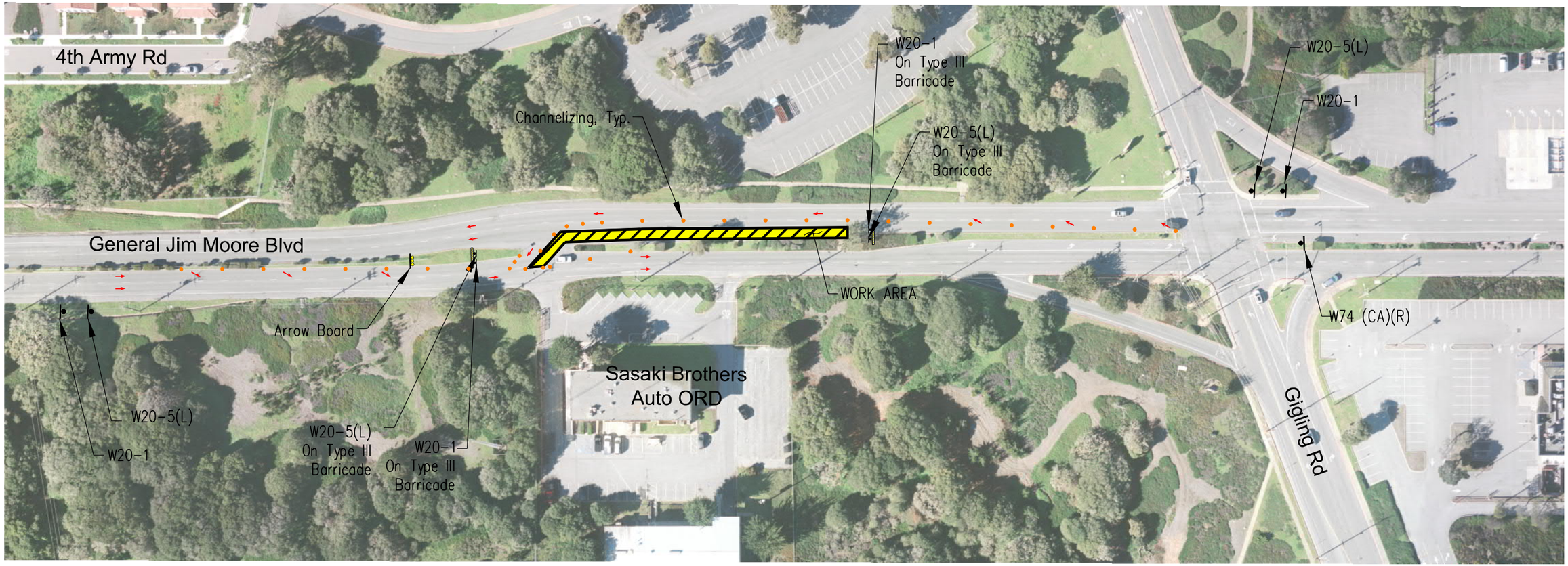
SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
M4-9 (L)	Detour Left Arrow
W20-1	Road Work Ahead
W20-5(R)	Right Lane Closed Ahead

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd TRAFFIC CONTROL PLAN	TCP 18
40 MPH	320'	350'	40'					

SEASIDE



SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
W20-1	Road Work Ahead
W20-5(L)	Left Lane Closed Ahead
W74 (CA)(R)	Thru Traffic Merge Right

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd / Gigling Rd TRAFFIC CONTROL PLAN	TCP 19
40 MPH	320'	350'	40'					

SEASIDE

SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C9A (CA)	California Flagger Symbol
C30 (CA)	Lane Closed
W20-1	Road Work Ahead
W20-5	Lane Closed Ahead

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
– General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
– Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd / Gigling Rd TRAFFIC CONTROL PLAN	TCP 20
40 MPH	320'	350'	40'					

SEASIDE

SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C9A (CA)	California Flagger Symbol
C30 (CA)	Lane Closed
W20-1	Road Work Ahead
W20-5(L)	Left Lane Closed Ahead

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd / Gigling Rd TRAFFIC CONTROL PLAN	TCP 21
40 MPH	320'	350'	40'					

SEASIDE

SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C9A (CA)	California Flagger Symbol
C30 (CA)	Lane Closed
W20-1	Road Work Ahead
W20-5	Lane Closed Ahead

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

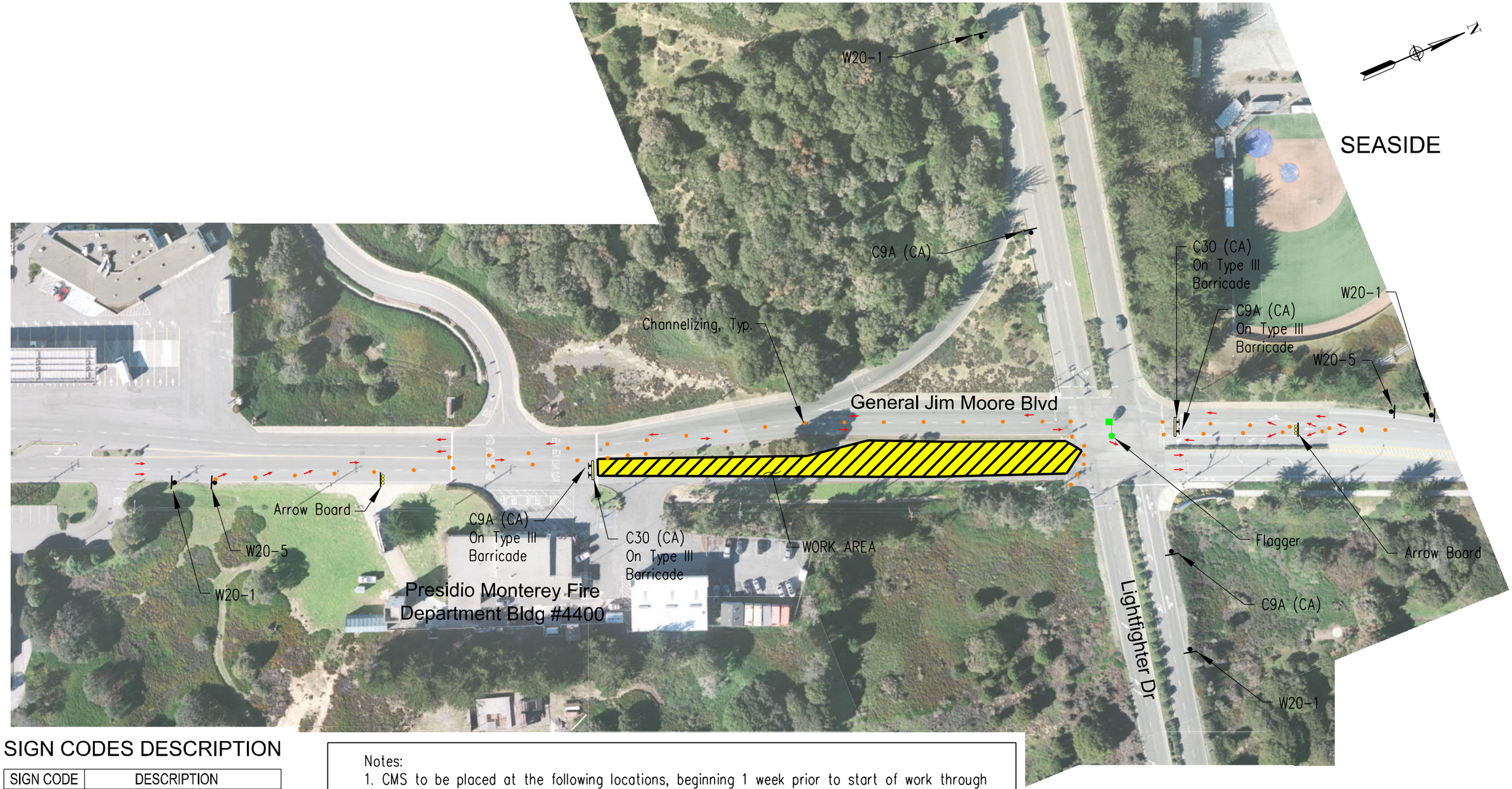
POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd / Gigling Rd TRAFFIC CONTROL PLAN	TCP 22
40 MPH	320'	350'	40'					

SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C30 (CA)	Lane Closed
W20-1	Road Work Ahead
W20-5	Lane Closed Ahead

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd / Lightfighter Dr TRAFFIC CONTROL PLAN	TCP 23
40 MPH	320'	350'	40'					



SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C9A (CA)	California Flagger Symbol
C30 (CA)	Lane Closed
W20-1	Road Work Ahead
W20-5	Lane Closed Ahead

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

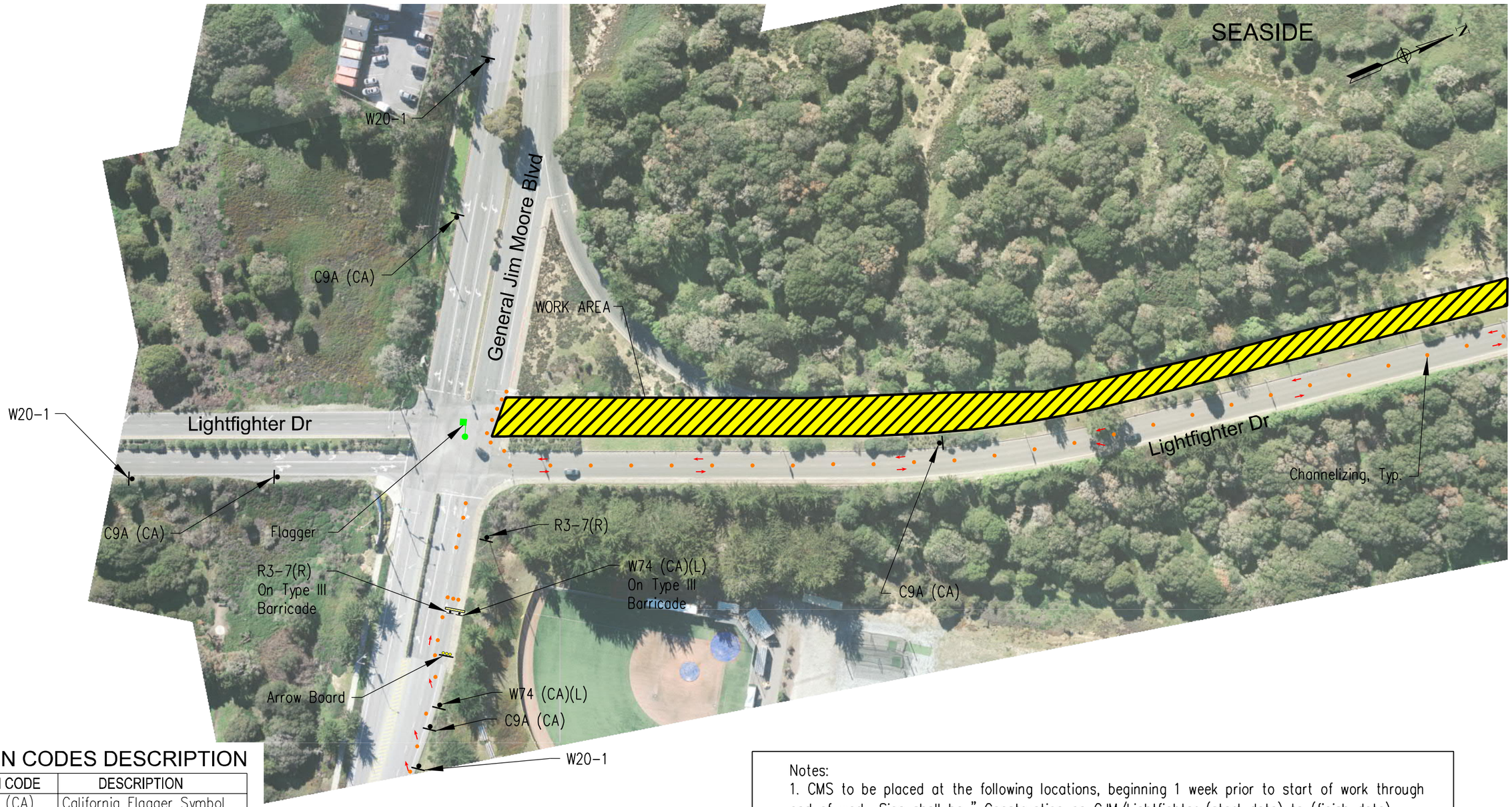
POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd / Lightfighter Dr TRAFFIC CONTROL PLAN	TCP 24
40 MPH	320'	350'	40'					

SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C9A (CA)	California Flagger Symbol
C30 (CA)	Lane Closed
W20-1	Road Work Ahead
W20-5	Lane Closed Ahead

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd / Lightfighter Dr TRAFFIC CONTROL PLAN	TCP 25
40 MPH	320'	350'	40'					



SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C9A (CA)	California Flagger Symbol
R3-7(R)	Right Lane Must Turn Right
W20-1	Road Work Ahead
W74 (CA)(L)	Thru Traffic Merge Left

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

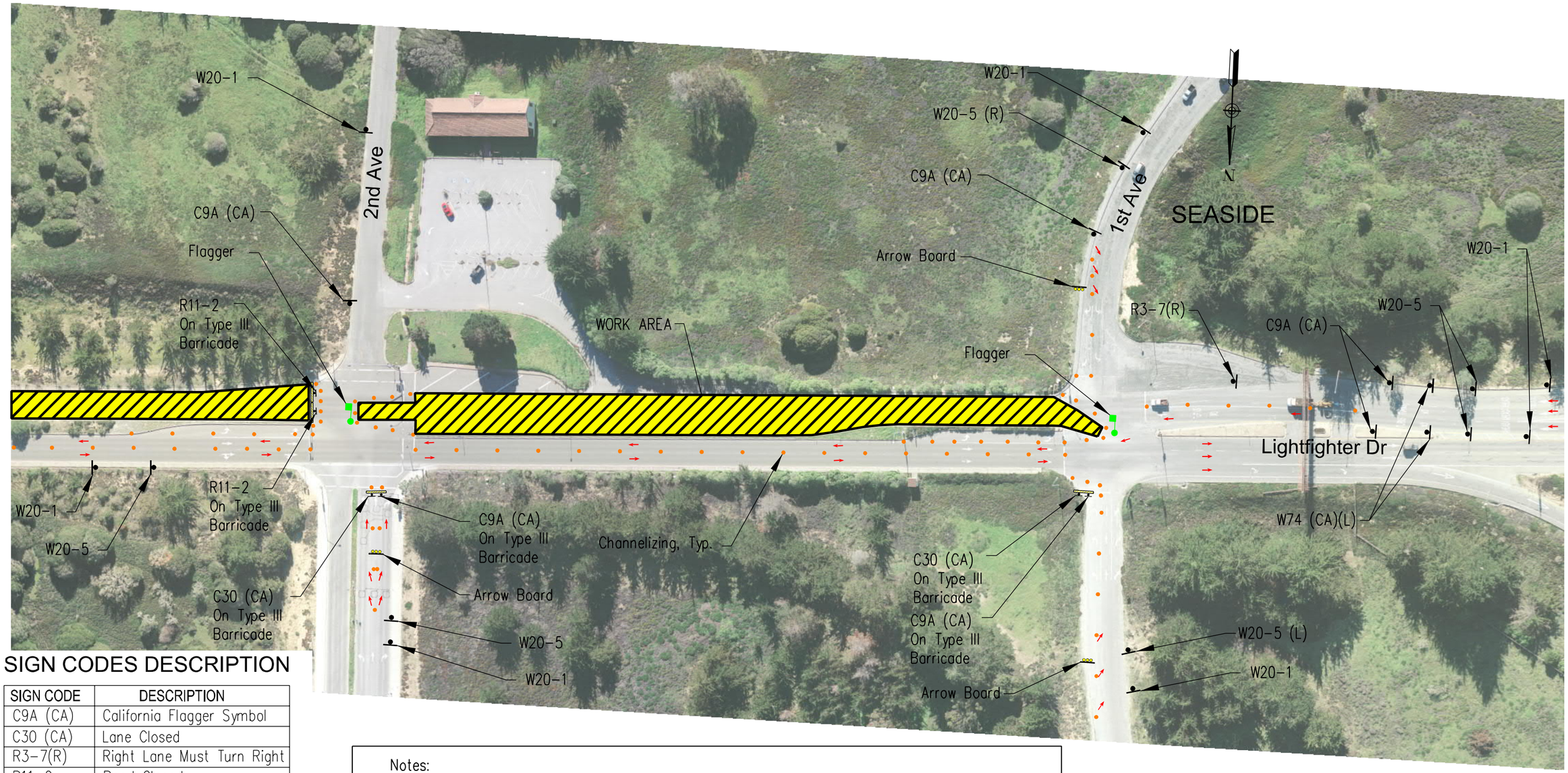
POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	General Jim Moore Blvd / Lightfighter Dr TRAFFIC CONTROL PLAN	TCP 26
40 MPH	320'	350'	40'					

SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C9A (CA)	California Flagger Symbol
C30 (CA)	Lane Closed
R3-7(R)	Right Lane Must Turn Right
W9-3	Center Lane Closed Ahead
W20-1	Road Work Ahead
W74 (CA)(L)	Thru Traffic Merge Left

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	Lightfighter Dr / 2nd Ave TRAFFIC CONTROL PLAN	TCP 27
40 MPH	320'	350'	40'					



SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C9A (CA)	California Flagger Symbol
C30 (CA)	Lane Closed
R3-7(R)	Right Lane Must Turn Right
R11-2	Road Closed
W20-1	Road Work Ahead
W20-5	Lane Closed Ahead
W20-5 (L)	Left Lane Closed Ahead
W20-5 (R)	Right Lane Closed Ahead
W74 (CA)(L)	Thru Traffic Merge Left

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	Lightfighter Dr / 2nd Ave TRAFFIC CONTROL PLAN	TCP 28
40 MPH	320'	350'	40'					

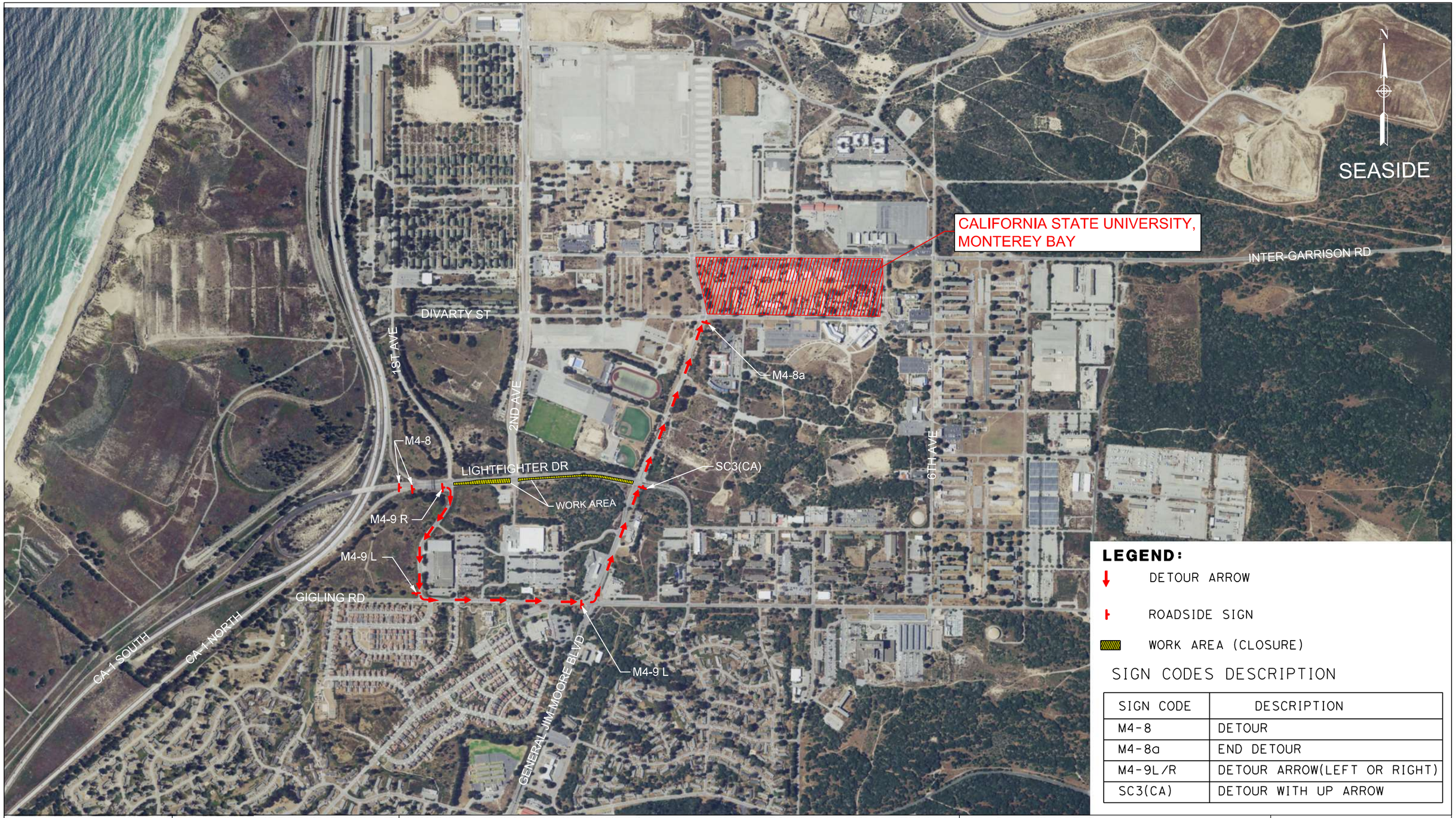
SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
C9A (CA)	California Flagger Symbol
C30 (CA)	Lane Closed
W20-1	Road Work Ahead
W20-5	Lane Closed Ahead

Notes:
1. CMS to be placed at the following locations, beginning 1 week prior to start of work through end of work. Sign shall be " Construction on GJM/Lightfighter (start date) to (finish date).
- General Jim Moore Boulevard – Northbound direction 1,500 feet South of Coe Ave.
- Lightfighter Drive – Eastbound direction. SE Corner of Lightfighter and 1st Ave.

POSTED SPEED LIMIT:	TAPER LENGTH:	SIGN SPACING:	CONE SPACING:		AECOM	CALIFORNIA AMERICAN WATER	Lightfighter Drive/ 1st Avenue TRAFFIC CONTROL PLAN	TCP 29
40 MPH	320'	350'	40'					

AECOM	CALIFORNIA AMERICAN WATER		General Jim Moore Blvd/ Lightfighter Dr OVERVIEW MAP	OVM 1



LEGEND:

- DETOUR ARROW
- ROADSIDE SIGN
- WORK AREA (CLOSURE)

SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
M4-8	DETOUR
M4-8a	END DETOUR
M4-9L/R	DETOUR ARROW(LEFT OR RIGHT)
SC3(CA)	DETOUR WITH UP ARROW

AECOM

CALIFORNIA AMERICAN WATER

General Jim Moore Blvd/
Lightfighter Dr
DETOUR PLAN

DTP 1

LEGEND:

- DETOUR ARROW
- ROADSIDE SIGN
- WORK AREA (CLOSURE)

SIGN CODES DESCRIPTION

SIGN CODE	DESCRIPTION
M4-8	DETOUR
M4-8a	END DETOUR
M4-9L/R	DETOUR ARROW(LEFT OR RIGHT)
SC3(CA)	DETOUR WITH UP ARROW

AECOM

CALIFORNIA AMERICAN WATER

General Jim Moore Blvd/ Lightfighter Dr DETOUR PLAN

DTP 2

USA Utility Clearance Tickets

Nick Hansen

From: notification@usan.org
Sent: Monday, July 1, 2019 8:54 AM
To: Nick Hansen
Subject: [EXTERNAL] USA North 811 Confirmation for Ticket W912600487-03W

EMLCFM 00700W USAN 07/01/19 08:53:31 W912600487-03W REMK NORM POLY LREQ

Ticket: W912600487 Rev: 03W Created: 07/01/19 08:53 User: MHS Chan: CSR

Work Start: 07/03/19 17:01 Legal Start: 07/03/19 17:01 Expires: 07/29/19 23:59
Response required: Y Priority: 2

Excavator Information
Company: GARNEY PACIFIC
Co Addr: 324 E 11TH ST STE E2
City : TRACY State: CA Zip: 95376
Created By: NICK HANSEN Language: ENGLISH
Office Phone: 214-535-1486 SMS/Cell:
Office Email: nhansen@garney.com

Site Contact: CALLER
Site Phone: 214-535-1486 Site SMS/Cell:
Site Email:

Excavation Area
State: CA County: MONTEREY Place: SEASIDE
Zip: 93955
Location: Address/Street: GENERAL JIM MOORE BLVD
: X/ST1: ARLONCOURT RD
: X/ST2: NORMANDY RD
:
: (N & S-BOUND LANES) ON BOTH SIDES OF OF GENERAL JIM MOORE BLVD FROM
: ARLONCOURT RD GO NE TO NORMANDY RD

Delineated Method: WHITE PAINT
Work Type: INSTALL WATER LINE
Work For : CAL AMERICAN WATER
Permit: Job/Work order:
1 Year: N Boring: N Street/Sidewalk: Y Vacuum: Y Explosives: N

Lat/Long
Center Generated (NAD83): 36.638004/-121.810272 36.637401/-121.809046
: 36.627742/-121.815323 36.627138/-121.814097
Excavator Provided:

Map link:
https://newtin.usan.org/newtinweb/map_tkt.nap?TRG=4DGr6s8m6q8p4nW-H

Comments:

RENEW TICKET WORK CONTINUING PER NICK HANSEN--05/28/2019 09:29:55 AM
RENEW TICKET WORK CONTINUING PER NICK HANSEN--06/19/2019 09:05:59 AM
REQUEST RE-MARKS FROM CAMWTR, CEBCON, COMMTY, CTYMAR, CTYSEA, MARWTR,
PACBEL, PGESAL, TERDEX--WORK CONTINUING RE-MARK ENTIRE AREA PER NICK
HANSEN--07/01/2019 08:52:41 AM

Members:

CAMWTR CALIFORNIA AMERICAN WATER	JUSTIN RAMIREZ	831-236-7499
	For emergencies	888-237-1333
CEBCON CEBRIDGE CONNECTIONS	Name not available	831-883-5420
COMMTY COMCAST-MONTEREY	DREW COOPER	951-377-0689
	CAL XOC ANYONE	888-824-8219
CTYMAR CITY OF MARINA	Name not available	831-212-5035
	For emergencies	831-384-7575
CTYSEA CITY SEASIDE	DAVE FORTUNE	831-899-6829
	For emergencies	831-760-2336
MARWTR MARINA COAST WTR DIST	JOE CORREA	831-883-5909
	MCWD MAINLINE	831-384-6131
PACBEL PACIFIC BELL	Name not available	510-645-2929
	For emergencies	510-645-2929
PGESAL PGE DISTR SALINAS	EMERGENCY	800-743-5000
TERDEX TERRADEX INC.	Name not available	650-227-3254
	EMERGENCY	650-413-7553

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Nick Hansen

From: notification@usan.org
Sent: Monday, July 1, 2019 8:55 AM
To: Nick Hansen
Subject: [EXTERNAL] USA North 811 Confirmation for Ticket W912600485-03W

EMLCFM 00710W USAN 07/01/19 08:54:36 W912600485-03W REMK NORM POLY LREQ

Ticket: W912600485 Rev: 03W Created: 07/01/19 08:54 User: MHS Chan: CSR

Work Start: 07/03/19 17:01 Legal Start: 07/03/19 17:01 Expires: 07/29/19 23:59
Response required: Y Priority: 2

Excavator Information
Company: GARNEY PACIFIC
Co Addr: 324 E 11TH ST STE E2
City : TRACY State: CA Zip: 95376
Created By: NICK HANSEN Language: ENGLISH
Office Phone: 214-535-1486 SMS/Cell:
Office Email: nhansen@garney.com

Site Contact: CALLER
Site Phone: 214-535-1486 Site SMS/Cell:
Site Email:

Excavation Area
State: CA County: MONTEREY Place: SEASIDE
Zip: 93955
Location: Address/Street: GENERAL JIM MOORE BLVD
: X/ST1: COE AVE
:
: (N & S-BOUND LANES) ON BOTH SIDES OF OF GENERAL JIM MOORE BLVD FROM
: 1000' SW OF COE AVE GO NE TO ARLONCOURT RD

Delineated Method: WHITE PAINT
Work Type: INSTALL WATER LINE
Work For : CAL AMERICAN WATER
Permit: Job/Work order:
1 Year: N Boring: N Street/Sidewalk: Y Vacuum: Y Explosives: N

Lat/Long
Center Generated (NAD83): 36.628810/-121.814848 36.628223/-121.813547
: 36.618697/-121.819417 36.618109/-121.818116
Excavator Provided:

Map link:
https://newtin.usan.org/newtinweb/map_tkt.nap?TRG=CDXaKeNbMaPWJYl-0

Comments:

RENEW TICKET WORK CONTINUING PER NICK HANSEN--05/28/2019 09:28:42 AM
RENEW TICKET WORK CONTINUING PER NICK HANSEN--06/19/2019 09:04:52 AM
REQUEST RE-MARKS FROM CAMWTR, CEBCON, COMMTY, CTYMAR, CTYSEA, MARWTR,
PACBEL, PGESAL, TERDEX--WORK CONTINUING RE-MARK ENTIRE AREA PER NICK
HANSEN--07/01/2019 08:54:04 AM

Members:

CAMWTR CALIFORNIA AMERICAN WATER	JUSTIN RAMIREZ	831-236-7499
	For emergencies	888-237-1333
CEBCON CEBRIDGE CONNECTIONS	Name not available	831-883-5420
COMMTY COMCAST-MONTEREY	DREW COOPER	951-377-0689
	CAL XOC ANYONE	888-824-8219
CTYMAR CITY OF MARINA	Name not available	831-212-5035
	For emergencies	831-384-7575
CTYSEA CITY SEASIDE	DAVE FORTUNE	831-899-6829
	For emergencies	831-760-2336
MARWTR MARINA COAST WTR DIST	JOE CORREA	831-883-5909
	MCWD MAINLINE	831-384-6131
PACBEL PACIFIC BELL	Name not available	510-645-2929
	For emergencies	510-645-2929
PGESAL PGE DISTR SALINAS	EMERGENCY	800-743-5000
TERDEX TERRADEX INC.	Name not available	650-227-3254
	EMERGENCY	650-413-7553

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Nick Hansen

From: notification@usan.org
Sent: Monday, July 1, 2019 8:55 AM
To: Nick Hansen
Subject: [EXTERNAL] USA North 811 Confirmation for Ticket X912601590-03W

EMLCFM 00712W USAN 07/01/19 08:55:14 X912601590-03W REMK NORM POLY LREQ

Ticket: X912601590 Rev: 03W Created: 07/01/19 08:54 User: MHS Chan: CSR

Work Start: 07/03/19 17:01 Legal Start: 07/03/19 17:01 Expires: 07/29/19 23:59
Response required: Y Priority: 2

Excavator Information
Company: GARNEY PACIFIC
Co Addr: 324 E. 11TH ST STE E2
City : TRACY State: CA Zip: 95376
Created By: NICK HANSEN Language: ENGLISH
Office Phone: 214-535-1486 SMS/Cell:
Office Email: nhansen@garney.com

Site Contact: CALLER
Site Phone: 214-535-1486 Site SMS/Cell:
Site Email:

Excavation Area
State: CA County: MONTEREY Place: SEASIDE
Zip: 93955
Location: Address/Street: LIGHT FIGHTER DR
: X/ST1: GENERAL JIM MOORE BLVD
: X/ST2: 1ST AVE
:
: BOTH SIDES OF LIGHT FIGHTER DR FROM GENERAL JIM MOORE BLVD TO A POINT
: 2000' W OF 1ST AVE

Delineated Method: WHITE PAINT
Work Type: INSTALL WATER LINE
Work For : CAL AMERICAN WATER
Permit: PENDING Job/Work order:
1 Year: N Boring: N Street/Sidewalk: Y Vacuum: Y Explosives: N

Lat/Long
Center Generated (NAD83): 36.647642/-121.819383 36.649055/-121.804126
: 36.645820/-121.819214 36.647234/-121.803957
Excavator Provided:

Map link:
https://newtin.usan.org/newtinweb/map_tkt.nap?TRG=88XaOaRTRWUMTOv-s

Comments:

RENEW TICKET WORK CONTINUING PER NICK HANSEN--05/28/2019 09:30:29 AM
RENEW TICKET WORK CONTINUING PER NICK HANSEN--06/19/2019 09:06:30 AM
REQUEST RE-MARKS FROM AHTENV, CEBCON, COMMTY, CSUMBA, CTYMAR, MARWTR, PACBEL, PGESAL, TERDEX--WORK CONTINUING RE-MARK ENTIRE AREA PER NICK HANSEN--07/01/2019 08:54:49 AM

Members:

AHTENV AHTNA ENVIRONMENTAL INC.	Name not available	Not available
	For emergencies	831-224-3133
CEBCON CEBRIDGE CONNECTIONS	Name not available	831-883-5420
COMMTY COMCAST-MONTEREY	DREW COOPER	951-377-0689
	CAL XOC ANYONE	888-824-8219
CSUMBA CALIFORNIA STATE UNIVERSITY M	JUSTIN CLAUSEN	831-582-3601
CTYMAR CITY OF MARINA	Name not available	831-212-5035
	For emergencies	831-384-7575
MARWTR MARINA COAST WTR DIST	JOE CORREA	831-883-5909
	MCWD MAINLINE	831-384-6131
PACBEL PACIFIC BELL	Name not available	510-645-2929
	For emergencies	510-645-2929
PGESAL PGE DISTR SALINAS	EMERGENCY	800-743-5000
TERDEX TERRADEX INC.	Name not available	650-227-3254
	EMERGENCY	650-413-7553

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Nick Hansen

From: notification@usan.org
Sent: Monday, July 1, 2019 8:56 AM
To: Nick Hansen
Subject: [EXTERNAL] USA North 811 Confirmation for Ticket W912600489-03W

EMLCFM 00720W USAN 07/01/19 08:55:58 W912600489-03W REMK NORM POLY LREQ

Ticket: W912600489 Rev: 03W Created: 07/01/19 08:55 User: MHS Chan: CSR

Work Start: 07/03/19 17:01 Legal Start: 07/03/19 17:01 Expires: 07/29/19 23:59
Response required: Y Priority: 2

Excavator Information
Company: GARNEY PACIFIC
Co Addr: 324 E 11TH ST STE E2
City : TRACY State: CA Zip: 95376
Created By: NICK HANSEN Language: ENGLISH
Office Phone: 214-535-1486 SMS/Cell:
Office Email: nhansen@garney.com

Site Contact: CALLER
Site Phone: 214-535-1486 Site SMS/Cell:
Site Email:

Excavation Area
State: CA County: MONTEREY Place: SEASIDE
Zip: 93955
Location: Address/Street: GENERAL JIM MOORE BLVD
: X/ST1: NORMANDY RD
: X/ST2: LIGHTFIGHTER DR
:
: (N & S-BOUND LANES) ON BOTH SIDES OF OF GENERAL JIM MOORE BLVD FROM
: NORMANDY RD GO NE TO LIGHTFIGHTER DR

Delineated Method: WHITE PAINT
Work Type: INSTALL WATER LINE
Work For : CAL AMERICAN WATER
Permit: Job/Work order:
1 Year: N Boring: N Street/Sidewalk: Y Vacuum: Y Explosives: N

Lat/Long
Center Generated (NAD83): 36.648592/-121.805095 36.648020/-121.803907
: 36.636906/-121.810715 36.636335/-121.809527
Excavator Provided:

Map link:
https://newtin.usan.org/newtinweb/map_tkt.nap?TRG=CEWXRbUQTXWPUJ2-h

Comments:

RENEW TICKET WORK CONTINUING PER NICK HANSEN--05/28/2019 09:29:17 AM
RENEW TICKET WORK CONTINUING PER NICK HANSEN--06/19/2019 09:05:25 AM
REQUEST RE-MARKS FROM CAMWTR, CEBCON, COMMTY, CSUMBA, CTYMAR, MARWTR,
PACBEL, PGESAL, TERDEX--WORK CONTINUING RE-MARK ENTIRE AREA PER NICK
HANSEN--07/01/2019 08:55:30 AM

Members:

CAMWTR CALIFORNIA AMERICAN WATER	JUSTIN RAMIREZ	831-236-7499
	For emergencies	888-237-1333
CEBCON CEBRIDGE CONNECTIONS	Name not available	831-883-5420
COMMTY COMCAST-MONTEREY	DREW COOPER	951-377-0689
	CAL XOC ANYONE	888-824-8219
CSUMBA CALIFORNIA STATE UNIVERSITY M	JUSTIN CLAUSEN	831-582-3601
CTYMAR CITY OF MARINA	Name not available	831-212-5035
	For emergencies	831-384-7575
MARWTR MARINA COAST WTR DIST	JOE CORREA	831-883-5909
	MCWD MAINLINE	831-384-6131
PACBEL PACIFIC BELL	Name not available	510-645-2929
	For emergencies	510-645-2929
PGESAL PGE DISTR SALINAS	EMERGENCY	800-743-5000
TERDEX TERRADEX INC.	Name not available	650-227-3254
	EMERGENCY	650-413-7553

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Notification of Construction

Dunn, Michelle

From: Nick Hansen <nhansen@garney.com>
Sent: Tuesday, July 30, 2019 9:22 AM
To: Tam, Lawrence
Cc: Tim.OHalloran@Amwater.com; Chamberlain, John; Kevin Downs; Sean Summers; Greg Lutes
Subject: FW: [EXTERNAL] Re: Notification of Construction

Lawrence,

Please see the email below from the City of Seaside Fire Department in regards to MMRP requirement 4.13-1e to notify the local fire departments.

Thanks,

Nick Hansen
Project Engineer
GARNEY CONSTRUCTION *Advancing Water*
PH: 816.741.4600 Cell: 214.535.1486 FAX: 209-229-1870
ADDRESS: 324 E. 11th St, Suite E2, Tracy, CA, 95376 GARNEY.COM

From: Paul Blaha <PBlaha@ci.seaside.ca.us>
Sent: Saturday, July 27, 2019 8:16 AM
To: Nick Hansen <nhansen@garney.com>
Cc: Greg Lutes <gregl@garney.com>; Kevin Downs <kdowns@garney.com>; Sean Summers <ssummers@garney.com>
Subject: [EXTERNAL] Re: Notification of Construction

Hello,

Thank you for the information, I notify the rest of our personnel.

Paul

>>> Nick Hansen <nhansen@garney.com> 7/26/2019 3:18 PM >>>
Pete,

Per our conversation we will begin construction of a 36" diameter water pipeline in the City of Seaside in the right of way on General Jim Moore Blvd. and Lightfighter drive, both streets contain gas lines. Construction is scheduled to start in September and be completed in the area in December. Please reply to confirm receipt of this email and let me know if you have any questions.

Thanks,

Nick Hansen
Project Engineer
GARNEY CONSTRUCTION *Advancing Water*
PH: 816.741.4600 Cell: 214.535.1486 FAX: 209-229-1870
ADDRESS: 324 E. 11th St, Suite E2, Tracy, CA, 95376 GARNEY.COM

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FORA Construction Support Plans

Dunn, Michelle

From: Stan Cook <Stan@fora.org>
Sent: Tuesday, August 20, 2019 11:16 AM
To: Christopher Cook
Cc: Laura Vidaurri; Handley, Noel; Spill, Chris; Tam, Lawrence; Chamberlain, John
Subject: RE: Extended ROE Request: MPWSP Pipeline segment in GJMB
Attachments: 2019-08-20 Attachment - ROE Extension CalAM.pdf

Importance: High

Mr. Chris Cook,

The Fort Ord Reuse Authority (FORA) extends existing July 13, 2018 FORA/California American Water Company (CalAm) Right of Entry (ROE) for Monterey Peninsula Water Supply Project and 30-inch Pipeline Upgrade (Monterey Pipeline) CalAm to include the area designated in the attached map.

Please print and attach this email and map to the July 13, 2018 FORA/CalAm ROE. All other terms and conditions of the existing ROE and associated Unexploded Ordnance (UXO) Construction Support Plan (CSP) are still in full effect and valid.

Please contact me if you have any questions.

I have copied Mr. John Chamberlain who has been coordinating this ROE extension on CalAm's behalf.

Stan Cook
FORA ESCA Senior Program Manager

From: Chamberlain, John <john.chamberlain@aecom.com>
Sent: Tuesday, August 20, 2019 10:07 AM
To: Stan Cook <Stan@fora.org>
Cc: Laura Vidaurri <Laura@fora.org>; Handley, Noel <Noel.Handley@arcadis.com>; Spill, Chris <Chris.Spill@arcadis.com>; Tam, Lawrence <lawrence.tam@aecom.com>
Subject: RE: Extended ROE Request: MPWSP Pipeline segment in GJMB

Stan: Is there a good time to arrange a call with you, Laura and any others this afternoon to review files and extending the ROE we worked on for pipeline construction in GJMB? THANKS, John

---

From: Stan Cook [mailto:Stan@fora.org]
Sent: Friday, August 16, 2019 8:09 AM
To: Chamberlain, John
Cc: Laura Vidaurri; Handley, Noel; Spill, Chris; Tam, Lawrence
Subject: RE: Extended ROE Request: MPWSP Pipeline segment in GJMB

John,

Let's revisit this Tuesday August 20th when Laura and I are back in the office. Hopefully in an hour or so we can get a ROE Amendment knocked out with Laura's help.

Stan

From: Chamberlain, John <john.chamberlain@aecom.com>
Sent: Friday, August 16, 2019 8:05 AM
To: Stan Cook <Stan@fora.org>
Cc: Laura Vidaurri <Laura@fora.org>; Handley, Noel <Noel.Handley@arcadis.com>; Spill, Chris <Chris.Spill@arcadis.com>; Tam, Lawrence <lawrence.tam@aecom.com>
Subject: Extended ROE Request: MPWSP Pipeline segment in GJMB

Thanks, Stan. Yes, the location of work on the FORA portion of GJMB is as originally anticipated and presented in the Construction Support Plan (and its attachments). That portion of pipeline route is shown in the image pasted below, taken from the CSP.

The project footprint to install a single Transmission Main pipeline with portions of FORA land within GJMB is shown in the attached. Note, there is a proposed temporary discharge pipeline shown that is not being installed at this time.

We can obtain a new Proof of Insurance naming FORA and its agents and connect with Arcadis. The construction contractor is again, Garney Construction, which is familiar with the process and may be using personnel that took prior trainings (and can do so again, if needed).

Please advise if you need anything else for completion of an email or letter extending existing ROE coverage for work proposed for the phase of work, which starts Sept 16 and is estimated to end December 16, 2019. The work at FOR A would occur within a relatively short window within that overall construction time frame.

Regards, John Chamberlain, AECOM (831) 419-4272 cell

From: Stan Cook [mailto:Stan@fora.org]
Sent: Friday, August 16, 2019 7:28 AM
To: Chamberlain, John
Cc: Laura Vidaurri; Handley, Noel; Spill, Chris
Subject: RE: Signed ROE Copy Request: MPWSP Pipeline segment in GJMB
Importance: High

John,

Please send me a Map of the upcoming GJMB Pipeline work area.

Provided the pipeline work is what was originally anticipated in the Eucalyptus/Coe area, I think CalAm's needs may be accomplished by:

- FORA (me) providing an email extending the existing ROE to cover new work dates and adding the map of the work to amend the ROE Attachment "A"
- CalAm providing a new Proof of Insurance with FORA and its agents as Additionally Insured
- CalAm reconnecting with ARCADIS to schedule UXO Construction Support services per the approved Construction Support Plan.
- CalAm's Contractors completing the mandatory UXO Awareness Training

I have copied ARCADIS staff so they are aware that this project is planned to start in the near future.

Stan

From: Chamberlain, John <john.chamberlain@aecom.com>
Sent: Thursday, August 15, 2019 4:46 PM

To: Laura Vidaurri <Laura@fora.org>; Stan Cook <Stan@fora.org>
Subject: RE: Signed ROE Copy Request: MPWSP Pipeline segment in GJMB

Hi Again: I found a signed copy of the July 13 ROE letter mentioned below. I do have the entire package, but am pasting the first pages with Exhibit A that crosses out the portion of the project we're seeking to start next month.

I know we covered this 'cross out' portion in our original applications, submittal of plans and in agency letters. I suspect its a ROE letter from earlier (2017). Let me know if you're able to find it before me. I realize you're both away until Tuesday of next week.

Thanks again, John Chamberlain, AECOM (408) 961-8441; (831) 419-4272 cell

---

From: Chamberlain, John
Sent: Thursday, August 15, 2019 4:28 PM
To: Laura Vidaurri; Stan Cook
Subject: Signed ROE Copy Request: MPWSP Pipeline segment in GJMB

Stan (and Laura):

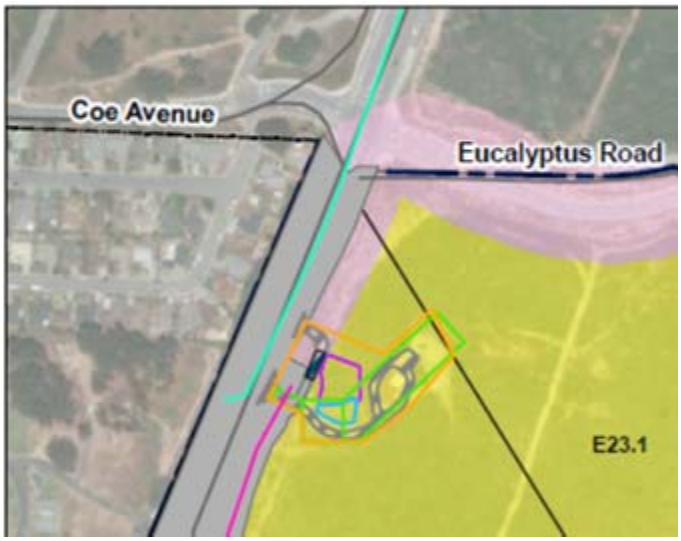
Thanks for discussing my need to relocate the signed ROE for pipeline installation work in GJMB today, specifically at the location shown in the image below.

What I don't seem to have a signed ROE letter to CalAm that pertains to the attached Construction Support Plan (from which the image below was taken). While the attached draft ROE letter may be the same (depending on the content of its Exhibit A), this may have been prepared specifically for the very short connection completed to the Monterey Pipeline near Hilby/GJMB.

I do have the attached Construction Support Plan that was provided to me and Maureen by Noel H on June 27, 2018, along with its Grading and Soils Mgmt Plan (App A), and the signed agency letters (App F). Noel didn't provide Apps B – E (which may not be necessary).

Stan, as you suggested, I'll ask Maureen and check with CalAm. But, I'm not certain Maureen would have a signed ROE letter directed to CalAm. In any event, My goal is to demonstrate to the Lead Agency that we have this ROE to begin work on portions of this pipeline starting Sept 16. Let me know if you are able to find any records.

Thanks, JOHN C



From: Laura Vidaurri [mailto:Laura@fora.org]
Sent: Friday, July 13, 2018 1:31 PM
To: Osby, Stephanie
Cc: Stan Cook
Subject: Emailing Dropbox link: CalAm ROE final package with Stan's signature only

Good afternoon Stephanie…

Please see below for a Dropbox link to the final partially executed ROE package…

https://www.dropbox.com/s/xzblb7qr1qixsdi/2018-07-13%20ROE%20CalAm_Final%20with%20all%20attachmts_Stan%20sig.doc.pdf?dl=0

Let me know if there's anything else I can do to be of assistance…

Have a wonderful weekend…

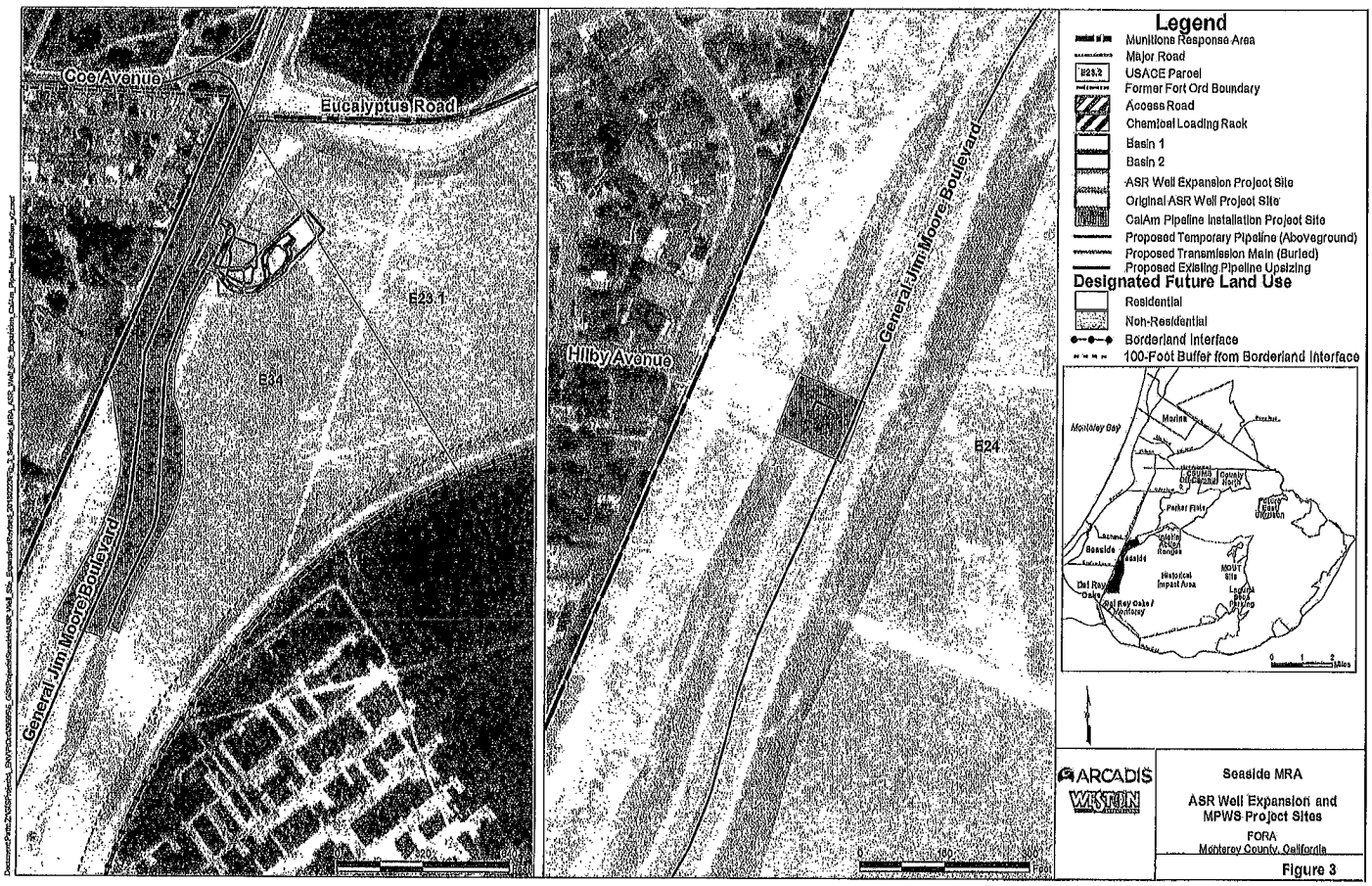
LAURA VIDAURRI
ESCA PROGRAM COORDINATOR
(831) 883-3672 (o)
(831) 883-3675 (f)
laura@fora.org

OUTREACH → REMEDIATION → DOCUMENTATION → CLOSURE → STEWARDSHIP

ATTACHMENT:

AREA IN R.O.E. EXTENSION E-MAIL DATED 8/20/19

8/20/19



On-Call Construction Support Plan

Aquifer Storage and Recovery Well Site Expansion and

Monterey Peninsula Water Supply Projects

June 18, 2018

Prepared for:

Fort Ord Reuse Authority
920 2nd Avenue, Suite A
Marina, CA 93933

Monterey Peninsula Water Management District
5 Harris Court, Building G
Monterey, CA 93940

California-American Water
511 Forest Lodge Road, Suite 100
Pacific Grove, CA 93950

Prepared by:

Arcadis, Inc. / Weston Solutions, Inc.

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1. INTRODUCTION

This On-Call Construction Support Plan (CSP) has been prepared to support the Aquifer Storage and Recovery Well Site Expansion Project (ASR Expansion Project).

- The ASR Expansion Project is being conducted by the Monterey Peninsula Water Management District (MPWMD) on Fort Ord Reuse Authority (FORA) Environmental Services Cooperative Agreement (ESCA) property identified as the Seaside Munitions Response Area (MRA; Parcels E34 and E23.1). The Seaside MRA is shown in Figure 1.
- The ASR Expansion Project is located in the City of Seaside jurisdictional boundaries and subject to excavation permit requirements as identified in City of Seaside Municipal Code Chapter 15.34 Digging and Excavation on the Former Fort Ord Ordinance (i.e., the digging and excavation ordinance).

This CSP identifies the construction support requirements and activities for applicable intrusive activities conducted within the expanded ASR Well Site boundary in accordance with the digging and excavation ordinance, while FORA owns the corresponding ESCA property.

For efficiency, this CSP also includes the proposed alignment for the below-grade Monterey Peninsula Water Supply Project (MPWSP) transmission mains supplying the ASR Well Site within the adjacent General Jim Moore Boulevard (Parcel E34) and upgrades to below-grade pipelines at the intersection of General Jim Moore Boulevard and Hilby Avenue (Parcel E24) being installed by the California-American Water Company (CalAm).

The project sites occupy land that is part of the former Fort Ord Army Installation and was historically used for military training. Because of the former military use at the project site, munitions response actions were completed to remove Department of Defense (DoD) military munitions, many of which were determined upon evaluation by qualified personnel to be Munitions and Explosives of Concern (MEC). Even with completion of munitions response actions, there is potential for munitions to be encountered.

The probability of encountering MEC on the project sites is considered low; therefore, on-call construction support is appropriate for this construction project (Section 2). Under certain circumstances, unexploded ordnance (UXO)-qualified personnel may use anomaly avoidance techniques to avoid subsurface anomalies during specific intrusive activities (e.g., fence post or well installation), if appropriate (Section 3.2).

The basis for the low probability determination was a review of the Final Seaside MRA Technical Information Papers (ESCA RP Team 2008 and 2011), Final Seaside MRA Residential Protocol Implementation (RPI) Technical Report (ESCA RP Team 2017a), Final Seaside MRA Supplemental RPI Technical Report (ESCA RP Team 2017c) and the Final Group 1 Remedial Investigation/Feasibility Study (RI/FS; ESCA RP Team 2017b).

The federal, state and local government agencies (i.e., U.S. Department of the Army [Army], U.S. Environmental Protection Agency [EPA], and California Department of Toxic Substances Control [DTSC]) and other interested parties involved with this CSP are summarized below:

- Army – Ensures FORA compliance with the ESCA; provides review and comment on the CSP
- EPA – Provides regulatory review and comment on the CSP
- DTSC – Provides regulatory review and comment on the CSP
- FORA (as property owner) – Ensures MPWMD and CalAm are in compliance with the FORA right-of-entry agreement and the City of Seaside digging and excavation ordinance requirements; and provides the UXO-support contractor on behalf of MPWMD and Cal Am to support preparation and submittal of the CSP, and associated reporting, to regulatory agencies and the Army for review and comment
- FORA (as party to the ESCA and Administrative Order on Consent [AOC]) – Review reports of munitions, including MEC, encounters (recoveries) during action addressed by this CSP to determine whether the probability determination should be revised, or additional requirements should be imposed to ensure safety and help ensure the probability of encountering MEC will remain low prior to allowing construction activities to resume
- City of Seaside – Enforces the digging and excavation ordinance
- MPWMD and CalAm – Comply with the digging and excavation ordinance on behalf of FORA in accordance with the FORA right-of-entry agreement
- Project Construction Contractors – Comply with this CSP on behalf of MPWMD and CalAm in support of the intrusive activities

This plan is limited to on-call construction support and anomaly avoidance during intrusive activities to be conducted in the northwestern portion of the Seaside MRA (Figure 2). In addition, this plan describes the military munitions recognition and safety training program to be provided to construction workers conducting intrusive activities, the procedures for conducting construction support, and the procedures for initiating a response if a munition or suspect munition is encountered. The construction support requirements that will be implemented include:

- Military munitions recognition and safety training – to ensure that workers involved in intrusive activities are informed about the possibility of encountering munitions and the actions to be taken should they encounter, or suspect they have encountered, a munition. Such actions include (a) not approaching, disturbing, touching or moving it; (b) stopping intrusive activities in the immediate and adjacent areas; and (c) reporting the suspect munitions to the appropriate personnel.
- On-call construction support and anomaly avoidance – ensures (a) intrusive activities are coordinated in advance with UXO-qualified personnel providing support; (b) munitions and suspect munitions encountered are visually evaluated to determine whether they are or

may be MEC, munitions debris (MD), or non-munitions debris (e.g., metal scrap); and such munitions or debris that poses an explosive hazard are reported and managed properly.

- Munitions and material that UXO-qualified personnel determines does not present an explosive hazard should be removed and disposed of in compliance with applicable environmental laws and regulations.
- Under certain circumstances, UXO-qualified personnel may use anomaly avoidance techniques to avoid subsurface anomalies during specific intrusive activities (e.g., fence post or well installation), if appropriate.

This CSP will be present at the project site with the construction contractor responsible personnel during intrusive activities on FORA ESCA property. This CSP will also be present with the UXO-qualified personnel at all times during intrusive activities on FORA ESCA property. Copies of the CSP will be provided to responsible personnel for MPWMD, CalAm, FORA, Arcadis, Weston, Army, EPA, DTSC and City of Seaside permitting agency. This CSP will be amended as site conditions change, if determined to be necessary.

1.1. Site Description

The project sites are located in the Seaside MRA (Parcels E24, E34 and E23.1), which is located in the western portion of the former Fort Ord (Figure 1). The project sites are within the boundaries of the Seaside MRA designated residential reuse and non-residential reuse areas (Figure 2), which is wholly contained within the jurisdictional boundaries of the City of Seaside. The Seaside MRA is bordered by the City of Seaside to the west, the historical impact area to the east, Eucalyptus Road to the north, and additional former Fort Ord property to the south. The project site generally consists of maritime chaparral with patches of non-native grassland (ESCA RP Team 2017b).

The current configuration of the ASR well site was constructed between January and February 2008. The new General Jim Moore Boulevard alignment was constructed between December 2007 and December 2010. Military munitions recognition and safety training was provided to construction personnel prior to the start of the project, with construction support provided by UXO-qualified personnel during intrusive activities (Army 2008 and ESCA RP Team 2017b). During these intrusive construction activities, neither munitions nor munitions debris were encountered.

1.2. Construction Project Description

MPWMD is expanding the current ASR Well Site, located immediately east of General Jim Moore Boulevard, from approximately 1.1 acres to approximately 1.9 acres to accommodate added capacity needs of other existing and proposed ASR well sites in the Seaside Basin. Design plans include: expansion of the existing backflush pit / percolation basin; construction of secondary ingress/egress routes; construction of a sound attenuation enclosure; placement of a truck off-loading pad; installation of underground piping and fencing; and a possible backup well installation (Figures 2 and 3).

Vegetation clearing, grading and excavation activities in support of the ASR Expansion Project will be conducted to include the following (Figure 3):

- Surveying and boundary staking
- Clearing, grubbing and grading of secondary ingress/egress routes
- Trenching in support of installation of underground piping
- Grading, excavation and scarification of the expanded backflush percolation basis
- Grading and excavation of a disinfectant off-loading facility to include trenching for underground piping, electrical and instrumentation conduits
- Digging of fencing installation and repair post holes
- Grading existing roadways
- Excavation or digging of holes for landscaping
- Drilling, development and installation of backup well (optional)
- Maintenance activities associated with below grade infrastructure
- Installation and maintenance of ASR site landscaping
- General maintenance and repair of underground infrastructure

MPWMD anticipates having UXO-qualified personnel provide anomaly avoidance for certain activities (e.g., auguring fencing post holes, drilling locations for backup wells) to ensure subsurface anomalies are avoided (Section 3.2). On-call construction support will be provided for the remaining intrusive activities (Section 3.2). Should a munition or suspect munition be encountered, workers will not approach, disturb, remove or attempt to destroy it.

CalAm is installing a below-grade MPWSP transmission main line within the adjacent General Jim Moore Boulevard, located immediately west of the ASR Well Site, from Coe Avenue to approximately the southern extent of the ASR Well Site to accommodate added capacity needs of other existing and proposed ASR well sites in the Seaside Basin. Additionally, upgrades to the below-grade pipelines at the intersection of General Jim Moore Boulevard and Hilby Avenue will be conducted. Design plans include: installation of underground piping.

- Excavation activities in support of the CalAm transmission main line installation and upgrades include trenching in support of installation and upgrades of underground piping.

CalAm anticipates having UXO-qualified personnel provide on-call construction support for the intrusive activities (Section 3.2). Should a munition or suspect munition be encountered, workers will not approach, disturb, remove or attempt to destroy it.

1.2.1 Soil Management Plan

Intrusive activities within the FORA ESCA property are subject to the following soil management practices:

- Soils within the project site may not be removed from the Seaside MRA, with the exception of small quantities of soil to allow for laboratory analysis under a chain-of custody protocol, for purposes of design specifications
- Clean fill material may be imported, if needed, in accordance with DTSC Information Advisory for Clean Imported Fill Material
- Separate soil management practices are established for the residential reuse areas (Figures 2 and 3; yellow area) and non-residential development reuse areas (Figures 2 and 3; pink area) ensuring that soils from non-residential development reuse areas are not staged, stockpiled or spread within the designated residential reuse areas
- Grading and compacting of soil along access routes will remain within the work site designated reuse area
- Excess soils generated from grading and excavation operations will be stockpiled on the ground surface within the work site designated reuse area, spread evenly with the work site designated reuse area, used as fill material with in the work site designated reuse area, or used for other project specific construction needs within the designated land use area
- Best management practices will be implemented to avoid erosion

1.3. Organizational Roles and Responsibilities

MPWMD, CalAm, and their construction contractors, which are the primary organizations involved with construction activities, have their own construction-related roles and responsibilities. MPWMD, CalAm, and their construction contractors will (a) require visitors and subcontractors to check in with the field office prior to entering the area or conducting intrusive activities; and (b) ensure that all project personnel expected to conduct intrusive activities have received military munitions recognition and safety training prior to allowing site access.

The following table identifies and documents the general roles and responsibilities of both the construction support contractor (i.e., UXO-qualified personnel) and MPWMD/CalAm and their construction personnel during intrusive activities on the project site.

Project Personnel	Role	Responsibilities
MPWMD/CalAm Contractor Site Construction Supervisor	Site Access On-call construction support plan compliance	• Maintain site access restrictions • Coordinate and ensure military munitions recognition and safety training has been received by workers expected to conduct intrusive activities

	Primary contact to coordinate UXO-qualified personnel response	• Maintain military munitions recognition and safety training records • If a munition or suspect munition is encountered, intrusive activities in the immediate and adjacent areas are stopped, the area where the munition was encountered is secured and clearly marked to prevent unauthorized access, and workers vacate the area • Contact UXO-qualified personnel to determine whether the munition or suspect munition poses an explosive hazard • Notify construction workers when work can resume
Intrusive Site Workers	Military munitions recognition and safety training Munition or suspect munition notification to Site Construction Supervisor	• Receive and acknowledge understanding of the military munitions recognition and safety training • Stop work if a munition or suspect munition is encountered, retreat to a safe location, and report encounter to the site construction supervisor • Remain at the safe location until authorized by the site construction supervisor to return
Construction Support Contractor – Arcadis/Weston	Military munitions recognition and safety training support Identify construction support requirements Construction support plan implementation and compliance	• Provide military munitions recognition and safety training to workers expecting to conduct intrusive activities • Review munitions-related background and munitions use information to verify probability of encountering MEC • Identify appropriate construction support requirements for intrusive activities • Develop construction support plan • Ensure proper implementation and compliance of the construction support plan • Complete an Army MEC Incident Recording Form for confirmed or suspect munition. • Complete FORA MEC Notification Form for confirmed or suspect munition. • Complete FORA MEC Assessment Form for confirmed or suspect munition. • Complete Construction Support After Action Report
UXO-Qualified Personnel (at a minimum, UXO	Military munitions recognition and safety training support	• Support military munitions recognition and safety training to workers expecting to conduct intrusive activities

Technician III) – Weston	Construction support during intrusive activities Notify City of Seaside Police Department of confirmed or suspect munitions encounters	• Support military munitions recognition and safety training to new workers expected to conduct intrusive activities • Respond to reports of an encounter with munition or suspect munition, visually assess the munition to determine whether it poses or may pose an explosive hazard. Do not touch, move, disturb, or destroy it. • Manage removal, storage, and appropriate off-site disposal of munitions and MD that is determined not to pose an explosive hazard. • Notify City of Seaside Police Department of confirmed or suspect munitions encounters • Notify Construction Support Contractor and FORA of confirmed or suspect munitions encounters
FORA	Military munitions recognition and safety training access Construction support plan compliance	• Assist in coordinating military munitions recognition and safety training to workers expecting to conduct intrusive activities • Ensure compliance of the construction support plan • Review and submit the Army MEC Incident Recording Form for confirmed or suspect munitions. • Review and submit FORA MEC Notification Form for confirmed or suspect munitions. • Review and submit FORA MEC Assessment Form for confirmed or suspect munitions. • Review and submit Construction Support After Action Report

Additional information on construction support, including on-call construction support after-action reporting, and responses to suspect munition is provided in Sections 3 and 4 of this CSP, respectively.

2. MILITARY MUNITIONS BACKGROUND

The project site is located within the northwestern portion of the Seaside MRA where MEC were found and MEC removal actions were completed. The northwestern portion of the Seaside MRA contains portions of munitions response sites (MRSs) that were used for live-fire training with military munitions (Section 2.1). These MRSs were the subject of investigations and removal actions with detected munitions removed (Section 2.2). In addition, the effectiveness of munitions removal actions to reduce the risk associated with the potential presence of munitions to levels acceptable for construction and maintenance personnel who perform intrusive activities, with the appropriate levels of construction support, has been documented for the Seaside MRA, which encompasses the project site (Section 2.2).

2.1. Historical Military Training

The Seaside MRA is approximately 423 acres in size and had previously been used for weapons and troop training. Three MRSs (MRS-15 SEA 01 [Parcel E24], MRS-15 SEA 02 [Parcel E34] and MRS-15 SEA 03 [Parcel E23.1]) with historical uses were identified in the project site (Figure 4). The historical uses included:

MRS-15 SEA 01 (Parcel E24)

- Small arms ammunition training
- Non-firing target range training
- Pre-World War II munitions training
- Hand grenade training
- Troop maneuvers

MRS-15 SEA 02 and MRS-15 SEA 03 (Parcels E34 and E23.1)

- Troop maneuvers

The types of munitions most likely to be encountered within 100 feet of the project sites include the following:

MRS-15 SEA 01 (Parcel E24)

- Stokes mortars

MRS-15 SEA 02 and MRS-15 SEA 03 (Parcels E34 and E23.1)

- Hand grenade fuzes
- Smoke hand grenade

- Illumination signals

2.2. Summary of Previous Munitions Response Actions

The Final Group 1 RI/FS summarized the available data and evaluation of the risk associated with munitions that may remain present for the Seaside MRA (ESCA RP Team 2017b). The following bullet points summarize the munitions responses (investigation and removal actions) conducted at the project site based on the referenced document:

- Army Munitions (MEC) Removal Action – completed removal action using digital geophysical survey equipment and analog equipment to the depth of detection in 2004, removing and disposing of munitions, many of which were determined by qualified personnel to be MEC, and MD, which was evaluated to document its explosive safety status, within the project site, with the exception of areas referred to as Special Case Areas (SCAs).
- FORA ESCA Remediation Program (RP) Removal Action – completed the Seaside MRA Phase II removal action for the SCAs using digital geophysical survey equipment and analog equipment to the depth of detection in 2009, removing and disposing of detected munitions (MEC) and MD, which was evaluated to document its explosive safety status, within the SCA portions of the project site.

The munitions, including MEC, recovered during previous investigation and response actions within the project site are shown in Figure 5.

The Final Seaside MRA Residential Protocol Implementation (RPI) Technical Report and Final Seaside MRA Supplemental RPI Technical Report summarized the available data and verified the acceptability for residential use for the Seaside MRA designated residential reuse area (ESCA RP Team 2017a and 2017c). Based on an evaluation of the Final Group 1 RI/FS, Final Seaside MRA RPI Technical Report, and Final Seaside MRA Supplemental RPI Technical Report (ESCA RP Team 2017b, 2017a, and 2017c, respectively), the following conclusions support a low probability of encountering MEC determination at the project site:

- Completed removal action to the depth of detection with no documentation or quality assurance/quality control (QA/QC) concerns and an overall MEC risk of “lowest” in the designated residential reuse areas and non-residential development reuse areas of Parcels E24, E23.1 and E34 based on the Final Group 1 RI/FS
- No remaining evidence of high hazard munitions (i.e., items that will cause major injury or death if functioned or detonated by an individual’s activities), no remaining technical challenges, no remaining detection depth concerns, and no remaining documentation or QA/QC concerns in the designated residential reuse portions of Parcels E23.1 and E34 based on the Final Seaside MRA RPI Technical Report
- Further assessment or verification was not required in the designated residential reuse portions of Parcels E23.1 and E34 and the parcels were recommended as acceptable for

residential reuse in the designated residential reuse areas based on the Final Seaside MRA RPI Technical Report

- Further assessment and verification was conducted in the designated residential reuse portion of Parcel E24. The Parcel was recommended as acceptable for residential reuse in the designated residential reuse area based on the Final Seaside MRA RPI Technical Report and the Final Seaside MRA Supplemental RPI Technical Report

3. CONSTRUCTION SUPPORT PROCEDURES

Training and construction support will be provided for intrusive activities to fulfill the requirements of the excavation permit under the City of Seaside Excavation and Digging on the Former Fort Ord Ordinance (City of Seaside Code of Ordinances, Chapter 15.34), and includes:

- Military Munitions Recognition and Safety Training (Section 3.1)
- On-Call Construction Support (Section 3.2)
- After-Action Reporting (Section 3.3)

3.1. Military Munitions Recognition and Safety Training

Excavation permitting requirements indicate that all personnel involved in intrusive activities obtain military munitions recognition and safety training. Site workers involved in intrusive activities will be provided military munitions recognition and safety training by FORA in English and Spanish (translation of additional languages may be available upon request). The objective of military munitions recognition and safety training is to ensure that site workers involved or potentially involved in intrusive activities are informed about the possibility of encountering munitions and the actions to be taken should they encounter, or suspect they have encountered, a munition. Such actions include (a) not approaching, disturbing, touching or moving it; (b) stopping intrusive activities in the immediate and adjacent areas; and (c) reporting the suspect munitions to the appropriate personnel.

The military munitions recognition and safety training will be provided through a training video that covers the below topics and access to UXO-qualified personnel to address questions:

- Background Information
  - Who is the training for and why is training needed?
  - What are munitions and types of munitions used on Fort Ord?
  - What was done to remove munitions?
  - If munitions cleanup occurred, why training is still needed?
  - What should you do if you encounter a munition or suspect munition?
- Munitions recognition and hazard awareness
  - Not all munition look like munitions
  - Munitions are dangerous
  - Fort Ord specific munitions recognition (by type)
  - Munition hazard identification
- Details of munitions safety – emphasizing the 3Rs

- Recognize (when you may have encountered a munition and that munitions are dangerous)
- Retreat (do not approach, touch, move or disturb it, but carefully leave the area)
- Report (notify your site supervisor to contact the UXO-qualified personnel)

MPWMD, CalAm, and their construction contractors will ensure that site workers conducting intrusive activities have received the required military munitions recognition and safety training from FORA, which includes the Army Safety Alert, the Fort Ord Military Munitions 3Rs Explosives Safety Guide, and the training video attendance. Site workers receiving military munitions recognition and safety training will be required to sign a training log acknowledging their attendance and understanding of the training material. The training records are required to be maintained by each contractor on the site and be available for inspection upon request by FORA, Army, EPA and/or DTSC. Copies of the training records will also be maintained by FORA and provided to the UXO-qualified personnel for tracking and on-call construction support after-action reporting.

3.2. On-Call Construction Support

This section presents procedures for implementing on-call construction support for a project site where the probability of encountering MEC is low (Section 2). UXO-qualified personnel must meet the qualification requirements of DoD Explosives Safety Board's Technical Paper 18, Minimum Qualifications for Personnel Conducting Munitions and Explosives of Concern-Related Activities, for a UXO Technician III. Additionally, they will possess the appropriate training to include 40-hour Hazardous Waste Operations and Emergency Response and associated 8-hour Hazardous Waste Operations and Emergency Response refresher course (within the past 12 months).

UXO-qualified personnel will comply with any MPWMD, CalAm, and their construction contractors approved safety plans. Additionally, they will conduct required actions in accordance with applicable company health and safety requirements, which are not presented in this CSP.

UXO-qualified personnel, who will be on standby (i.e., on-call), will be available to assist if a munition or suspect munition is encountered. Support can be provided from offsite, when called, or be on location and available to provide immediate support if a munition or suspect munition is encountered. MPWMD, CalAm, and their construction contractors may elect to have UXO-qualified personnel available on-location for a portion of the intrusive activities to expeditiously facilitate a response if a munition or suspect munition is encountered (Section 4.1). The UXO-qualified personnel responsibilities will include the following tasks:

- Possess a copy of this CSP at all times during the intrusive activities on FORA ESCA property
- Maintain a copy of Military Munitions Recognition and Safety Training sign-in sheets/logs
- Conduct anomaly avoidance activities, if requested
- If on the project site, attend daily informational or tailgate safety briefings conducted by MPWMD, CalAm, and their construction contractors

- Respond to reports of an encounter with a munition or suspect munition as described below and in Section 4 of this CSP
- Produce daily field reports of on-call/on-location activities and submit to FORA on a weekly basis
- Prepare after-action reporting to construction support contractor (i.e., Arcadis and Weston) as described in Section 3.3

If requested, anomaly avoidance will consist of a technology-aided surface inspection using a handheld geophysical detection instrument (e.g., magnetometer and Whites All-Metals detector) to avoid contact with potential subsurface anomalies. If an anomaly is detected, the anomaly's location will be cordoned off, if necessary, to prevent disturbance. Additionally, ground-disturbing or intrusive activities will be relocated to another location in coordination with project personnel.

If a munition or suspect munition is encountered during intrusive activities, it is imperative that the munition not be touched, moved, or disturbed, but be reported immediately to the site construction supervisor. Workers should:

- Mark the area near or otherwise note the location of the munition or suspect munition (Recognize)
- Stop work, take a photograph of the munition, if possible, but do not approach or disturb it to get a better view, and leave the work area (Retreat)
- Report the suspect munition to their site construction supervisor (Report)

The site construction supervisor will ensure that construction-related activities within a 200-foot radius of the munition or suspect munition is stopped, workers evacuate to a safe area, and access to the 200-foot radius prohibited. The site construction supervisor will then contact the UXO-qualified personnel for support.

UXO-qualified personnel will respond to the area and visually inspect the munition or suspect munition. UXO-qualified personnel will not touch, disturb, remove or attempt to destroy it. UXO-qualified personnel will determine whether it poses or may pose an explosive hazard. After this evaluation, munitions determined to be MEC and debris that poses an explosive hazard will be reported, secured in place and managed properly. Munitions and material that UXO-qualified personnel determines does not present an explosive hazard should be removed and disposed of in compliance with applicable environmental laws and regulations. UXO-qualified personnel will follow the appropriate procedures identified in Section 4 of this CSP, which generally include the following.

If UXO-qualified personnel classify the encountered munition as:

- A confirmed or suspect MEC or that debris poses an explosive hazard, the procedures presented in Section 4.2 will be implemented.

- MD, the debris will be evaluated to ensure it does not pose an explosive hazard and removed from the site. The debris will be securely stored at the Future East Garrison MRA Explosives Storage Location (i.e., the former Ammunition Supply Point) for appropriate off-site disposal at project's conclusion. Following removal of the MD, the UXO-qualified personnel will notify the site construction supervisor that intrusive activity may resume within the 200-foot radius area. The UXO-qualified personnel will contact FORA as an informational notification of each MD find (Section 4.1). Recovered MD will be certified as materials documented as safe (MDAS) by the construction support contractor using Form 1348 prior to releasing the MD to an appropriate foundry or recycler at the project's conclusion. (Section 3.3).
- Non-munitions related debris (e.g., household scrap metal, horse shoes) will be removed from the project site by the construction contractor and managed as appropriate. Following removal of the non-munitions related debris, UXO-qualified personnel will notify the site construction supervisor that intrusive activity may resume within the 200-foot radius area. Notification to FORA regarding non-munitions related debris or inclusion of non-munitions related debris in the on-call construction support after-action report is not required.

3.3. After-Action Reporting

Following completion of the construction support activities conducted on FORA ESCA property, FORA as the property owner will submit an on-call construction support after-action report to the excavation permitting agency, Army, EPA, and DTSC (Attachment B). The on-call construction support after-action report will be submitted within 30 days of project completion and will include at a minimum: a map of the excavation footprint with munition finds plotted; table summarizing munitions encountered by type, munitions determined to be MEC, munitions debris, or military training-related items (range-related debris) recovered from the project site; applicable military munitions recognition and safety training logs; and applicable construction support daily reports.

4. RESPONSE TO SUSPECT MUNITIONS ITEM PROCEDURES

Only UXO-qualified personnel will respond to reports of an encounter with a munition or suspect munition. The exception is when uniformed DoD explosive ordnance disposal (EOD) or law enforcement bomb squad personnel respond. The response procedures are presented in this section and are summarized as follows:

- Response to Suspect Munitions Item (Section 4.1) – In the event a munition or suspect munition is encountered by site workers (i.e., Recognize), intrusive activities within the immediate and adjacent areas will cease (i.e., Retreat), workers evacuate to a safe area, and a 200-foot radius area will be secured from unauthorized entry. The site construction supervisor will then contact the UXO-qualified personnel for support (i.e., Report).
- Response to Confirmed or Suspect MEC Item (Section 4.2) – In the event the encountered item is classified by UXO-qualified personnel as a confirmed or suspect MEC item work outside the 200-foot radius area may continue; however, work should not interfere with security measures set in place for the suspect munitions item or authority's response to the suspect munitions item. UXO-qualified personnel will immediately notify the City of Seaside Police Department (Table 1) followed by FORA of the confirmed or suspect MEC find. FORA will immediately contact the Army, EPA and DTSC of the confirmed or suspect MEC find.
- MEC Find Notification Form (Section 4.3) – If, after disposal, the suspect item is confirmed to be MEC or remains a suspect MEC, the UXO-qualified personnel will complete the Army MEC Incident Recording Form (Attachment C) and MEC Find Notification to FORA Form (Attachment D) and transmit the two forms to FORA.
- MEC Find Assessment Form (Section 4.4) – If, after disposal, the suspect MEC item is confirmed to be MEC or remains a suspect MEC, FORA will assess the probability of encountering MEC and will submit the assessment to Army, EPA and DTSC for concurrence using the FORA MEC Find Assessment Form (Attachment E).
- Restart of Work after MEC Find (Section 4.5) – Intrusive activities will not resume within the 200-foot radius exclusion zone until any additional necessary investigation is completed based on the MEC find assessment and Army, EPA and DTSC concurrence that the probability of encountering MEC is low.

4.1. Response to Suspect Munitions Item

Each individual is responsible for reporting suspect munitions items discovered during construction activities. If a suspect munitions item is discovered at the project site (i.e., Recognize), all work activities will cease within a 200-foot radius of the suspect munitions item, all workers will vacate the 200-foot radius area (i.e., Retreat), and the 200-foot radius area will be secured from unauthorized entry. No attempt should be made by workers to disturb, remove, or destroy the suspect munitions item. The site workers will notify their site construction supervisor, who will contact the UXO-qualified personnel to mobilize to the project site and assess the suspect munitions item (i.e., Report). Contact information is provided in Table 1.

The general sequence of work stoppage in response to a suspect munitions item is as follows:

- Intrusive activities will cease, heavy equipment and/or site vehicles are to stay in place, workers are to vacate a 200-foot radius area of the suspect munitions item and the 200-foot radius area will be secured from unauthorized entry.
    - If feasible and safe to do, the general location of the suspect munitions item should be marked, global position system (GPS) coordinates should be recorded and pictures of the item taken.
- Site personnel will immediately contact the site construction supervisor to report the suspect munitions item.
- Site construction supervisor will confirm that all work has stopped within a 200-foot radius of the suspect munitions item, workers have retreated to a safe location at least 200-feet from the suspect munitions item and the 200-foot radius area is secured from unauthorized entry.
- Site construction supervisor will immediately contact the on-call UXO-qualified personnel (Table 1) and provide GPS coordinates and/or pictures of the suspect munitions item, if available.
    - If the UXO-qualified personnel cannot respond within the normal work day, MPWMD, CalAm, and their construction contractors will maintain control of the 200-foot radius area to prevent intrusive activities and to prevent unauthorized entry.
- On-call UXO-qualified personnel will mobilize to the location of the suspect munitions item and ensure the item is evaluated and classified as confirmed or suspected MEC, MD, or non-munitions related debris (e.g., scrap metal).
    - If feasible, a visual assessment of any photographs will be conducted by the UXO-qualified personnel prior to mobilization to the site to determine if the item is munitions-related or non-munitions-related debris (e.g., metal scrap).
- **If the item is classified by the UXO-qualified personnel as confirmed or suspect MEC, the UXO-qualified personnel will implement the procedures outlined in Section 4.2.**
- If the item is classified by the UXO-qualified personnel as MD, the item will be removed by the UXO-qualified personnel and securely stored at the Future East Garrison MRA Explosives Storage Location (i.e., the former Ammunition Supply Point) for appropriate off-site disposal at project conclusion.
    - Following removal of the MD, the UXO-qualified personnel will notify the site construction supervisor that intrusive activities may resume within the 200-foot radius area.
    - Following notification that intrusive activities may resume, the UXO-qualified personnel will contact FORA within 24 hours as an informational notification of the MD find. A summary of the recovered MD will be provided in the on-call construction support after-action report (Section 3.3).

- If the item is confirmed to be non-munitions-related debris (e.g., scrap metal), the item will be removed from the project site by the construction contractor and managed as appropriate.
    - Following removal of the non-munitions-related debris, the UXO-qualified personnel will notify the site construction supervisor that intrusive activities may resume within the 200-foot radius area.
    - Notification to FORA regarding non-munitions-related debris or inclusion of non-munitions-related debris in the on-call construction support after-action report is not required.

4.2. Response to Confirmed or Suspect MEC Item

At no time should a confirmed MEC or suspect MEC item be disturbed, remove, or destroyed by workers or UXO-qualified personnel. If an item is classified as a confirmed or suspect MEC item by the UXO-qualified personnel, all work within the 200-foot radius area may not resume until further notice. If it is determined that the confirmed or suspect MEC item requires detonation by uniformed DoD EOD personnel or local bomb squad with equivalent training, all work on the entire project site will immediately cease and all site workers will gather at a location designated by the construction contractor under their emergency evacuation plan.

The general sequence of work stoppage and construction support actions in response to a confirmed or suspect MEC item is as follows:

- Intrusive work within the immediate and adjacent areas will cease (i.e., Retreat), workers evacuate to a safe area, and a 200-foot radius area will be secured from unauthorized entry. The site construction supervisor will then contact the UXO-qualified personnel for support. Work outside the 200-foot radius area may continue, if necessary. However, work should not interfere with security measures set in place around the munition or suspect munition encountered.
- UXO-qualified personnel will secure the location of the munition or suspect munition encountered, or of a munition or munition determined to be MEC or munition for which UXO-qualified personnel could not make a determination, to prevent unauthorized access.
- UXO-qualified personnel will record the GPS location and take photographs of the munition.
- UXO-qualified personnel will immediately contact the City of Seaside Police Department to mobilize to the project site and secure the location of a munition or munition determined to be MEC or munition for which UXO-qualified personnel could not make a determination.
- Upon arrival, the City of Seaside Police Department will secure the area, consult with the UXO-qualified personnel, and request uniformed DoD EOD personnel or local bomb squad with equivalent training, support of an explosives or munitions emergency.
    - If the City of Seaside Police Department, uniformed DoD EOD personnel, or local bomb squad with equivalent training, cannot respond within the normal work day,

MPWMD, CalAm, and their construction contractors will maintain control of the 200-foot radius area to prevent intrusive activities and to prevent unauthorized entry.

- UXO-qualified personnel will immediately notify FORA and Arcadis/Weston that a munition or suspect munition was encountered and provide status of response by City of Seaside Police Department, uniformed DoD EOD personnel, or local bomb squad with equivalent training.
- FORA will immediately contact the Army, EPA, and DTSC regarding the situation.
- If the munition determined to be MEC or a munition for which they could not make a determination requires detonation by uniformed DoD EOD personnel or local bomb squad personnel with equivalent training, work activities within an area determined by the responding uniformed DoD EOD personnel or local bomb squad team leader will be stopped, with construction and UXO-qualified personnel evacuated to a designated area in accordance with an emergency evacuation plan for an accurate head-count.
- Once the uniformed DoD EOD or local bomb squad personnel provide an all clear, UXO-qualified personnel will assist Arcadis/Weston with completion of necessary notifications and reports (Section 4.3).
    - If MEC was encountered, intrusive activities may not resume within the 200-foot radius until the appropriate reporting in accordance with Section 4.3 has been completed; additional investigation, if determined to be necessary, is completed; and Army, EPA and DTSC concur that the probability of encountering MEC remains low. Based on the type of MEC encountered, the 200-foot radius may be expanded for activities moving forward, if recommended by the construction support contractor in consultation with UXO-qualified personnel.
    - If uniformed DoD EOD or local bomb squad personnel determine the munition, or munition for which the determination initially could not be made, is MD that does not pose an explosive hazard, intrusive activities may resume as described in Section 4.1, seventh bullet.

4.3. MEC Find Notification to FORA Form

After disposal of a confirmed MEC or of a munition for which a determination could not be made, the construction support contractor (i.e., Arcadis/Weston) in coordination with the UXO-qualified personnel will complete an Army MEC Incident Recording Form (Attachment C) and a MEC Find Notification to FORA Form (Attachment D) and submit the forms to FORA for distribution to the Army, EPA, and DTSC. The Army MEC Incident Recording Form will be submitted to FORA within 24 hours of the disposal of MEC. FORA will distribute the completed MEC Incident Recording Form to the Army, EPA and DTSC with 48 hours of the disposal. The construction support contractor will provide FORA with the MEC Find Notification to FORA Form within 48 hours of disposal to support the munitions find assessment (Section 4.4).

4.4. MEC Find Assessment Form

FORA will propose to the Army, EPA, and DTSC an appropriate probability of encountering MEC (low or moderate/high) and a recommendation for the level of construction support (on-call or on-site) appropriate for the site conditions. FORA will document the munitions, including MEC, encounters assessment and proposed determination on the FORA MEC Find Assessment Form (Attachment E) and will submit the form with required attachments to the Army, EPA, and DTSC for review within 20 days of a munitions encounters.

The probability of encountering MEC and the resulting level of construction support will be jointly determined by the Army, EPA, and DTSC. If determined that additional investigation is required as part of the assessment, FORA will conduct the investigation in accordance with an approved work plan, if within the scope of its obligations. Army, EPA, and DTSC will review the results of the investigation to support the munitions find assessment.

If the probability of encountering MEC is determined to remain low, intrusive activities may resume using on-call construction support and this CSP (Section 4.5). FORA will receive written determination from the Army, EPA, and DTSC of their assessment and provide a copy of the written determination to MPWMD, CalAm and their construction contractors prior to resuming intrusive activities within the 200-foot radius. If the probability of encountering MEC is determined to be moderate to high, intrusive work at the project site will cease until further notice.

The agency consultation process will be completed as expeditiously as practicable. Intrusive activities on the FORA ESCA property may not restart until the assessment is completed, the Army, EPA, and DTSC have made a determination of the probability of encountering MEC, and any required additional action has been conducted by FORA. FORA will receive written determination from the Army, EPA, and DTSC on the MEC finds assessment completion and provide a copy of the determination to MPWMD, CalAm, and their construction contractors prior to resuming intrusive activities on the FORA ESCA property using on-call construction support and this CSP (Section 4.5).

4.5. Restarting Work after a MEC Find

After disposal of a confirmed MEC or of a munition for which a determination could not be made, intrusive activities may not resume within a 200-foot radius until the munitions find assessment has been completed; the Army, EPA and DTSC have concurred with the assessment; and required additional actions or procedures have been conducted. Based on the type of MEC encountered, the 200-foot radius may be expanded for activities moving forward, if recommended by the construction support contractor in consultation with UXO-qualified personnel. FORA will receive written determination from the Army, EPA, and DTSC on the MEC finds assessment completion and provide a copy of the determination to the permittee prior to resuming intrusive site activities using on-call construction support and this CSP.

5. REFERENCES

Environmental Services Cooperative Agreement Remediation Program Team (ESCA RP Team). 2008. Final Technical Information Paper, Phase II Seaside Munitions Response Area, Roadway Alignment and Utility Corridor (Pollution Report and Removal Action Activity Report), Former Fort Ord, Monterey County, California. September 26. (Fort Ord Administrative Record No. ESCA-0117)

————.2011. Final Technical Information Paper, Phase II Seaside Munitions Response Area Outside Roadway Alignment and Utility Corridor (Pollution Report and Removal Action Activity Report), Former Fort Ord, Monterey County, California. March 25. (Fort Ord Administrative Record No. ESCA-0251B)

————.2017a. Final Residential Protocol Implementation Technical Information Paper, Seaside Munitions Response Area, Former Fort Ord, Monterey County, California. March 29. (Fort Ord Administrative Record No. ESCA-0306C)

————.2017b. Final Group 1 Remedial Investigation/Feasibility Study, Seaside Munitions Response Area and Parker Flats Munitions Response Area Phase II, Former Fort Ord, Monterey County, California. May 04. (Fort Ord Administrative Record No. ESCA-0318B)

————.2017c. Final Supplemental Residential Protocol Implementation Technical Information Paper, Seaside Munitions Response Area, Former Fort Ord, Monterey County, California. December 12. (Fort Ord Administrative Record No. ESCA-0342B)

United States Department of the Army (Army). 2008. Memorandum: Unexploded Ordnance (UXO) Construction Support for Monterey Peninsula Water Management District (MPWMD) Aquifer Storage and Recovery (ASR) Project (Santa Margarita Well), Former Fort Ord. July 16. (Fort Ord Administrative Record No. OE-0718)

6. ATTACHMENTS

Table 1 – List of Contacts

Figure 1 – Seaside Munitions Response Area

Figure 2 – Seaside MRA Reuse Plan

Figure 3 – Seaside MRA ASR Well Site Expansion and MPWS Project Site

Figure 4 – Seaside MRA ASR Well Site Expansion and MPWS Project Site Munitions Response Site Boundaries

Figure 5 – Seaside MRA ASR Well Site Expansion and MPWS Project Site Recovered MEC

Figure 6 – Seaside MRA MPWS Project Site Recovered MEC

A Project Site Grading and Soil Management Areas (as applicable)

B On-Call Construction Support After-Action Report Template

C Army MEC Incident Recording Form (http://www.fodis.net/mec/public)

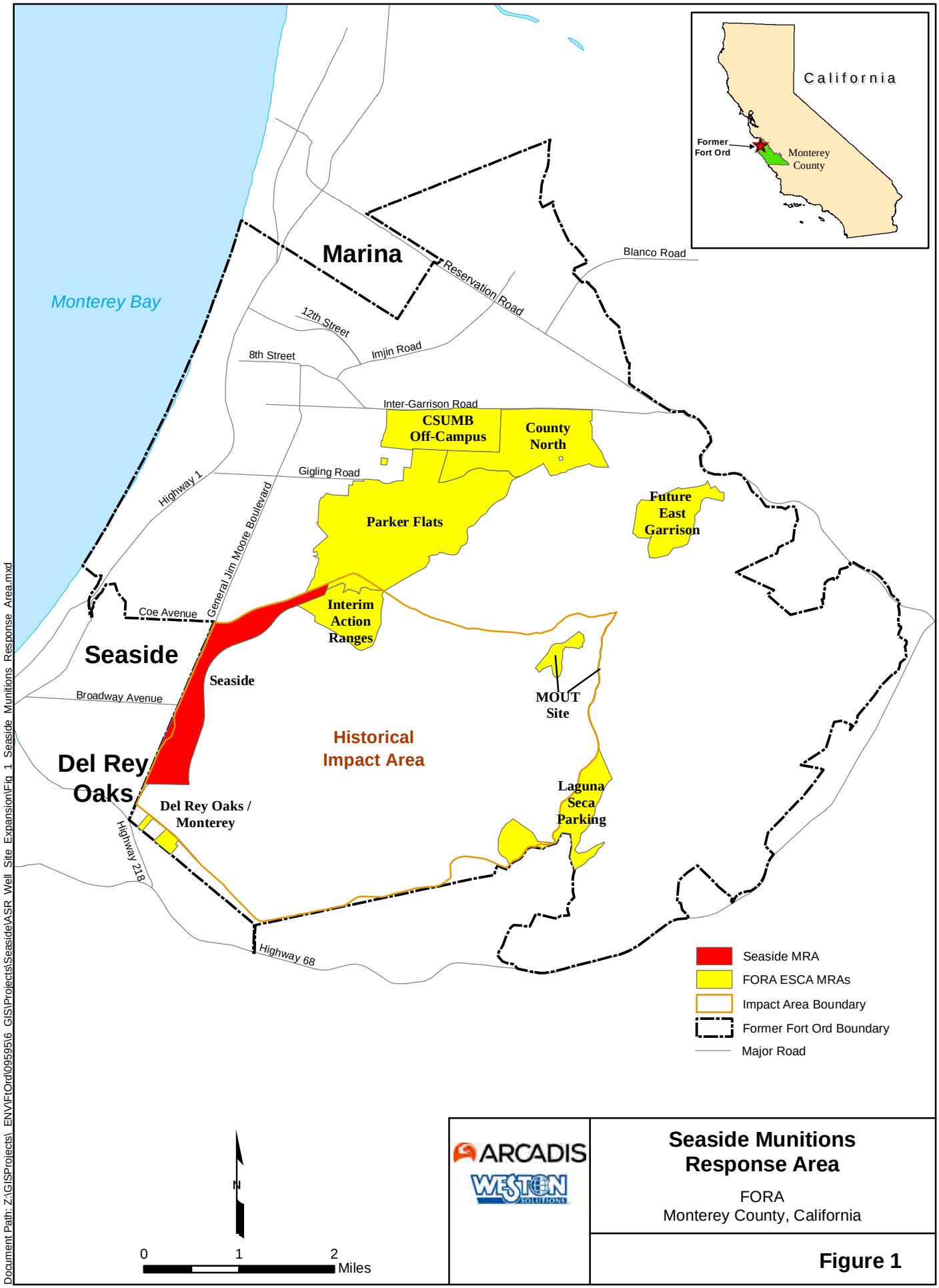
D FORA MEC Find Notification Form

E FORA MEC Find Assessment Form

F Regulatory Approval Letters

Table 1
List of Contacts

Company		Position	Name	Phone Number
FORA (Land Owner)	Primary	FORA ESCA Program Manager (Land Owner Representative)	Stan Cook	(831) 883-3672 (office)
				(831) 293-4077 (cell)
	Alternate	FORA ESCA Coordinator	Laura Vidaurri	(831) 883-3672 (office)
MPWMD	Primary	Project Engineer	Steve Tanner	(805) 883-2238
				-
	Alternate	Water Resources Engineer	Maureen Hamilton	(831) 658-5622 (office)
				(831) 242-0191 (cell)
CalAm	Primary	Engineering Manager	Chris Cook, PE	(831) 646-3241 (office)
				(831) 277-2405 (cell)
	Alternate	Vice President, Engineering	Ian Crooks	(916) 568-4296 (office)
				(831) 236-7014 (cell)
Arcadis	Primary	Certified Project Manager	Christopher Spill	(510) 387-3765 (cell)
				(415) 432-6922 (office)
	Alternate	Task Manager	Noel Handley	(831) 674-3075 (office)
				(256) 655-3478 (cell)
Weston Solutions - UXO-Qualified Personnel Coordination	Primary	Project Manager	Linda Temple	(831) 229-1668 (cell)
	Primary	UXO-Qualified Personnel **(on-call)**	TBD	TBD
MPWMD Construction Contractor Supervisor	Primary	On-Site Construction Supervisor	TBD	TBD (field office)
				TBD (cell)
	Alternate	On-Site Construction Supervisor	TBD	TBD (field office)
				TBD (cell)
CalAm Construction Contractor Supervisor	Primary	On-Site Construction Supervisor	TBD	TBD (field office)
				TBD (cell)
	Alternate	On-Site Construction Supervisor	TBD	TBD (field office)
				TBD (cell)
City of Seaside Police Department	Primary	Dispatch	NA	(831) 394-6881
	Alternate	Emergency Hotline	NA	911
Travis Air Force Base	Primary	Explosive Ordnance Disposal (EOD)	NA	(707) 424-5517


California
Former Fort Ord
Monterey County
Monterey Bay
Marina
Reservation Road
Blanco Road
12th Street
8th Street
Imjin Road
Inter-Garrison Road
CSUMB Off-Campus
County North
Gigling Road
Highway 1
General Jim Moore Boulevard
Parker Flats
Future East Garrison
Coe Avenue
Interim Action Ranges
Seaside
Seaside
Broadway Avenue
MOUT Site
Historical Impact Area
Del Rey Oaks
Del Rey Oaks / Monterey
Laguna Seca Parking
Highway 218
Highway 68
Seaside MRA
FORA ESCA MRAs
Impact Area Boundary
Former Fort Ord Boundary
Major Road
N
0
1
2
Miles
ARCADIS
WESTON SOLUTIONS
Seaside Munitions Response Area
FORA
Monterey County, California
Figure 1
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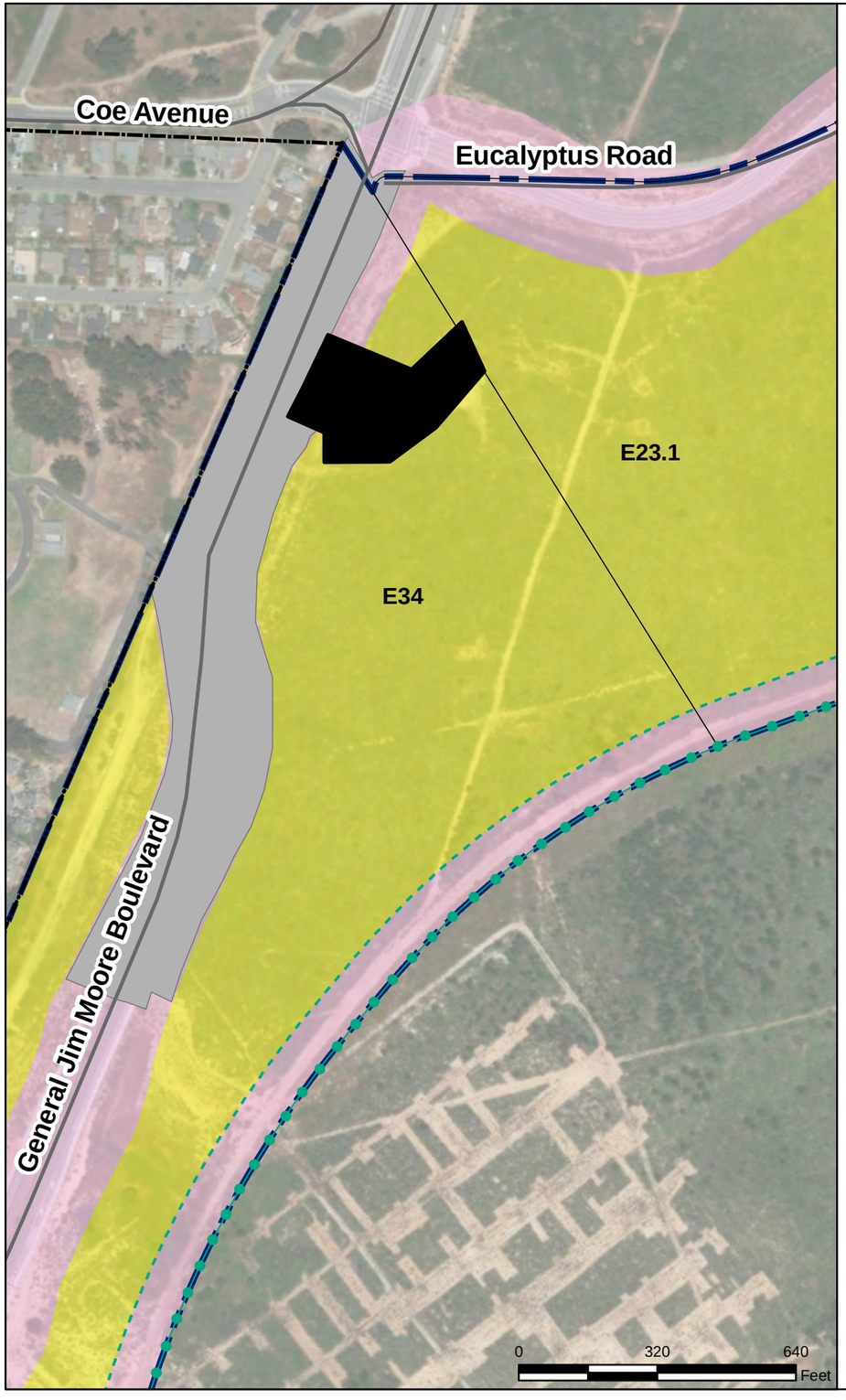
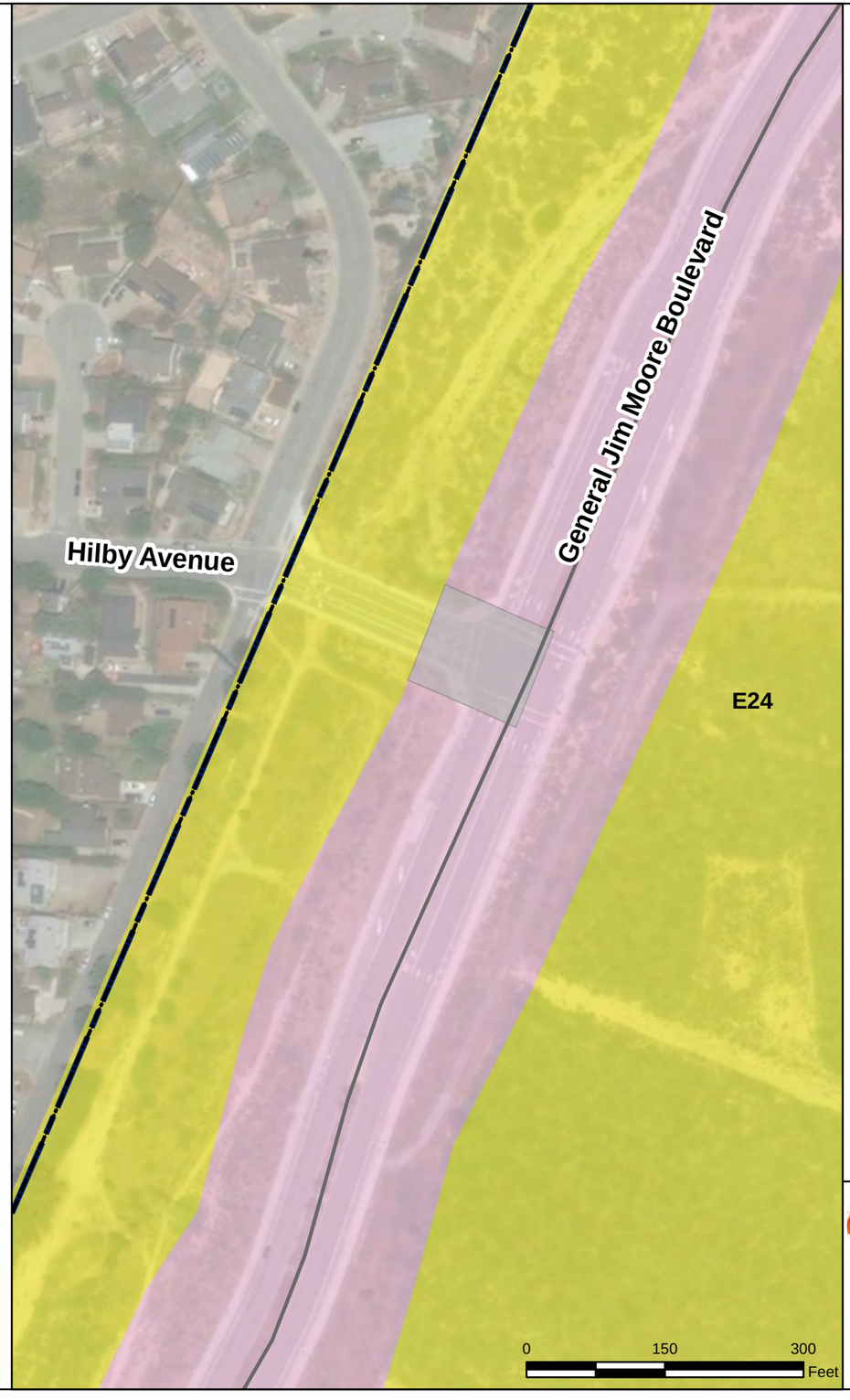


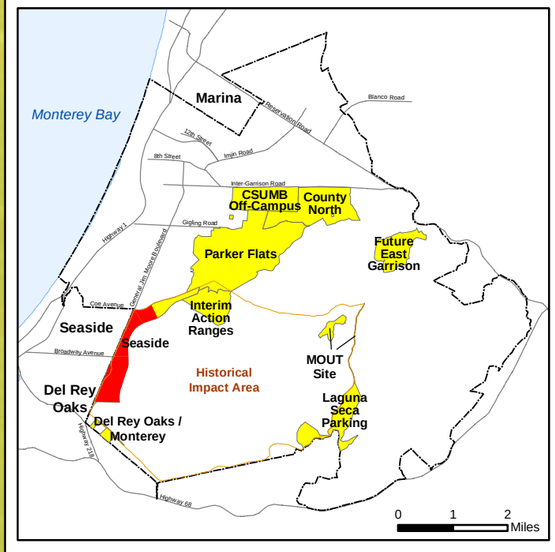


Legend

- Munitions Response Area
- Major Road
- E23.2 — USACE Parcel
- Former Fort Ord Boundary
- ASR Well Expanded Project Site
- CalAm Pipeline Installation Project Site

Designated Future Land Use

- Residential
- Non-Residential
- Borderland Interface
- 100-Foot Buffer from Borderland Interface



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Seaside MRA Reuse Plan

FORA
Monterey County, California

Figure 2

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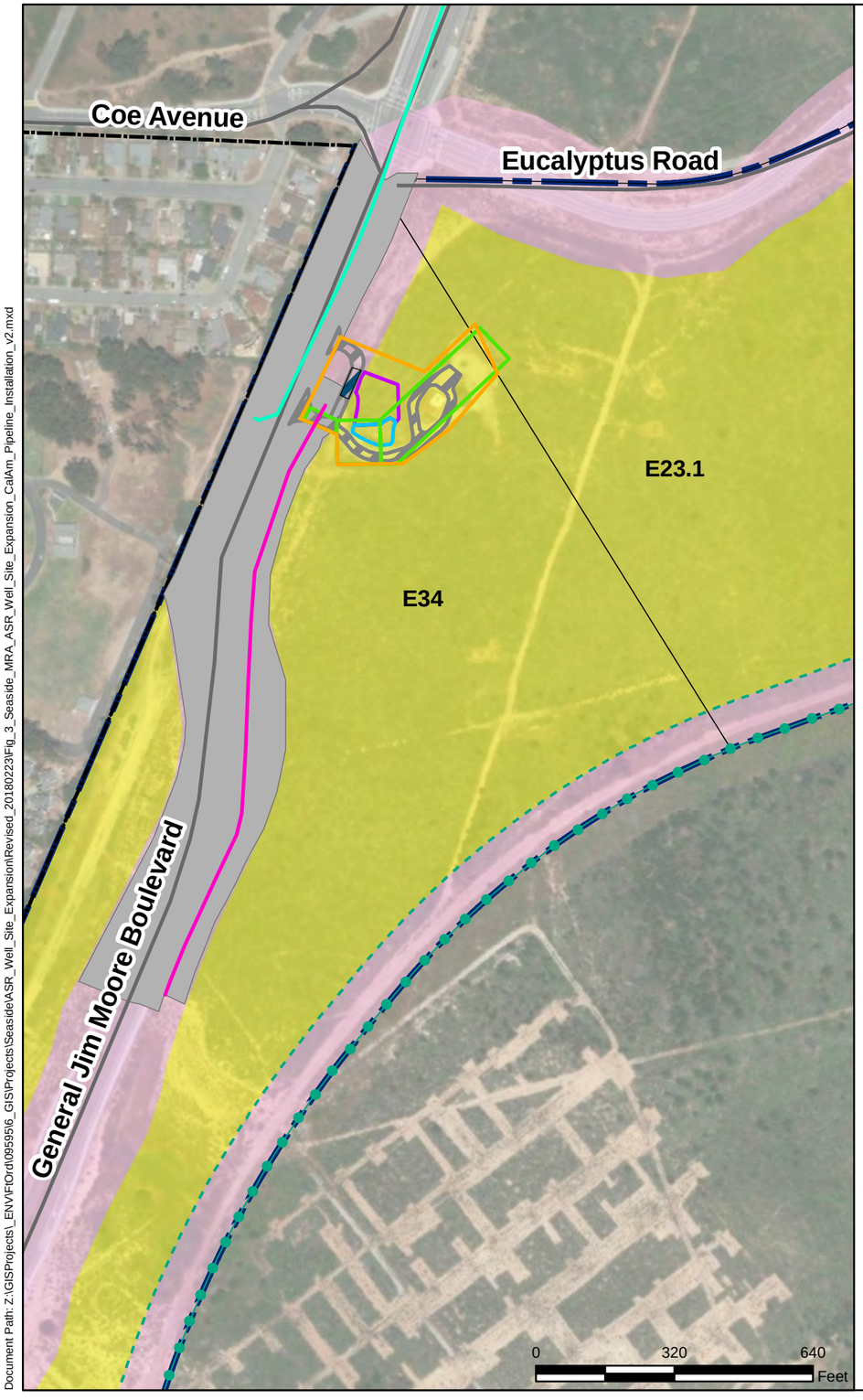
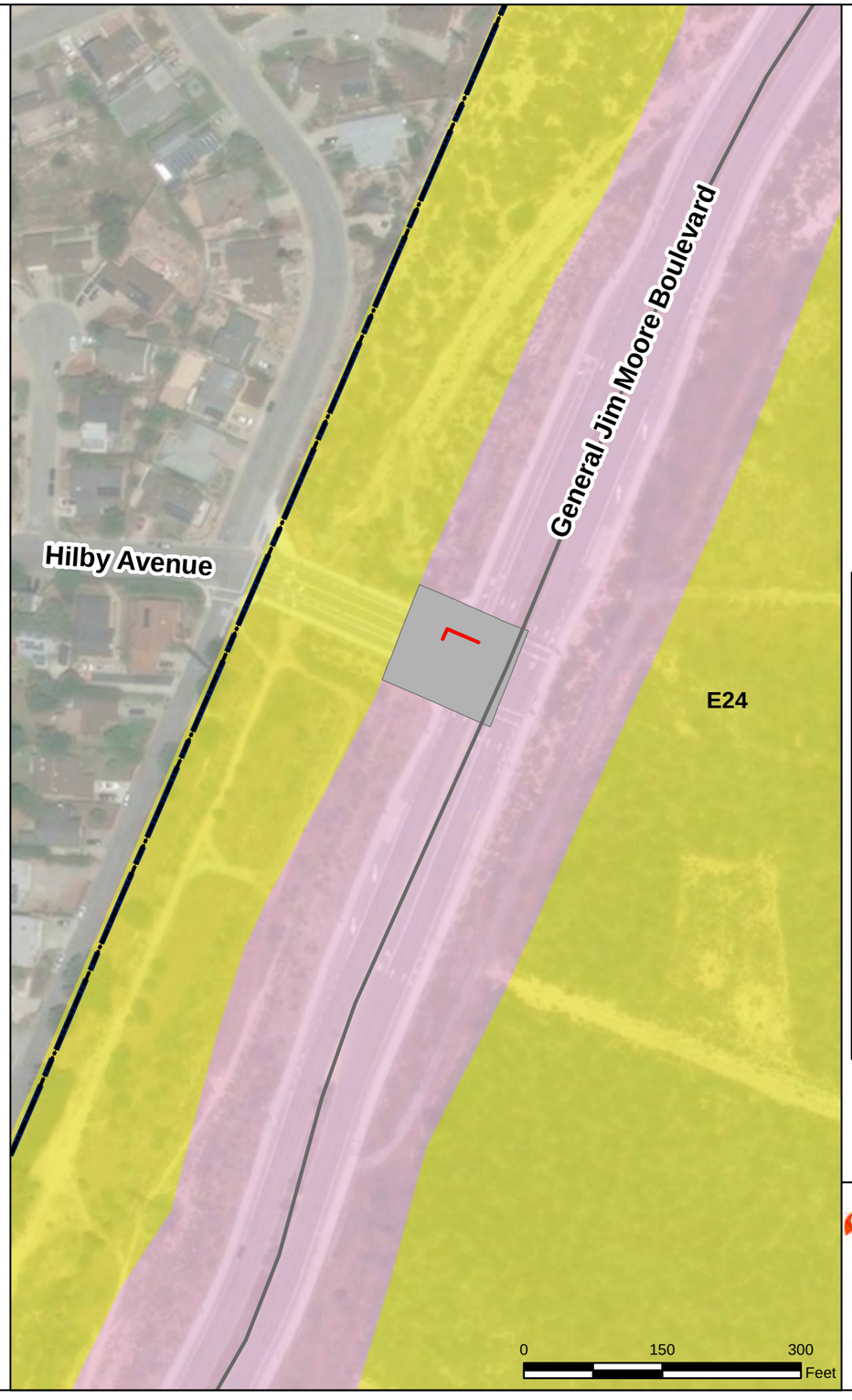


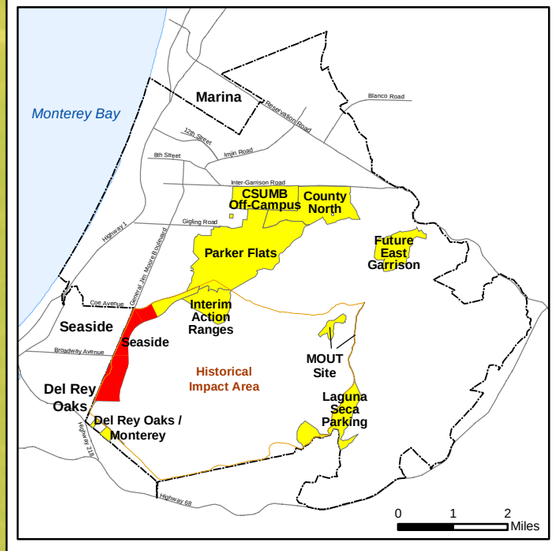


Legend

- Munitions Response Area
- Major Road
- E23.2 — USACE Parcel
- Former Fort Ord Boundary
- Access Road
- Chemical Loading Rack
- Basin 1
- Basin 2
- ASR Well Expansion Project Site
- Original ASR Well Project Site
- CalAm Pipeline Installation Project Site
- Proposed Temporary Pipeline (Aboveground)
- Proposed Transmission Main (Buried)
- Proposed Existing Pipeline Upsizing

Designated Future Land Use

- Residential
- Non-Residential
- Borderland Interface
- 100-Foot Buffer from Borderland Interface



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Seaside MRA

ASR Well Expansion and MPWS Project Sites

FORA
Monterey County, California

Figure 3

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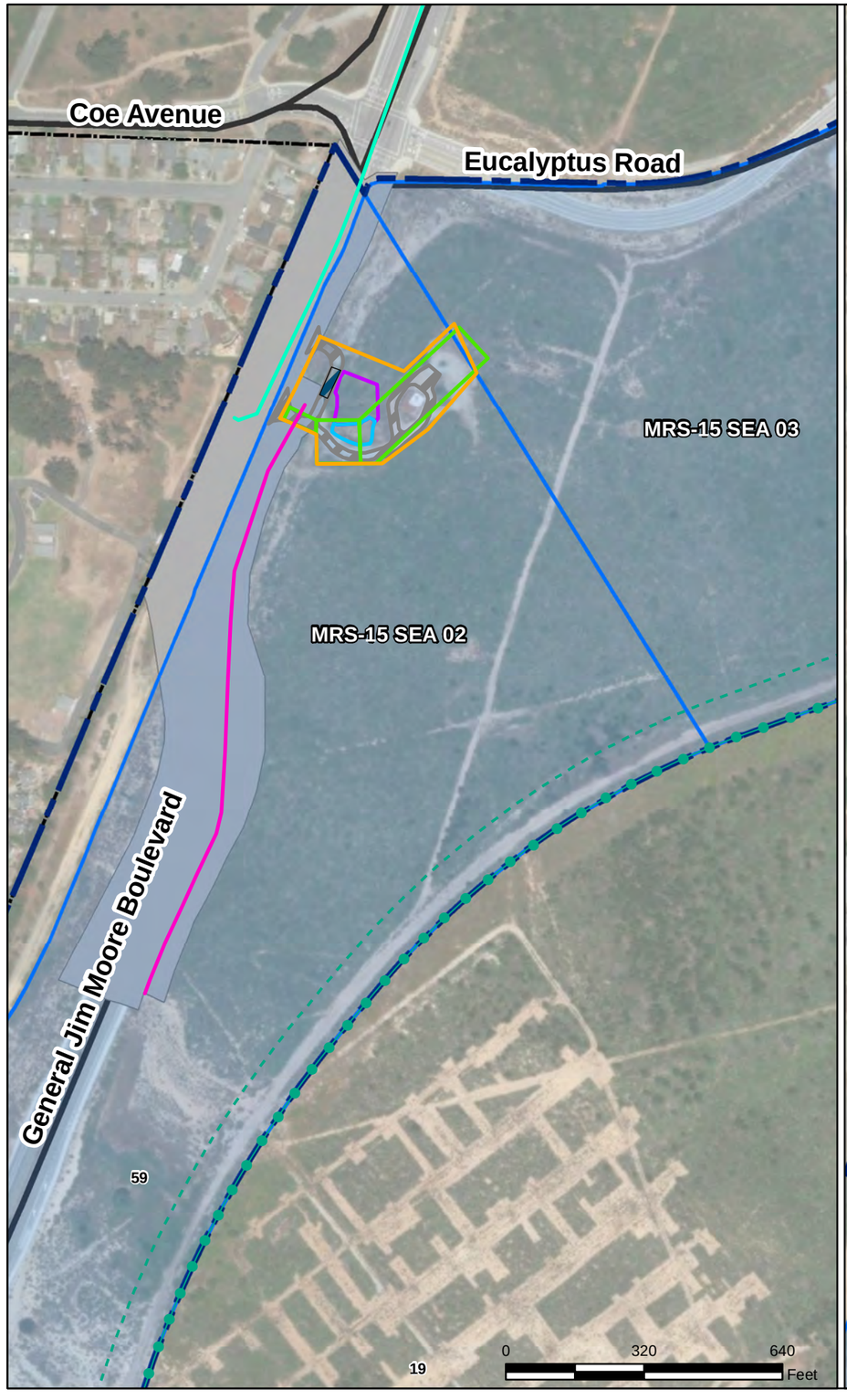
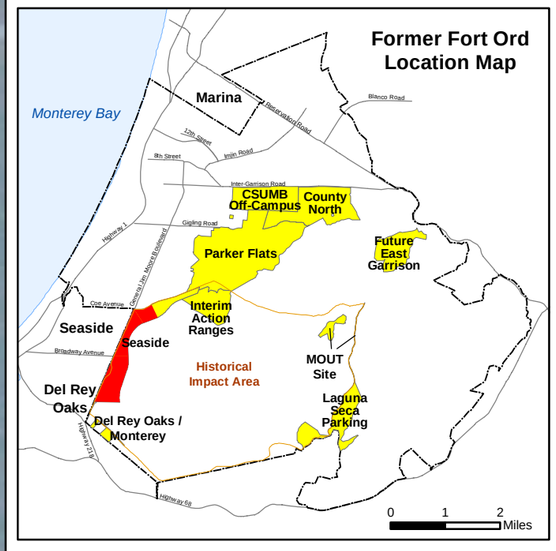


Legend

- Munitions Response Area
- MRS-15 SEA 01 — Munitions Response Site
- Major Road
- Former Fort Ord Boundary
- Access Road
- Chemical Loading Rack
- Basin 1
- Basin 2
- ASR Well Expansion Project Site
- Original ASR Well Project Site
- CalAm Pipeline Installation Project Site
- Proposed Temporary Pipeline (Aboveground)
- Proposed Transmission Main (Buried)
- Proposed Existing Pipeline Upsizing
- Borderland Interface
- 100-Foot Buffer from Borderland Interface



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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Seaside MRA

ASR Well Expansion and MPWS Projects

MRS Boundaries

FORA

Monterey County, California

Figure 4

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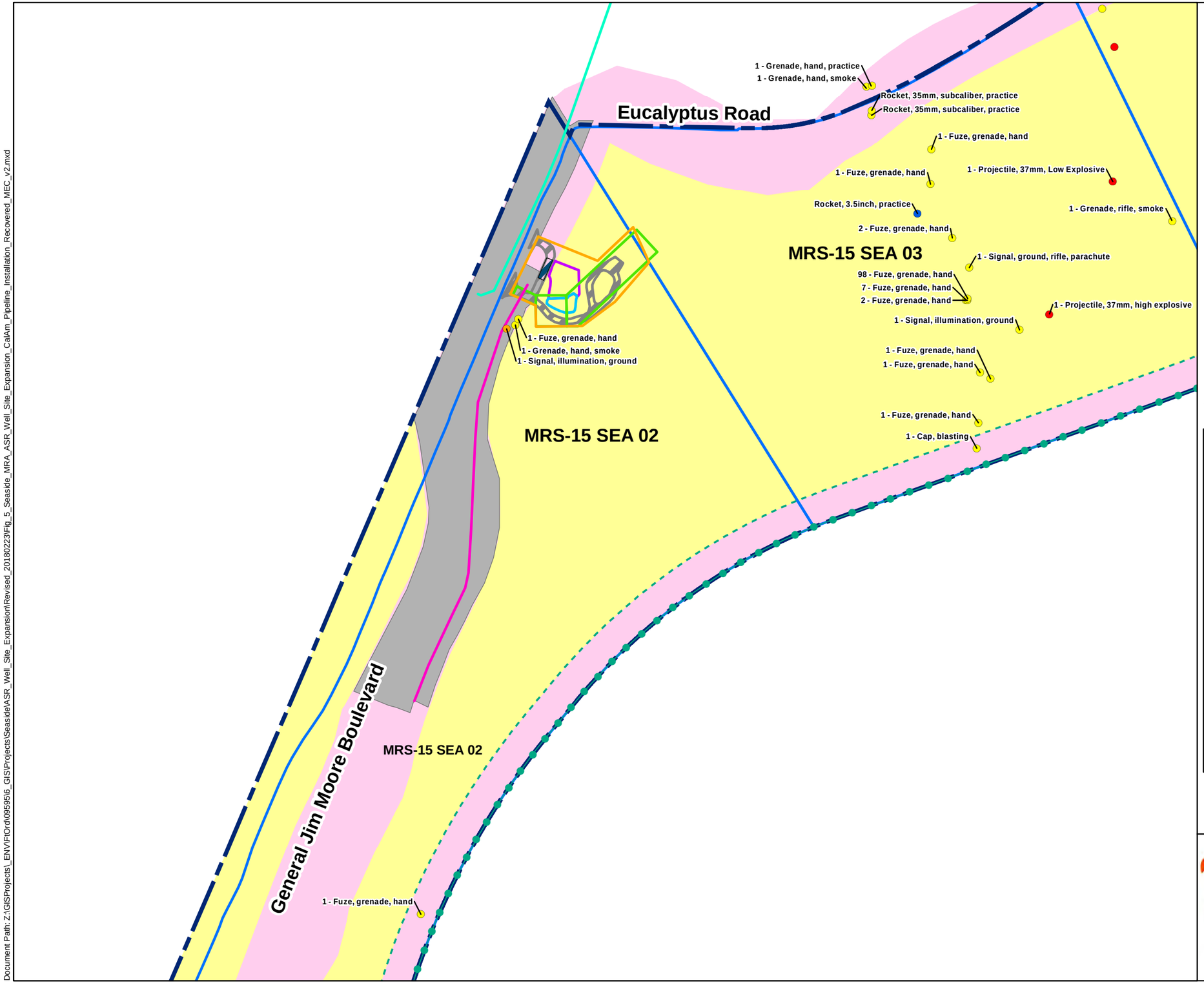
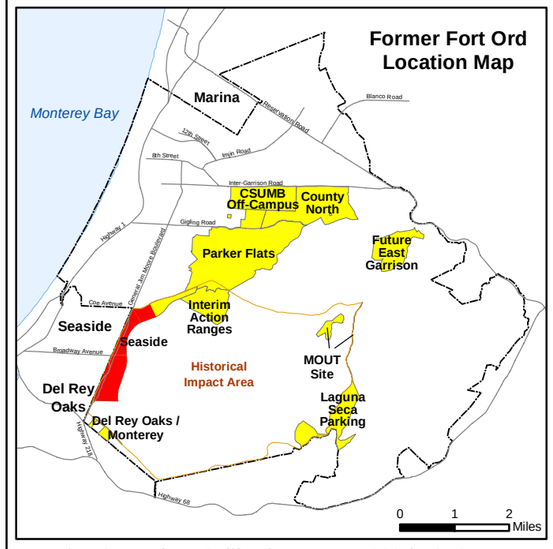


Legend

- Seaside MRA Boundary
- Munitions Response Site Boundary
- Access Road
- Chemical Loading Rack
- Basin 1
- Basin 2
- ASR Well Expansion Project Site
- Original ASR Well Project Site
- CalAm Pipeline Installation Project Site
- Proposed Temporary Pipeline (Aboveground)
- Proposed Transmission Main (Buried)
- MEC - 0
- MEC - 1
- MEC - 2
- MEC - 3

Designated Future Land Use

- Residential
- Non-Residential
- Borderland Interface
- 100-Foot Buffer from Borderland Interface



State Plane California IV, NAD 1983 (U.S. Survey Foot)

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0 320 640 Feet

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Seaside MRA

ASR Well Expansion and MPWS Projects

Recovered MEC

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Monterey County, California

Figure 5

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1 - Explosive, bulk, high explosive
1 - Fuze, grenade, hand
1 - Fuze, grenade, hand
2 - Projectile, 37mm, Low Explosive
1 - Projector, Livens
1 - Projectile, 4inch, stokes mortar, smoke, WP
1 - Signal, illumination
1 - Projectile, 4inch, stokes mortar, smoke, HC
1 - Projectile, 4inch, stokes mortar, practice
1 - Projectile, 4inch, stokes mortar, smoke, HC
1 - Projectile, 4inch, stokes mortar, screening smoke, FM
1 - Projectile, 75mm, shrapnel
1 - Projectile, 4inch, stokes mortar, smoke, HC
1 - Projectile, 4inch, stokes mortar, smoke, HC
1 - Projectile, 3inch, shrapnel
1 - Projectile, 3inch, Stokes Mortar, practice
1 - Projectile, 3inch, Stokes Mortar
1 - Projectile, 4inch, stokes mortar, screening smoke, FM
1 - Projectile, 3inch, Stokes Mortar, practice
1 - Projectile, 3inch, Stokes Mortar, practice
1 - Fuze, grenade, hand
1 - Projectile, 37mm, Low Explosive
1 - Fuze, grenade, hand
1 - Cartridge, 40mm, practice
1 - Cartridge, 40mm, practice
1 - Projector, Livens
2 - Grenade, hand, smoke
1 - Projectile, 3inch, Stokes Mortar, practice
1 - Projectile, 3inch, Stokes Mortar, practice
1 - Fuze, grenade, hand
21 - Fuze, grenade, hand
12 - Fuze, grenade, hand
50 - Fuze, grenade, hand
1 - Cartridge, 40mm, practice
1 - Projectile, 3inch, Stokes Mortar, practice
1 - Projectile, 75mm, shrapnel
1 - Projectile, 3inch, Stokes Mortar, practice
1 - Cartridge, 40mm, practice
1 - Cartridge, 40mm, practice
1 - Cartridge, 40mm, practice
1 - Projectile, 3inch, Stokes Mortar, practice
1 - Projectile, 3inch, Stokes Mortar, practice
1 - Cartridge, 40mm, practice
1 - Projectile, 4inch, stokes mortar, practice
1 - Fuze, grenade, hand
1 - Fuze, grenade, hand
1 - Cartridge, 40mm, practice
1 - Cartridge, 40mm, practice
1 - Cartridge, 40mm, practice
1 - Projectile, 4inch, stokes mortar, screening smoke, FM
1 - Projectile, 4inch, stokes mortar, practice
1 - Projectile, 4inch, stokes mortar, practice
1 - Fuze, grenade, hand
1 - Cartridge, 40mm, practice
1 - Cartridge, 40mm, practice
1 - Projectile, 3inch, Stokes Mortar, practice
1 - Fuze, grenade, hand
1 - Grenade, hand, practice
1 - Grenade, hand, fragmentation
3 - Projectile, 75mm, shrapnel
1 - Projectile, 3inch, Stokes Mortar, practice
1 - Simulator, grenade, hand
5 - Projectile, civilian, CS
5 - Smoke, Pot
1 - Fuze, trench mortar, point detonating
1 - Fuze, projectile, point detonating
1 - Projectile, 22mm, subcaliber, practice
1 - Projectile, 4inch, stokes mortar, screening smoke, FM
1 - Grenade, hand, incendiary, TH3
1 - Projectile, 75mm, shrapnel
5 - Projectile, 3inch, Stokes Mortar, practice
8 - Cartridge, 40mm, practice
1 - Projectile, 3inch, Stokes Mortar, practice
1 - Projectile, 3inch, Stokes Mortar, practice
1 - Projectile, 3inch, Stokes Mortar, practice
1 - Projectile, 3inch, Stokes Mortar, practice
1 - Projectile, 3inch, Stokes Mortar, practice
1 - Projectile, 3inch, Stokes Mortar, practice
1 - Fuze, projectile, combination
1 - Projectile, 3inch, Stokes Mortar, practice
1 - Projectile, 3inch, Stokes Mortar, practice
1 - Projectile, 3inch, Stokes Mortar, practice
1 - Projectile, 3inch, Stokes Mortar, practice
1 - Projectile, 4inch, stokes mortar, screening smoke, FM
1 - Grenade, hand, riot, CS
1 - Projectile, 3inch, Stokes Mortar, practice

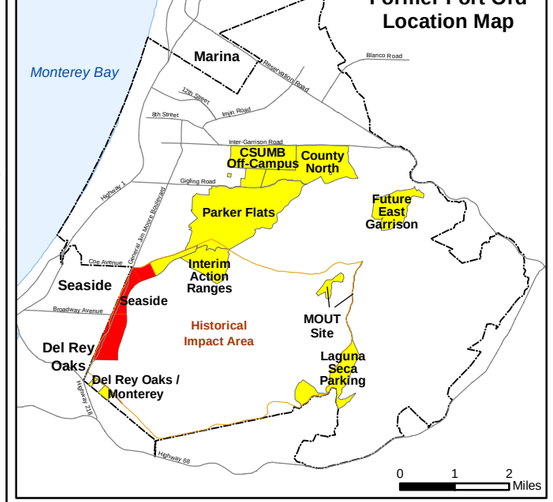
Legend

- Seaside MRA Boundary
- CalAm Pipeline Installation Project Site
- Proposed Existing Pipeline Upsizing
- MEC - 0
- MEC - 1
- MEC - 2
- MEC - 3

Designated Future Land Use

- Residential
- Non-Residential
- Borderland Interface
- 100-Foot Buffer from Borderland Interface

Former Fort Ord Location Map



State Plane California IV, NAD 1983 (U.S. Survey Foot)

N

0 220 440 Feet

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Seaside MRA
MPWS Project
Recovered MEC
FORA
Monterey County, California

Figure 6

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Attachment A
Attachment A-1 ASR Well Site Expansion Soils Management Plan
Attachment A-2 Monterey Peninsula Water Supply Project Soils Management Plan

2017

ASR Expansion

SOIL MANAGEMENT PLAN

MAUREEN HAMILTON

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Introduction

The Santa Margarita Aquifer Storage and Recovery (ASR) site is located on former Fort Ord land, now under the control of the Fort Ord Reuse Authority (FORA), at 1910 General Jim Moore Boulevard (GJMB) near the southeast corner of GJMB and Eucalyptus Road. The Assessor's Parcel Number is 031-211-001-000.

The site currently contains two ASR wells, one monitoring well, one control building, and one 245,000-gallon backflush percolation basin sized to accommodate two ASR wells. A project to convey backflush water from the nearby Seaside Middle School ASR site to the backflush percolation basin at Santa Margarita ASR site was installed in 2011; the need for which was founded by safety requirements of the school property. Additional ASR wells are planned for Fitch Park (as a part of a separate project than the project discussed in this document), which will require additional backflush percolation basin capacity and drinking water disinfection capabilities at the Santa Margarita site.

In order for all of the ASR sites to be fully operational, the Santa Margarita ASR site must be expanded to accommodate an expanded backflush percolation basin, connection from the ASR wells to additional existing water utility pipes, and drinking water disinfection facilities. The site expansion requires an additional approximately 0.8 acres, for a new site size of approximately 1.9 acres.

The site expansion will enable completion of the Santa Margarita ASR site construction. Completion work, included in this soil management plan, includes expansion of the existing backflush pit / percolation basin, placement of a truck offloading pad, installation of underground piping, fencing, a sound attenuation enclosure at each ASR well, and landscaping. Depending on available funding, a backup well may be installed. Additional non-soil-disturbing activities will include instrumentation/controls improvements, and disinfection storage and dispensing equipment inside the building.

This work plan describes the only the expansion activities to support soil disturbing Right of Entry permit requirements.

Project Overview

The project work, with soil disturbing activities described, is presented as follows:

- Second Ingress/Egress: clear and grub the second ingress and road. Grading, scarifying, and compaction may be required for this task.
- Underground Piping: install underground piping by open trench. Cut soil from the trench will be used for fill and compacted. Soil in excess of fill will be retained on-site.
- Expand Backflush Percolation Basin: excavate the expanded area. The existing basin will be scarified at the end of the excavation to ensure the percolation rate is not degraded. Soil in excess of fill will be retained on-site and used to create a 6-foot high earth berm for visual screening from GJMB.
- Disinfectant Offloading Facilities: excavation for a foundation may be required. Trench and fill work will be required for underground piping, and electrical and instrumentation conduits.

- Berm: soil compaction will occur throughout the project as soil is excavated and moved to the berm site.
- Fencing: post holes will be dug.
- Sound Attenuation Enclosure: detailed design will determine whether pile, trench or spread footing will be utilized as wall foundation. Compaction of soils will be performed to stabilize native soils and prevent differential settlement of the structures.
- Road: grading, scarifying, and compaction may be required.
- Landscaping: excavate or dig as required for decorative entry. Dig holes for plantings.
- An optional backup well may be constructed as a part of this project, depending on funding.

Maintenance work, with soil disturbing activities described, is presented as follows:

- Excavation for pipe repair, replacement, or rerouting.
- Excavation for valve and appurtenance repair, replacement, or relocation.
- Excavation for electrical work repair, replacement, or relocation.
- Scarifying the backflush basin
- Landscaping plant replacement requiring excavation
- Irrigation system repair, replacement, or relocation may require excavation.
- Fence repair requiring excavation
- Road repair requiring excavation, scarifying, grading, or compaction
- Installation of support structure in the event loads or standards change, requiring excavation, scarifying, grading, or compaction.

Site Access

Construction vehicles and equipment (including drilling rigs) will access the work area. Workers will enter the property from GJMB, turning east onto an existing ingress approximately 750 feet southeast of the intersection of GJMB and Eucalyptus Road. When the second driveway is created, vehicles and equipment may use the new egress as an exit only onto northbound GJMB.

GJMB will not be fully blocked during any part of the project construction.

Soils Management Overview

UXO Awareness Training and Monitoring will be performed prior to commencement of construction. FORA UXO contractor requirements will be followed by this project. The Soils Management Plan will be incorporated into all construction contracts for this project. The project site will be clearly delineated to facilitate accurate separation of soils.

The potential presence of underground utilities or other potential hazards in the area will

be evaluated in coordination with FORA and UXO contractors. The Underground Service Alert system will be contacted prior to excavation.

The amount of soil cut for the project work is estimated at 4,559 CY before shrinkage, the entirety of which will be used for fill and construction of a berm on the site. No soil will be imported, and no soil will be exported from the site.

In general, soil will be moved from excavated areas to the berm location on the project site. As excavated soils are relocated to the new berm, they will be placed and compacted in lifts of 12 inches or less.

Ground disturbing and intrusive activities related to maintenance and/or repair of the Santa Margarita ASR facilities.

Detailed Task Activities

Contractors have not yet been identified and will be selected according to MPWMD protocol during or after the ROE process. The sequencing of field activities will be finalized during construction planning after the detailed design is finalized and contractors have been selected.

The following sections describe soil disturbing activities in greater detail.

Soil Clearance Demarcation

- The project site will be delineated using wooden ground stakes (no metal will be used).
- Equipment may include a manual hammer.
- Disturbed soil is expected to be negligible, remaining in place.

Second Ingress/Egress

- Clear and grade a second access point and road to allow underground pipe installation to proceed at the existing access point, and to allow disinfectant delivery trucks passage.
- Equipment may include road grader, tracked excavator, bulldozer, wheeled backhoe, wheeled backhoe loader, track-hoe, skid-steer loader, and roller compactor.
- Replacement of the sidewalk with a new driveway apron. Activities may include hand staking, hand-excavation, and grading by backhoe loader and by hand.
- Cut soil will be stockpiled on site, and placed within the project site boundary.

Underground Piping

- Underground pipelines will be installed under the existing access road. The pipelines will connect the ASR wells to two 30-inch diameter and one 16-inch diameter water mains existing in the GJMB right-of-way.
- Construction will be by open-trench method, to depths up to 10 feet below finished

grade.

- Trench construction equipment may include a wheeled backhoe loader, skid-steer loader, and tracked excavator.
- Cut soil will be stockpiled on site, and placed within the project site boundary.
- The soil material is typically poorly-graded sand, which will be used for fill material.
- Cut soil from land cleared of UXO to the same or higher standard will be returned to the trench as fill material.
- Compaction equipment may include a small roller and hand tampers.

Backflush Percolation Basin Expansion

- The backflush percolation basin size will be sized to accept 630,024 gallons with 2-feet freeboard, or 741,381 gallons with 1-foot freeboard. Approximate basin dimensions are 190 feet by 130 feet.
- The backflush percolation basin will be excavated using open-trench method, to depth up to 10 feet below top surface grade.
- A wheeled backhoe loader, skid-steer loader, tracked excavator, and traced crawler loader may be used.
- Cut soil will be stockpiled on site, and placed within the project site boundary.
- Existing backflush piping and equipment at the backflush percolation basin may need to be temporarily moved or supported. This work will be specified in the final detailed design. Temporary support structure installation may require the use of hand digging tools. Cut soil would be moved and stored as part of the excavation soil, would be returned at the end of backflush percolation basin work, and would result no net soil export or import.
- Soil compaction may be required on the edges of the basin, and will be accomplished by hand tampers and a small roller compactor.
- The bottom of the entire basin will be scarified to ensure adequate percolation capacity. Equipment may include back hoe, track-hoe, and hand-operated rototiller. Soils are not relocated as a part of this process.

Disinfectant Offloading Facilities

Trench

- Construct a trench for electrical and instrumentation conduit from the existing control building to the truck offloading facility.
- Construction will be by open trench method, to depths up to 6.5 feet below finished grade.
- Trench construction equipment may include a wheeled backhoe loader, skid-steer

loader, and tracked excavator.

- Cut soil will be stockpiled on site, and placed within the project site boundary.
- The soil material is typically poorly-graded sand, which will be used for fill material.
- Cut soil from land cleared of UXO to the same or higher standard will be returned to the trench as fill material.
- Compaction equipment may include a small roller compactor and hand tampers.

Foundation

- Excavate and grade for disinfectant delivery offloading foundation.
- Cut soil, if any, will be stockpiled on site and placed within the project site boundary.
- Equipment used on site may be a wheeled backhoe, skid-steer loader, small roller compactor, and hand compaction equipment.

Site Improvements

Berm

- Soil in excess of fill will be utilized to create a berm.
- Compaction equipment may be a wheeled backhoe loader, skid-steer loader, small roller compactor, and hand tamper.

Fencing

- Fence construction will require setting fence posts to a depth of up to 4-feet below finished grade.
- Digging equipment may include a skid-steer loader, wheeled earth auger, hand-held auger, and hand shovel.
- Disturbed soil will be distributed within project site boundary.

Sound Wall

- Construction of the wall foundation may require excavation, grading, compaction, and digging. The type of foundation will be determined in the final detailed design.
- Equipment may include a tracked excavator, wheeled backhoe, skid-steer loader, wheeled earth auger, hand-held auger, hand shovel, small roller compactor, and hand tamper equipment.
- Cut soil will be stockpiled on site, and placed within the project site boundary.

Road

- The existing dirt road will be graded, compacted, and paved.
- Grading equipment may include a tracked excavator, skid-steer loader, motor grader, bulldozer, wheeled backhoe, track hoe, and wheeled grader.

- Compaction equipment may include a roller compactor.
- Paving equipment may include dump trucks with spreader boxes, roller compactors and paving machines.
- Cut soil will be stockpiled on site, and placed within the project site boundary.

Landscaping

- Holes for landscape plants will be dug.
- Digging equipment may include a wheeled earth auger, hand-held auger, and hand-shovel.
- Irrigation, if any, is expected to be located on the ground, except for irrigation main lines; digging equipment may include a skid-steer loader, hand-operated trencher, and hand shovel.
- If masonry walls are required for landscaping purposes, the foundation may require excavation, grading, compaction and digging. The type of foundation, if any, will be determined in the final detailed landscape design. Ground disturbing equipment to construct wall foundation may include a tracked excavator, wheeled backhoe, wheeled earth auger, hand-held auger, hand shovel, small roller compactor, and hand tamper.
- Disturbed soil will be distributed within the project site boundary.

Optional Backup Well

- Drill and construct one aquifer storage and recovery backup well to a depth of approximately 800 feet below ground surface.
- Cut soil will be stockpiled on site, and placed within the project site boundary.

Maintenance and Repair of Santa Margarita Site Infrastructure

- Excavation for pipe repair, replacement, or rerouting.
- Excavation for valve and appurtenance repair, replacement, or relocation.
- Excavation for electrical work repair, replacement, or relocation.
- Scarifying the backflush basin
- Landscaping plant replacement requiring excavation
- Irrigation system repair, replacement, or relocation may require excavation.
- Fence repair requiring excavation
- Road repair requiring excavation, scarifying, grading, or compaction
- Installation of support structure in the event loads or standards change, requiring excavation, scarifying, grading, or compaction.
- Disturbed soil will be stockpiled on-site if stockpiling is required, returned to the on-

site location that was disturbed, with any excess being distributed within the site boundary.

Soil Disturbance Calculations

Estimated amounts of soil to be disturbed are summarized in the following table.

Task	Scarified Soil (CY)	Excavated Soil (CY)	Total Disturbed Soil (CY)	Uncompacted Fill (CY)
Trenches for Underground Piping and Disinfectant Offloading Facilities	0	1,080	1,080	(1,150)
Backflush Percolation Basin Expansion	653	3,080	3,733	
Disinfectant Offloading Facilities	197	49	246	
New Road, Second Ingress/Egress	450	112	562	(50)
Existing Road	395	0	395	
Fencing	5	5	10	
Sound Wall	5	5	10	
Landscaping	5	5	10	
Berm	0	0	0	(3,137)
Subtotal	**1,709**	**4,337**	**6,046**	**(4,337)**
Optional Backup well	0	222	222	(222)
Total	**1,709**	**4,559**	**6,268**	**(4,559)**

Table 1 Soil Disturbance by Task

Schedule

The soil disturbing activities will begin after water year 2018 injection season, approximately May 15, 2018.

The amount of time required to complete the program will depend on funding, City of Seaside agreements, and operational requirements. Assuming some overlap of activities, the project is estimated to take approximately eight to twelve months to complete; however, the work will be divided into time periods over two years in order to minimize impact on operations. Soil disturbing activities are expected to occur the summer of 2018 and the summer of 2019. Activities that would occur in 2019 are expected to be fencing, road work, landscaping, and an optional backup well.

Multiple construction contracts will be awarded at different times, requiring at least 5 UXO Awareness Training sessions.

On-going maintenance activities will commence at the completion of facility construction and commissioning, and continue indefinitely into the future.

The following table provides estimated duration of soil disturbing activities.

Task	**Soil Disturbing Activity**	**Duration (work days)**
Second Ingress/Egress	Clearing and grading	5
Underground Piping	Trenching	5
Underground Piping	Fill and Compact	4
Expand Backflush percolation basin	Excavating	10
Expand Backflush percolation basin	Scarify	1
Disinfectant Offloading Facilities	Trenching	3
Disinfectant Offloading Facilities	Fill and compact	2
Disinfectant Offloading Facilities	Excavate and grade for foundation	1
Site Improvements Berm	Compaction	10
Site Improvements Sound Wall	Excavate and grade for foundation	2
Site Improvements Optional Backup Well	Dig well and install well casing to approximately 55 feet below ground surface	2
Site Improvements Fencing	Dig post holes	2
Site Improvements Road	Grade, scarify, compact	2
Site Improvements Landscaping	Dig plant holes	1
Total		**37**

Table 2 Project Task Duration

Appendix A: Figures

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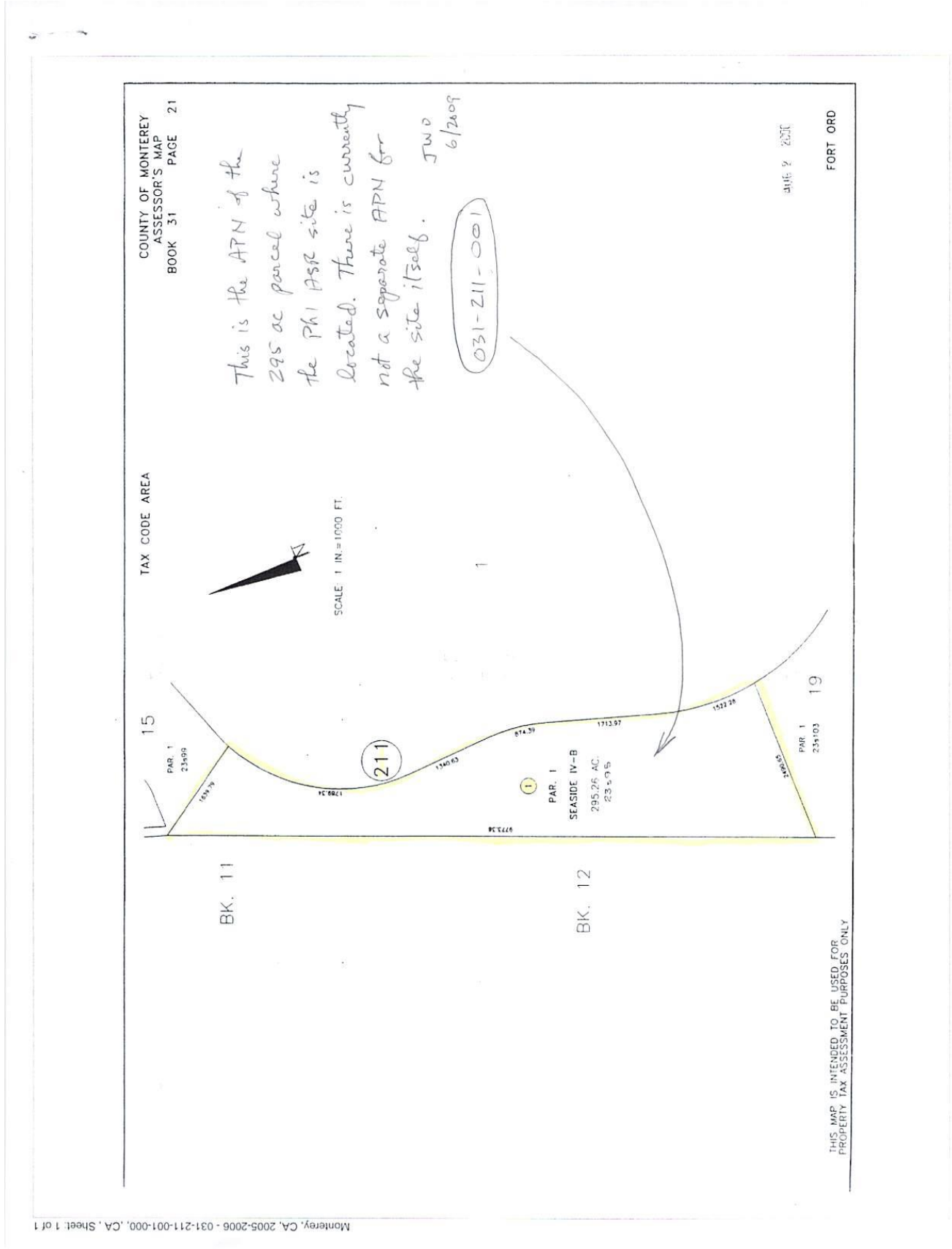
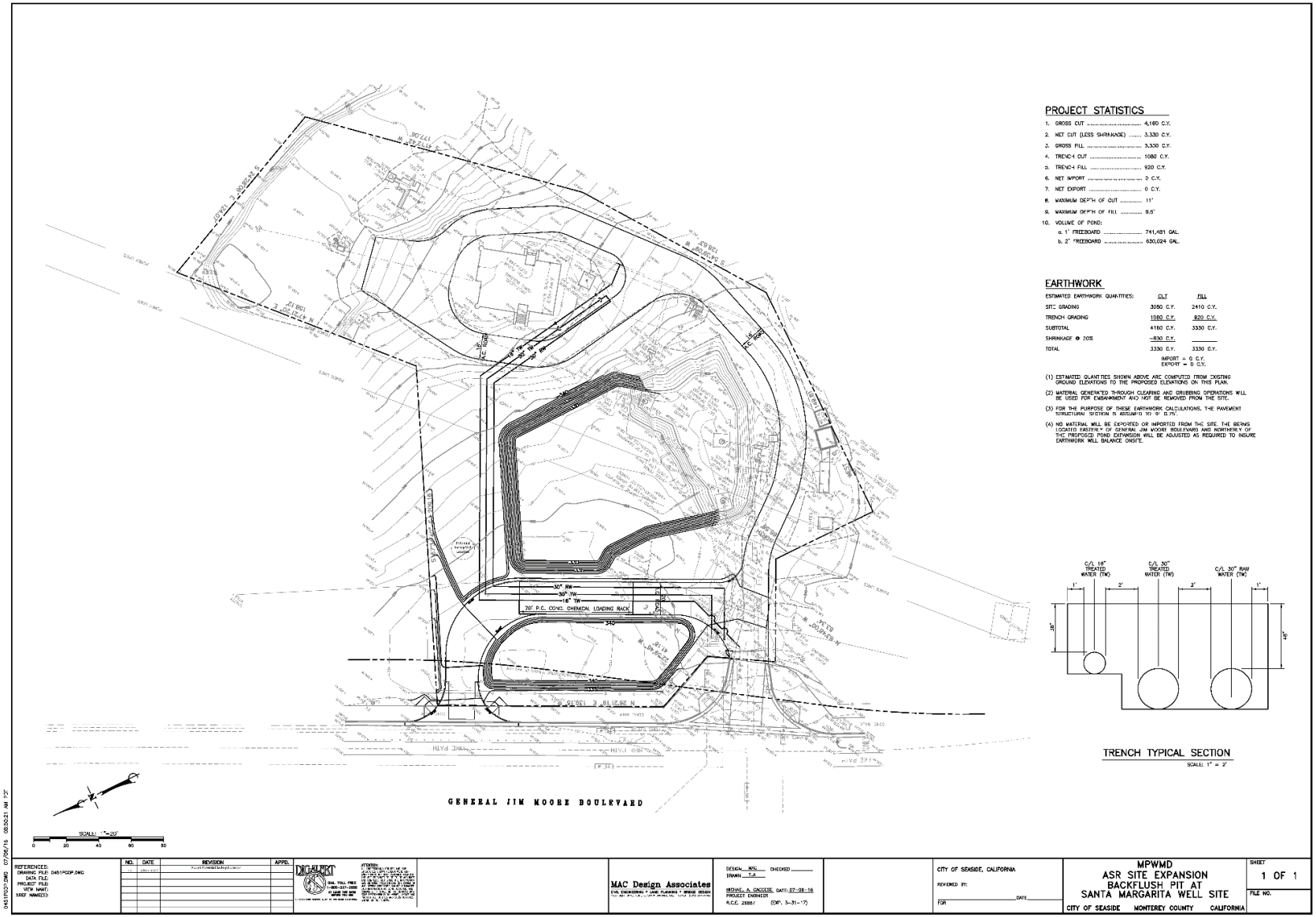

COUNTY OF MONTEREY
ASSESSOR'S MAP
BOOK 31 PAGE 21
TAX CODE AREA
SCALE 1 IN.=1000 FT.
This is the APN of the 295 ac parcel where the Ph1 ASR site is located. There is currently not a separate APN for the site itself.
JWD 6/2009
031-211-001
FORT ORD
15
19
211
PAR. 1
SEASIDE IV-B
295.26 AC.
BK. 11
BK. 12
THIS MAP IS INTENDED TO BE USED FOR PROPERTY TAX ASSESSMENT PURPOSES ONLY
Monterey, CA, 2005-2006 - 031-211-001-000, ,CA , Sheet 1 of 1

N
Eucalyptus
General Jim Moore Blvd
Santa Margarita Well Site
EasementConstruction
EasementA
EasementB
EasementAccess
Proposed New Operating Easement
0 25 50 100 150 200
Feet
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community


PROJECT STATISTICS
1. GROSS CUT ..... 4,160 C.Y.
2. NET CUT (LESS SHRINKAGE) ..... 3,330 C.Y.
3. GROSS FILL ..... 3,330 C.Y.
4. TRENCH CUT ..... 1080 C.Y.
5. TRENCH FILL ..... 920 C.Y.
6. NET IMPORT ..... 0 C.Y.
7. NET EXPORT ..... 0 C.Y.
8. MAXIMUM DEPTH OF CUT ..... 11'
9. MAXIMUM DEPTH OF FILL ..... 9.5'
10. VOLUME OF POND:
a. 1' FREEBOARD ..... 741,481 GAL.
b. 2' FREEBOARD ..... 630,024 GAL.
EARTHWORK
ESTIMATED EARTHWORK QUANTITIES: CUT FILL
SITE GRADING 3080 C.Y. 2410 C.Y.
TRENCH GRADING 1080 C.Y. 920 C.Y.
SUBTOTAL 4160 C.Y. 3330 C.Y.
SHRINKAGE @ 20% -830 C.Y.
TOTAL 3330 C.Y. 3330 C.Y.
IMPORT = 0 C.Y.
EXPORT = 0 C.Y.
(1) ESTIMATED QUANTITIES SHOWN ABOVE ARE COMPUTED FROM EXISTING GROUND ELEVATIONS TO THE PROPOSED ELEVATIONS ON THIS PLAN.
(2) MATERIAL GENERATED THROUGH CLEARING AND GRUBBING OPERATIONS WILL BE USED FOR EMBANKMENT AND NOT BE REMOVED FROM THE SITE.
(3) FOR THE PURPOSE OF THESE EARTHWORK CALCULATIONS, THE PAVEMENT STRUCTURAL SECTION IS ASSUMED TO BE 0.75'.
(4) NO MATERIAL WILL BE EXPORTED OR IMPORTED FROM THE SITE. THE BERMS LOCATED EASTERLY OF GENERAL JIM MOORE BOULEVARD AND NORTHERLY OF THE PROPOSED POND EXPANSION WILL BE ADJUSTED AS REQUIRED TO INSURE EARTHWORK WILL BALANCE ONSITE.
C/L 18" TREATED WATER (TW)
C/L 30" TREATED WATER (TW)
C/L 30" RAW WATER (TW)
TRENCH TYPICAL SECTION
SCALE: 1" = 2'
GENERAL JIM MOORE BOULEVARD
30" RW
30" TW
18" TW
70' P.C. CONC. CHEMICAL LOADING RACK
MAC Design Associates
CITY OF SEASIDE, CALIFORNIA
MPWMD
ASR SITE EXPANSION
BACKFLUSH PIT AT
SANTA MARGARITA WELL SITE
CITY OF SEASIDE MONTEREY COUNTY CALIFORNIA
SHEET 1 OF 1

Monterey Peninsula Water Supply Project Soils Management Plan

Right-of-Entry Requirements

For the purposes of conducting trenching for pipeline installation within a portion of General Jim Moore Boulevard within the area covered under the FORA Environmental Services Cooperative Agreement (ESCA), AECOM seeks a Type 3 Right of Entry on behalf of California American Water (CalAm) and its installation contractors.

Because of the history of military activities on the former Fort Ord, the FORA Right-of-Entry (ROE) requirements focus on ground disturbing activities under the ESCA. Ground disturbing activities will be subject to Munitions Recognition and Safety Training, monitoring, and construction support by FORA contractors. Specific ROE application requirements include: location and description of ground disturbing and other work activities; calculations of the amount of soil to be disturbed; development of a soils management plan; and the schedule (dates) over which activities will occur.

The City of Seaside has established operating procedures for any project involving soil disturbance within the former Fort Ord lands (Chapter 15.34, Seaside Municipal Code, also referred to as the Ordnance Ordinance). The procedures are applicable to projects that disturb greater than 10 cubic yards (CY) of soil on certain parcels identified as having munitions or explosives of concern. In addition to the requirements for soil management, other City permits and approvals may be necessary for implementation of the Project.

A traffic control plan (TCP) will be prepared and approved by the City of Seaside and FORA prior to scheduling and initiating trenching activities within public roadways. Trenching and stockpiling may use both southbound lanes, requiring each of the two northbound lanes to temporarily serve as single north- and south-bound lanes during construction.

Summary of Ground-disturbing Activities

Following the acquisition of permits, ROE, Munitions Recognition and Safety Training and implementation of an approved traffic control plan and stormwater pollution prevention plan (SWPPP) best management practices (BMPs), ground-disturbing activities associated with the proposed open-trench pipeline installation sequence would typically include:

- Cutting and removal of the asphalt surface along the pipeline alignments;
- Excavating the trench and stockpiling soils adjacent to the trench;
- Preparing and installing pipeline sections and other pipeline components;
- Backfilling with extracted sandy soils considered suitable as fill or bedding material;
- Compaction of backfilled materials; and
- Paving the pipeline alignments, as appropriate.

A conventional backhoe, excavator, or other mechanized equipment will be used to excavate trenches. The typical trench width will be approximately 6 feet; however, other pipeline components could require wider excavations. Work crews will install temporary trench boxes or shoring to stabilize the pipeline trenches and prevent the walls from collapsing during construction. After excavating the trenches, the contractor will line the trench with pipe bedding; that is, sand or other appropriate material shaped to support the pipeline. Imported material, when required, will comply with the Department of Toxic Substance Control (DTSC) Information Advisory for Clean Imported Fill Material.

DRAFT

Construction workers will then place pipe sections (and pipeline components, where applicable) into the trench, weld the sections together as trenching proceeds, and then backfill and compact the trench with all or most of the extracted soils. While not anticipated to be required, if extracted soils are found to be unsuitable as backfill, these soils would be spread on exposed grounds within the project site area and only within the unpaved General Jim Moore Boulevard roadway corridor and non-residential land use area devoid of protected flora and fauna (Figure 1). Open-trench construction will generally progress at a rate of about 150 to 250 linear feet per day. Steel plates will be placed over open trenches to maintain vehicular access to private driveways and during non-working hours. Pipeline installation will occur in existing roadways requiring temporary lane closures, per a city of Seaside approved Traffic Control Plan.

Location of Ground-disturbing Activities

The location of ground-disturbing activities includes excavation of an approximately 6-foot (72-inch) wide trench for a continuous 660-ft long pipeline segment for the Monterey Peninsula Water Supply Project (MPWSP) Transmission Main within southbound General Jim Moore Boulevard and located just south of the intersection with Coe Avenue (see Figure 2).

Two proposed Aquifer Storage and Recovery (ASR) wells are proposed outside the ESCA-managed area. In order to accommodate the temporary ASR well development and testing groundwater discharge volumes for the MPWSP, a temporary aboveground pipeline will be connected to an existing buried discharge pipeline and placed on the unpaved area immediately east of the sidewalk on General Jim Moore Boulevard (see Figure 3). Other than minor contouring to ensure the temporary pipeline stays in place, no substantive grading is required. BMPs will be used to avoid erosion of the graded areas.

Another similar open trench may be proposed for installing a 50-ft long pipeline segment within the intersection of General Jim Moore Boulevard and Hilby Street (see Figure 4).

Site Access

Site access to all work areas is via General Jim Moore Boulevard and adjacent portions of Hilby Street.

Soil Disturbance

The soil materials on Fort Ord are generally poorly-graded sands, which are suitable for use as pipe bedding and structural backfill. Therefore, it is anticipated that imported fill material will not be required. However, imported material, if required, will comply with the Department of Toxic Substance Control (DTSC) Information Advisory for Clean Imported Fill Material. Construction will be by open-trench method, approximately 72-inches wide and to depths up to 72-inches (6-feet) below finished grade using wheeled backhoe or tracked excavator. Soil excavation volumes expressed in cubic yards (CY) are shown in the table below.

Location	Type of Excavation	Total Volume (CY)	Estimated Start (Mo/Year)	Estimated Duration (weeks)
GJMB (Coe)	Pipeline Installation	6,780.0	January/2019	8
	Appurtenances	36.0	January/2019	3
Hilby (GJMB)	Pipeline Installation*	22.0	April/2018 (if required)	2

DRAFT

As previously described, excavated soils will be stockpiled adjacent to the trench corridor and returned to the trench as bedding and backfill following pipeline installation. Compaction will be by small roller or hand tampers, resulting a minimal, if any, excess spoils. Water trucks will spread water for dust control and compaction. If excess trench spoils remain, they will be spread within the nearest unpaved General Jim Moore Boulevard roadway corridor and non-residential land use area that is devoid of protected flora or fauna.

Construction will be managed to maintain a traffic lane capable of allowing a fire truck to pass during construction activities. Backfilled soils will be compacted to meet roadway standards and covered with asphalt.

The development and testing program for proposed MPWSP ASR wells (ASR-5 and ASR-6) proposed outside of FORA-managed areas will require temporary discharge of relatively large volumes of groundwater. In order to accommodate the temporary discharge volumes, a temporary pipeline will be connected to an existing underground pipeline and placed on the ground within the non-residential land use area managed under the ESCA. It will be located immediately east of the sidewalk on General Jim Moore Boulevard (refer to Figure 3) and lead to an existing earthen drainage depression that has been used previously for this purpose and scraped (scarified) to provide improved infiltration rates for the discharged water. No excavation is required for placement of the temporary discharge pipeline; however, soil may inadvertently shift during placement of the pipeline onto the ground surface. Other than the application of BMPs, no earthmoving work is proposed for MPWSP within the drainage depression.

Soil Management Plan

The following soil management practices will be followed during all ground-disturbing and intrusive activities within the FORA ESCA property affected by the proposed MPWSP/Monterey Pipeline installation projects:

- Incorporate UXO Awareness Training and Monitoring into field activities as required by FORA; also incorporate requirements into the project Health and Safety Plan.
- Soils excavated from within the project site may not leave the Seaside MRA, with the exception of small quantities of soil to allow for laboratory analysis under a chain-of custody protocol, when necessary.
- Importing fill material, if needed, will be conducted in accordance with DTSC Information Advisory for Clean Imported Fill Material.
- Separate soil management practices are established for the residential reuse areas and non-residential development reuse areas such that soils from non-residential land use areas are not staged, stockpiled or spread within the designated residential land use areas.
- Best management practices will be implemented to avoid erosion (e.g., avoid erosion from over-wetting of the stockpiled cuttings and soils during dust suppression).
- Excess soils and cuttings will be spread evenly within in the project site area and only within the unpaved General Jim Moore Boulevard roadway corridor non-residential land use areas.

DRAFT

- Adhere to any requirements of the FORA UXO contractor for construction support.
- Conduct excavations in accordance with all requirements in the City of Seaside permit.
- Document all cuttings that are removed for laboratory analyses, if needed; transport soil samples to laboratory under a chain-of-custody protocol.

DRAFT

N

0 2,000 4,000 Feet

Data Source
City Limits, County
Monterey County 2013
Ford Ord Data
Cary Stiebel, fodis.net
ESCA
Stan Cook, Fort Ord Reuse Authority

Map Area

Unincorporated Monterey County

SAND CITY

SEASIDE

DEL REY OAKS

Unincorporated Monterey County

1

General Jim Moore Blvd

Del Monte Blvd

Fremont Blvd

Military Ave

Paralta Ave

La Salle Ave

San Pablo Ave

Mingo Ave

Broadway Ave

Hilby Ave

Buena Vista St

Noche Buena St

Yosemite St

Mescal St

Fort Ord National Monument

Proposed ASR-6 Well Site

Proposed ASR-5 Well Site

Figure 2

Figure 3

Figure 4

Pipeline Alignment

- Temporary Discharge Surface Pipeline
- Proposed ASR Conveyance Pipelines
- Proposed ASR Pump-to-Waste Pipeline
- Proposed ASR Recirculation Pipeline
- Proposed Transmission Main
- Pipeline Existing
- City/County
- Former Fort Ord Boundary
- Historical Fort Ord
- Seaside Land Use Non-Residential
- General Jim Moore Boulevard Corridor Boundary

AECOM

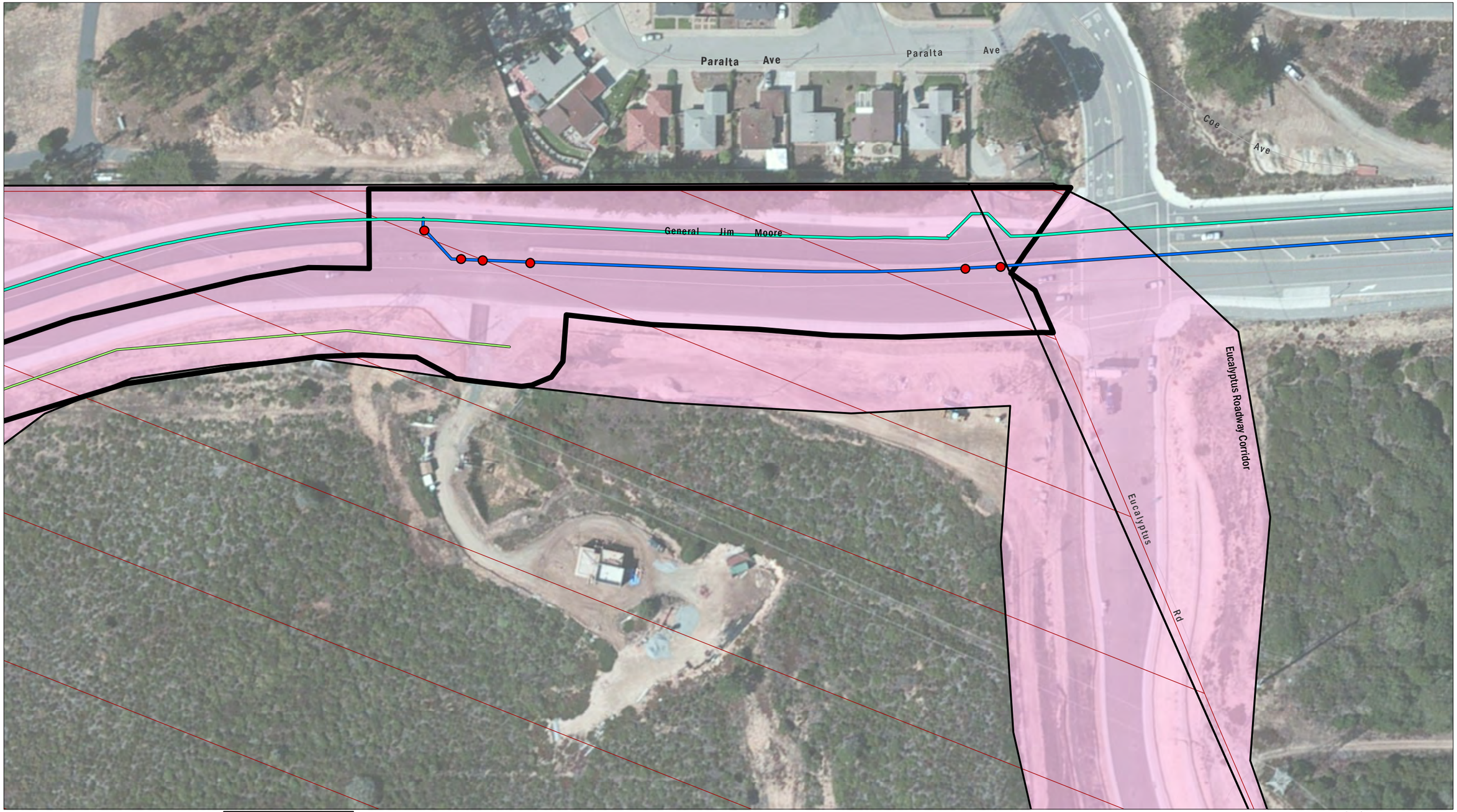
California American Water

Transmission Mains and Aquifer Storage & Recovery (ASR) Facilities

MONTEREY PENINSULA WATER SUPPLY PROJECT, MPWSP

FIGURE 1

FORA Transfer Status



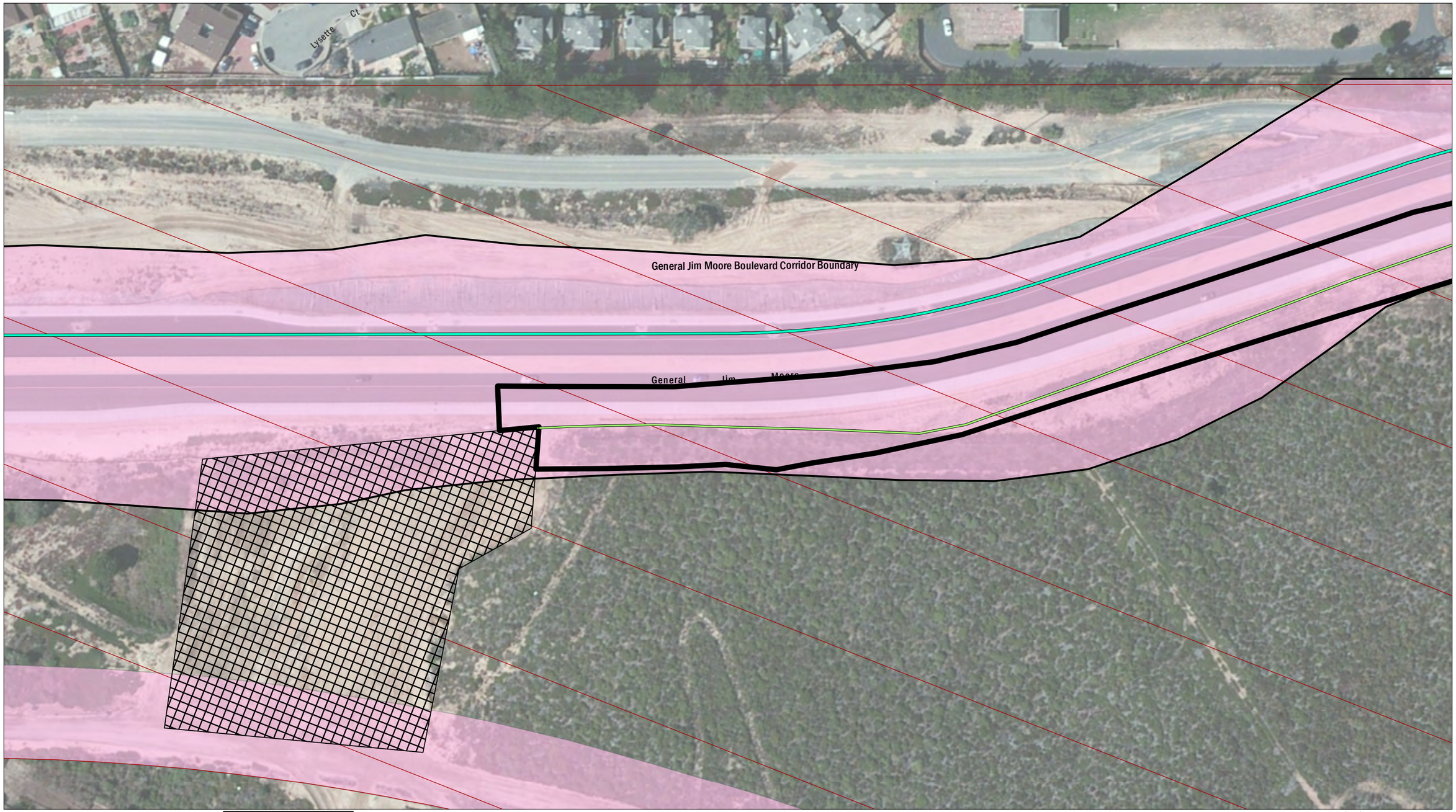
0 100
Feet

Alignment
Approximately Route of Temporary, Aboveground Pipeline
Proposed Transmission Main
Existing Pipeline
FORA ROE Planning Boundary
ESCA Property
Proposed Pothole Locations
Seaside Land Use Non-Residential
General Jim Moore Boulevard Corridor Boundary

Data Source
Federal Lands
California Protected Areas Database, 2013, GreenInfo Networks
Esri 2016
Ford Ord Data
Cary Stiebel, fodis.net
ESCA
Stan Cook, Fort Ord Reuse Authority

California American Water
Transmission Mains and Aquifer Storage & Recovery (ASR) Facilities
MONTEREY PENINSULA
WATER SUPPLY PROJECT, MPWSP

FIGURE 2



0 100
Feet

Alignment
Approximately Route of Temporary, Aboveground Pipeline
Existing Pipeline

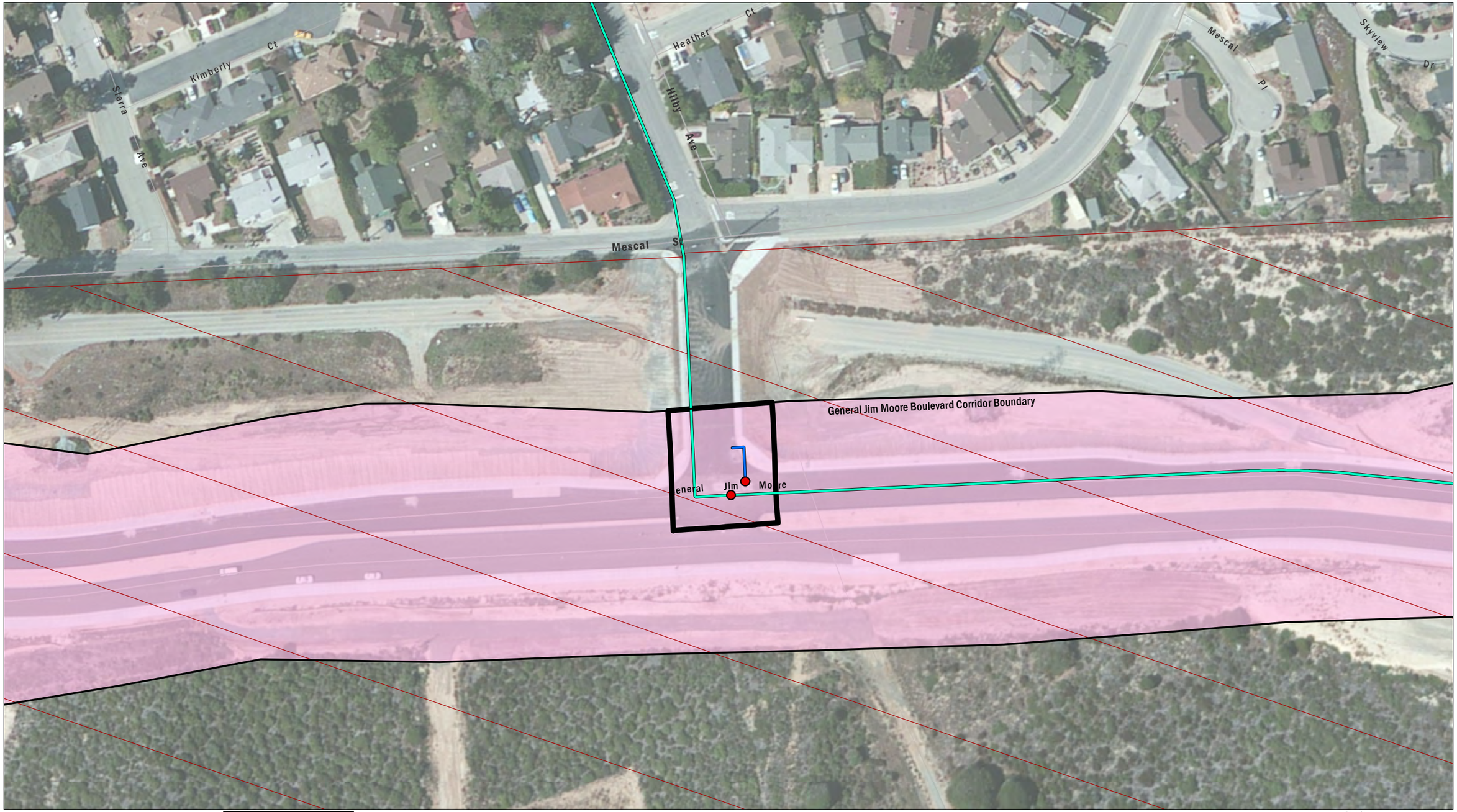
Existing Natural Depression / Proposed Percolation Area
FORA ROE Planning Boundary

ESCA Property
Seaside Land Use Non-Residential
General Jim Moore Boulevard Corridor Boundary

Data Source
Federal Lands
California Protected Areas Database, 2013, GreenInfo Networks
Esri 2016
Ford Ord Data
Cary Stiebel, fodis.net
ESCA
Stan Cook, Fort Ord Reuse Authority

California American Water
Transmission Mains and Aquifer Storage & Recovery (ASR) Facilities
MONTEREY PENINSULA
WATER SUPPLY PROJECT, MPWSP

FIGURE 3



California American Water

Transmission Mains and Aquifer Storage & Recovery (ASR) Facilities

MONTEREY PENINSULA
WATER SUPPLY PROJECT, MPWSP

FIGURE 4

Attachment F
Regulatory Approval Letters

DEPARTMENT OF THE ARMY
ARMY BASE REALIGNMENT AND CLOSURE, FORT ORD OFFICE
P.O. BOX 5008, BUILDING #4463 GIGLING ROAD
MONTEREY, CA 93944-5008

REPLY TO
ATTENTION OF:

JUN 1 8 2018

Fort Ord Base Realignment and Closure Office

Mr. Stan Cook
Fort Ord Reuse Authority
920 2nd Avenue, Suite A
Marina, CA 93933

Dear Stan:

The On-Call Construction Support Plan, Aquifer Storage and Recovery Well Site Expansion and Monterey Peninsula Water Supply Projects (June 18, 2018) adequately addressed the Fort Ord BRAC Office comments and we have no further comments.

A copy of this letter has been provided to Ms. Maeve Clancy with U.S. Environmental Protection Agency Region IX and to Mr. Vlado Varsov with California Department of Toxic Substances Control. If you have any questions please call me at (831) 242-7920 or email me at William.K.Collins.Civ@Mail.Mil.

Sincerely,

William K. Collins

William K. Collins
Environmental Coordinator
Fort Ord BRAC Office

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

June 21, 2018

Mr. Stan Cook
Fort Ord Reuse Authority
920 2nd Avenue, Suite A
Marina, CA 93933

Re: Final On Call Construction Support Plan, Aquifer Storage and Recovery Well Site Expansion and Monterey Peninsula Water Supply Projects, Former Fort Ord, CA, June 18, 2018

Dear Stan:

EPA has received the *Final On Call Construction Support Plan, Aquifer Storage and Recovery Well Site Expansion and Monterey Peninsula Water Supply Projects, Former Fort Ord, CA* dated June 18, 2018. We appreciate the opportunity to comment on this document, but have chosen to defer to the California Department of Toxic Substances Control. We do not have any comments on this document.

If you have any questions, please do not hesitate to call me at (415) 947-4105 or e-mail me at clancy.maeve@epa.gov.

Sincerely,

Maeve Clancy

Maeve Clancy
Remedial Project Manager

cc: (via email)
Vlado Arsov, DTSC
William K. Collins, Fort Ord BRAC Office
Noel Shrum, DTSC
Christopher Spill, ARCADIS

Department of Toxic Substances Control

Barbara A. Lee, Director
8800 Cal Center Drive
Sacramento, California 95826-3200

Matthew Rodriquez
Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

June 26, 2018

Mr. Stan Cook
Fort Ord Reuse Authority
920 2nd Avenue, Suite A
Marina, California 93933

FINAL ON-CALL CONSTRUCTION SUPPORT PLAN AQUIFER STORAGE AND RECOVERY WELL SITE EXPANSION AND MONTEREY PENINSULA WATER SUPPLY PROJECTS, JUNE 18, 2018

Dear Mr. Cook:

The Department of Toxic Substances Control (DTSC) has reviewed the *Final On-Call Construction Support Plan Aquifer Storage and Recovery Well Site Expansion and Monterey Peninsula Water Supply Projects, June 18, 2018*. This On-Call Construction Support Plan (CSP) has been prepared to support the Aquifer Storage and Recovery Well Site Expansion Project.

DTSC has no further comments on this final document.

DTSC appreciates the opportunity to review the subject document. If you have any questions, please contact me at (916) 255-4988 or at Vlado.Arsov@dtsc.ca.gov.

Sincerely,

Vlado Arsov, P.E.
Project Manager
Military and Corrective Action Unit
Site Mitigation and Restoration Program

cc: See next page.

Printed on Recycled Paper

cc: (Via email)

Mr. William Collins
Fort Ord Base Realignment and Closure Office
William.K.Collins.civ@mail.mil

Ms. Maeve Clancy, U.S. EPA – Region 9
Clancy.Maeve@epa.gov

Mr. Noel Shrum, Unit Chief - DTSC
Noel.Shrum@dtsc.ca.gov

Mr. Roman A. Racca, P.G., Sr. E.G. - DTSC
Roman.Racca@dtsc.ca.gov