City of Long Beach

Skylinks Regional Stormwater Capture Project Long Beach, California

SWRCB Petition Pursuant to California Water Code Section 13320

TETRA TECH

December 2025

Skylinks Regional Stormwater Capture Project

SWRCB Petition Pursuant to California Water Code Section 13320

Prepared for:

City of Long Beach

Department of Public Works, Engineering Bureau

411 West Ocean Boulevard, 5th Floor

Long Beach, CA 90802

Prepared by:

Tetra Tech

5383 Hollister Avenue, Suite 130

Santa Barbara, CA 93111

December 2025

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1 Petitioner Information

Contact Details	Response
Petitioner Name	Tammy Takigawa, PE, QSD Senior Civil Engineer City of Long Beach
Address	411 W. Ocean Blvd, 5th Floor, Long Beach, CA 90802
Telephone Number	562-570-6206
E-mail Address	Tammy.Takigawa@longbeach.gov

2 Regional Water Board Action Being Petitioned

Action Details	Response
Regional Water Board	Los Angeles Regional Water Quality Control Board (Region 4)
Date of Action Being Petitioned	December 2, 2025
Action Being Petitioned **(Attachment 1)**	Notice of Exclusion (NOE) of enrollment under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction
Subject Project	Skylinks Regional Stormwater Capture Project; WDID 4WQC40125108; File No. 25-108
Address	3559 1/2 Clark Avenue, Long Beach, CA 90808

3 How Petitioner is Aggrieved

The Petitioner, Tammy Takigawa, City of Long Beach, is aggrieved by the Los Angeles Regional Water Quality Control Board's (RWQCB) action of issuing a Notice of Exclusion (NOE) of enrollment under the State Water Resources Control Board (SWRCB) Water Quality Order No. 2004-0004-DWQ for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction. The Project's purpose is to improve water quality within the Los Cerritos Channel Watershed, reducing pollutants and resulting in long-term protection of water resources. The Project would divert up to 30 cubic feet per second (cfs) of water from the Wardlow Channel for removal/reduction of targeted pollutants (metals, bacteria, nutrients, and trash) prior to discharge back into the Channel. For every 37 acre feet of water captured for the Project, 35 acre feet would be returned to the Channel, resulting in no significant net loss of water in the watershed. BMPs and Regulatory Compliance Measures would be implemented during construction to avoid and minimize environmental impacts. In addition, the existing concrete channel would be replaced with concrete channel, resulting in no physical loss or degradation of the ecological condition of the existing channel. Above ground vegetated storage ponds would also be created as part of the Project to provide additional pollutant removal, and would provide a net increase in onsite aquatic habitat.

The Los Angeles RWQCB action of issuing a NOE has resulted in the following economic and schedule burdens on the Petitioner, blocking use of the streamlined regulatory pathway, and the Project's net water-quality and watershed benefits:

1. Prevents the Project from obtaining coverage under Water Quality Order No. 2004-0004-DWQ, which is intended to streamline and authorize similar activities. Denial of coverage under Water Quality Order No. 2004-0004-DWQ imposes additional regulatory, economic, and schedule burdens on the Petitioner, including the requirement to obtain an individual permit and longer permit processing times.

2. The NOE is not consistent with the Project's objective and purpose of providing a net environmental benefit, improving water quality and enhancing the function and beneficial uses of the watershed. Issuance of the NOE has obstructed the environmental improvements the Project would provide.

3. The Project was determined by the Petitioner to be eligible for enrollment under Water Quality Order No. 2004-0004-DWQ since it meets all criteria and impact thresholds listed in the Order; the Project would impact approximately 0.02 acres, which is well below the 0.2 acre threshold. The purpose of the General Order is not being followed, which is to provide efficient and consistent coverage for similar discharges and streamlined permitting of beneficial projects.

4. This is a high priority improvement Project for the City of Long Beach and is necessary to meet the objectives described in the Los Cerritos Channel Watershed Management Program. The Program is approved under SWRCB Orders R4-2014-0024 and R4-2012-0175 and sets forth the plan to achieve required pollutant reductions in the watershed. The purpose of the Project is to enhance both surface water quality and the anthropogenic and ecological beneficial uses of the watershed and would be conducted in accordance with the Los Cerritos Channel Watershed Management Program.

5. The permit application materials were submitted to the Los Angeles RWQCB on September 11, 2025 (**Attachment 2**). The Petitioner then provided input and responses between September 25 and October 24, 2025 to address all questions and missing items raised by the Los Angeles RWQCB (**Attachment 3**). At no time during this process did the Los Angeles RWQCB indicate that an individual Waste Discharge Requirements (WDRs) permit may be needed and that a NOE was forthcoming. In addition, an opportunity to address these concerns was not provided by the Los Angeles RWQCB within the 30-day SWRCB petition period for the NOE (which began on December 2, 2025).

4 Issues or Objections

The information detailed herein was originally provided to the Los Angeles RWQCB during the permit application process in the permit application materials (**Attachment 2**) and via supplemental e-mail correspondence (**Attachment 3**). This information was provided prior to issuance of the NOE. The issues raised in the NOE and Petitioner's responses are described below.

Issue	Petitioner Response
1. The Discharge creates or threatens to create a condition of pollution or nuisance as those terms are defined in Water Code section 13050. The Los Angeles Water Board does not have sufficient evidence to determine that the Proposed Project does not have the potential to alter the quality of the waters of the state by waste to a degree which unreasonably affects the waters' beneficial uses.	• The Los Cerritos Channel is listed as "impaired" for several pollutants on the SWRCB 303(d) List of Impaired Water Bodies (2018). The purpose of the Project is to improve water quality in the Los Cerritos Channel and watershed by diverting and treating runoff that would flow to the Channel. The Project would also provide flood mitigation. • The Project would remove an estimated 88% of targeted pollutants including metals (copper, lead, and zinc), bacteria, nutrients, and trash from the water diverted from the Wardlow Channel. This is consistent with the Los Cerritos Channel Watershed Management Program which sets forth a plan to achieve pollutant reductions in the waterbodies of the Los Cerritos Channel Watershed. • Best Management Practices (BMPs) and Regulatory Compliance Measures would be implemented to ensure that construction of the Project would not degrade surface water quality, including debris capture (e.g., netting) while the Wardlow Channel wall is being cut. Other measures include, but are not limited to, avoiding work when water is present to the extent feasible, development and implementation of water pollution and erosion control plans/measures, equipment storage and fueling in designated upland sites, and development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). • The condition of pollution or nuisance would remain unchanged from existing conditions during construction. • Upon completion, the Project would result in an improvement of the quality of waters of the state due to the removal of pollutants, which would improve the beneficial uses.

2a. Failed to demonstrate that the Discharge will not cause significant adverse environmental impacts (Section II.A.11 of the General Order) and to describe adequate avoidance of cumulative impacts to avoid negative impacts to beneficial uses of the waters of the state (Section II.A.6 of the General Order). The Applicant failed to describe the adverse effects of the Proposed Project on beneficial uses such as municipal and domestic supply, warm freshwater habitat, and wildlife habitat due to diversion of all flows below 30 cubic feet per second. Therefore, the Proposed Project fails to protect against environmental damage to water resources, to minimize adverse environmental impacts on water resources, or to ensure long-term protection of water resources both within the Wardlow Channel and downstream in the Los Cerritos Channel.	• The Project's runoff treatment and storage system would divert up to 30 cfs of water from the Wardlow Channel to a pretreatment system (hydrodynamic separator), and discharge to vegetated storage ponds and then underlying subsurface storage to remove/reduce the targeted pollutants prior to discharge back into the Channel. Once the system fills, it would divert less than 7.8 cfs. A post-treatment filtration system would further filter runoff that would be discharged back into the Channel. • The system would replenish the Channel with the treated water. The system would divert and treat a volume of 37.0 acre feet over a 24-hour period, and then release 35 acre feet of that water back into the Channel. This would result in no significant net loss of water in the watershed and would ensure that downstream beneficial uses would not be impacted. The Project would reduce pollutants while resulting in long-term protection of water resources. • A SWPPP would be developed and implemented under a Construction General Permit (WQO 2009-0009) that would specify site-specific BMPs, their maintenance, and monitoring and reporting to prevent discharges of pollutants during construction activities. Implementation of the SWPPP would protect against environmental impacts. • An Initial Study/Mitigated Negative Declaration (IS/MND) was prepared for the Proposed Project in accordance with the California Environmental Quality Act (CEQA). The Proposed Project was approved and the CEQA document certified by the City of Long Beach on July 10, 2025. The IS/MND was submitted as part of the NOI application to the Los Angeles RWQCB and provides a discussion of potential impacts to hydrology, water quality, and biological resources. The IS/MND discussed the beneficial impacts of the Project related to the treatment and improvement of surface water quality and would remove a portion of pollutants of concern before the water is discharged back into the Wardlow Channel or is allowed to infiltrate to groundwater. The IS/MND also discussed Project consistency with a

Issue	Petitioner Response
	City land use policy (Land Use Policy 20-5) that is to prevent stormwater runoff and pollutants from entering natural water bodies, wildlife habitats, wetlands, rivers, and the Pacific Ocean. There are no native habitats, wetlands, or riparian habitats within or adjacent to the Project site, but the beneficial impacts to surface water would also benefit downstream freshwater and wildlife habitats. All impacts were determined to be less than significant with implementation of Regulatory Compliance Measures which included permitting for construction and operation of the Proposed Project. • Cumulative impacts to beneficial uses of waters of the state are not anticipated to be significant since 35 acre feet of the 37 acre feet of diverted water would be returned to the system, and due to the net beneficial impact of the Project from the improvement in water quality.
2b. Failed to describe adequate avoidance and minimization of impacts in the form of practicable alternatives to the proposed Discharge, which would have less adverse impacts to the aquatic ecosystem (Section I.18 of the General Order). The Applicant failed to provide an alternatives analysis, therefore, the Los Angeles Water Board does not have adequate information to assess if the proposed project is the Least Environmentally Damaging Practicable Alternative (LEDPA) to protect against environmental damage to water resources, to minimize adverse environmental impacts on water resources, or to ensure long-term protection of water resources.	• The purpose of the Project is to enhance both surface water quality and the anthropogenic and ecological beneficial uses of the watershed and would be conducted in accordance with the Los Cerritos Channel Watershed Management Program. Once operational, the proposed Proposed Project would result in improved surface water quality in the Wardlow Channel and downstream areas. • The Project is under the impact thresholds of Water Quality Order No. 2004-0004-DWQ, would have beneficial impacts to the aquatic ecosystem, and no adverse impacts to the aquatic ecosystem are anticipated; therefore, no practicable alternatives were identified or determined to be necessary. BMPs and Regulatory Compliance Measures would be implemented during construction to avoid and minimize environmental impacts. Upon completion, the Project would improve the water quality and there would be no significant reduction in water flow.

Issue	Petitioner Response
2c. Failed to provide adequate compensatory mitigation for permanent impacts resulting in physical loss and/or degradation of ecological condition. The Proposed Project will result in 0.02 acre of permanent impact to the Wardlow Channel by constructing a new 4-foot by 4-foot inlet and form a new contour depression in the Channel. The applicant failed to submit a compensatory mitigation plan for the proposed permanent impacts (Section I.18 of the General Order). Therefore, the Proposed Project fails to protect against environmental damage to water resources, to minimize adverse environmental impacts on water resources, or to ensure long-term protection of water resources.	• The Project site is located within the boundaries of an existing golf course and the Project has been designed to avoid and minimize effects to environmental resources. There are no sensitive habitats or species on or near the Project site. All impacts were determined to be less than significant with implementation of Regulatory Compliance Measures, as described in the IS/MND prepared for the Project. • The Wardlow Channel is an existing concrete box channel. Above ground vegetated storage ponds would be created as part of the Project to provide additional pollutant removal. This would provide a net increase in onsite aquatic habitat. Since the existing concrete channel would be replaced with concrete channel, permanent impacts to the channel would not result in physical loss or degradation of the ecological condition of the existing channel. • BMPs and Regulatory Compliance Measures would be implemented to limit the potential for impacts. • The Project would provide a net environmental benefit through improving water quality in the Wardlow Channel and downstream areas. As described above, there would be no net loss of the area, functions, and beneficial use values of waters of the state. Therefore, mitigation is not anticipated to be required.

Issue	Petitioner Response
2d. Failed to provide appropriate documentation of water rights of the Wardlow Channel as requested on September 25, 2025. The Proposed Project will divert water during dry and wet weather conditions. The Los Angeles Water Board requested confirmation of water rights to the channel; however, the Applicant failed to provide appropriate documentation. Therefore, the Los Angles Water Board does not have adequate information regarding the Applicant's right to withdraw water from the Wardlow Channel for treatment, infiltration, and discharge back into the channel.	• The Project would occur within the Wardlow Channel, which is under the jurisdiction of the Los Angeles County Flood Control District. There are no known users of water from the Channel that have water rights and are opposing the Project. All flows related to the Project would be contained within Los Angeles County Flood Control District concrete box channels until they reach the tidally influenced waters of the Alamitos Bay. • These types of projects typically do not require water rights permissions. However, a permit would be obtained with a maintenance agreement from the Los Angeles County Flood Control District. If this is an issue, it would be addressed at that time. The Project is funded through the County's Measure W stormwater infrastructure program, which assures that the Project's BMPs and Regulatory Compliance Measures would be implemented and sustained to protect water quality and supporting beneficial uses.

5 Requested SWRCB Action

It is requested that the SWRCB review the issuance of an NOE by the Los Angeles RWQCB for the Project, and provide authorization and coverage to the Petitioner for the Project under Water Quality Order No. 2004-0004-DWQ. A copy of this Petition has been provided to the Los Angeles RWQCB.

I certify that the foregoing information is true and correct.

Tammy Takigawa 12/24/2025

Tammy Takigawa, PE, QSD Date

Senior Civil Engineer

City of Long Beach

Attachment 1. Notice of Exclusion (NOE) of enrollment under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction

Los Angeles Regional Water Quality Control Board

December 2, 2025

Tammy Takigawa
Senior Civil Engineer
City of Long Beach
411 W. Ocean Blvd, 5th Floor
Long Beach, CA 90802

Subject: **Notice of Exclusion (NOE) of enrollment under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction**

File: Skylinks Regional Stormwater Capture Project (Project); WDID 4WQC40125108; File No. 25-108

Dear Ms. Takigawa:

On September 11, 2025, the City of Long Beach (Applicant) submitted a Notice of Intent (NOI) to enroll the Skylinks Regional Stormwater Capture Project (hereafter, "Proposed Project") under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction (General Order).

Specifically, the Applicant proposed discharging as follows into the Wardlow Channel: The Project proposes to treat both dry- and wet-weather runoff by diverting flows from Los Cerritos Channel via the Wardlow Channel into a subsurface infiltration basin and a meandering surface vegetative pond. Specifically, the Proposed Project will regrade 0.02 acre of the concrete channel for the diversion of water into a subsurface infiltration basin with a capacity of six acre-feet. Water that will not infiltrate into the ground will then be pumped into a 200,000 gallon surface vegetative pond where it will be treated through a filter system before returning to the channel through an 18" outlet pipe. During wet weather, the diversion will intercept about 30 cubic feet per second (cfs) out of about 104 cfs from the Wardlow Channel. The system is designed to treat 202.8 acre-feet per year, with 93.1 acre-feet per year of infiltration. The Project will result in 0.02 acre of permanent impacts and 0.00046 acre of temporary impacts to waters of the state (hereafter, the "Discharge").

The Los Angeles Water Board has reviewed the information submitted by the Applicant in the NOI, and makes the following findings:

1. The enrollment under the General Order requested by the Applicant is denied. The Discharge creates or threatens to create a condition of pollution or nuisance as those terms are defined in Water Code section 13050. The Los Angeles Water Board does not have sufficient evidence to determine that the Proposed Project does not have the potential to alter the quality of the waters of the state by waste to a degree which unreasonably affects the waters' beneficial uses.

2. In addition, the Applicant has:

    a. Failed to demonstrate that the Discharge will not cause significant adverse environmental impacts (Section II.A.11 of the General Order) and to describe adequate avoidance of cumulative impacts to avoid negative impacts to beneficial uses of the waters of the state (Section II.A.6 of the General Order). The Applicant failed to describe the adverse effects of the Proposed Project on beneficial uses such as municipal and domestic supply, warm freshwater habitat, and wildlife habitat due to diversion of all flows below 30 cubic feet per second. Therefore, the Proposed Project fails to protect against environmental damage to water resources, to minimize adverse environmental impacts on water resources, or to ensure long-term protection of water resources both within the Wardlow Channel and downstream in the Los Cerritos Channel.

    b. Failed to describe adequate avoidance and minimization of impacts in the form of practicable alternatives to the proposed Discharge, which would have less adverse impacts to the aquatic ecosystem (Section I.18 of the General Order). The Applicant failed to provide an alternatives analysis, therefore, the Los Angeles Water Board does not have adequate information to assess if the proposed project is the Least Environmentally Damaging Practicable Alternative (LEDPA) to protect against environmental damage to water resources, to minimize adverse environmental impacts on water resources, or to ensure long-term protection of water resources.

    c. Failed to provide adequate compensatory mitigation for permanent impacts resulting in physical loss and/or degradation of ecological condition. The Proposed Project will result in 0.02 acre of permanent impact to the Wardlow Channel by constructing a new 4-foot by 4-foot inlet and form a new contour depression in the Channel. The applicant failed to submit a compensatory mitigation plan for the proposed permanent impacts (Section I.18 of the General Order). Therefore, the Proposed Project fails to protect against environmental damage to water resources, to minimize adverse environmental impacts on water resources, or to ensure long-term protection of water resources.

d. Failed to provide appropriate documentation of water rights of the Wardlow Channel as requested on September 25, 2025. The Proposed Project will divert water during dry and wet weather conditions. The Los Angeles Water Board requested confirmation of water rights to the channel; however, the Applicant failed to provide appropriate documentation. Therefore, the Los Angles Water Board does not have adequate information regarding the Applicant's right to withdraw water from the Wardlow Channel for treatment, infiltration, and discharge back into the channel.

Consequently, the Los Angeles Water Board lacks sufficient information to determine whether all activities associated with the Proposed Project will comply with water quality standards and other appropriate requirements of state law. The Los Angeles Water Board therefore declines to proceed with issuance of a Notice of Applicability (NOA). Please also be aware that discharges to waters of the State without a permit is prohibited pursuant to the California Porter-Cologne Water Quality Control Act. (Wat. Code §§ 13000, et seq. and § 13260 in particular.).

This Notice of Exclusion does not preclude you from submitting a new permit request. Although a discharge may be eligible for coverage under Water Quality Order No. 2004-0004, the Los Angeles Water Board will elect to regulate this discharge under individual Waste Discharge Requirements (WDRs) (Section I.14 of the General Order). If you submit a new request, we look forward to working with you to comply with all applicable substantive or procedural requirements. Should you pursue this project in a future or amended application, you may find it useful to schedule a pre-application consultation with Los Angeles Water Board staff to develop a complete set of application materials. If you require further information, please contact Libby Lee by phone at (213)-576-6705 or by email at: Libby.Lee@waterboards.ca.gov. You may also contact Dr. Céline Gallon, Environmental Program Manager, by phone at (213) 576-6784 or by email at: Celine.Gallon@waterboards.ca.gov.

Any person aggrieved by this action of the Los Angeles Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and title 23, California Code of Regulations, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Note that filing a petition does not stay the requirements of this Order. Copies of the law and regulations applicable to filing petitions will be provided upon request or may be found on the Internet at:
http://www.waterboards.ca.gov/public_notices/petitions/water_quality

Sincerely,

for Susana Arredondo
Executive Officer

cc:

Daniel Berg
Tetra Tech
Senior Biologist / Project Manager

Mary KcKinnon
Tetra Tech

Elizabeth Payne
CWA Section 401 WQC Program
Division of Water Quality
State Water Resources Control Board

US EPA, Region 9

Victoria Tang
California Department of Fish and Wildlife
Los Angeles Supervisor

Attachment 2. Skylinks Regional Stormwater Capture Project Regional Water Quality Control Board (RWQCB) General Waste Discharge Requirements (WDRs) Application Package

City of Long Beach

Skylinks Regional Stormwater Capture Project Long Beach, California

Regional Water Quality Control Board (RWQCB) General Waste Discharge Requirements (WDRs) Application Package

TETRA TECH

August 2025

Regulatory Permit Application Contents

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Figure 3: Project Impacts

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Part 5. Monarch Butterfly and Tree Survey Letter Report

Part 6. Initial Study/Mitigated Negative Declaration

Part 1. RWQCB Notice of Intent

ATTACHMENT 1
TO WQ ORDER NO. 2004-004-DWQ

STATE WATER RESOURCES CONTROL BOARD

NOTICE OF INTENT (NOI)

TO ENROLL UNDER AND COMPLY WITH THE TERMS OF WATER QUALITY ORDER NO. 2004-004 DWQ (GENERAL WDRs), STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR DREDGED OR FILL DISCHARGES TO WATERS DEEMED BY THE U.S. ARMY CORPS OF ENGINEERS TO BE OUTSIDE OF FEDERAL JURISDICTION

Mark Only One Item	1. X New Discharge 2. Change of Information-WDID # _____

I. **Owner of the Land**

Name City of Long Beach				
Mailing Address 411 W. Ocean Blvd, 5th Floor				
City Long Beach	County Los Angeles	State CA	Zip 90802	Phone (562) 570-6206
Contact Person Tammy Takigawa				

II. **Billing Address**

Name City of Long Beach				
Mailing Address 411 W. Ocean Blvd, 5th Floor				
City Long Beach	County Los Angeles	State CA	Zip 90802	Phone (562) 570-6206
Contact Person Tammy Takigawa				

III. **Discharger (if different from owner of the land)**

Name				
Mailing Address				
City	County	State	Zip	Phone
Contact Person				

STATE USE ONLY

WDID:	Regional Board Office:	Date NOI Received:	
[redacted]		Check #: _____	

IV. **Site Location**

Street (including address, if any) 3559 1/2 Clark Avenue, Long Beach, CA	
Nearest Cross Street(s) East Conant Street	
County: Los Angeles	Total Size of Site (acres): appx. 1.7

Latitude/Longitude (Center of Discharge Area) in degrees/minutes/seconds (DMS) to the nearest ½ second or decimal degrees (DD) to four decimals (0.0001 degree)

DMS: N. Latitude Deg. _____ Min. _____ Sec. _____

W. Longitude Deg. _____ Min. _____ Sec. _____

DD: N. Latitude 33.8229

W. Longitude -118.1349

Attach a map of at least 1:24000 (1" = 2000') detail of the proposed discharge site (e.g., USGS 7.5 minute topographic map).

V. **Discharge Information**

Subject		Notes
Name(s) and type(s) of receiving waters: Wardlow Channel, river/streambed (rectangular concrete channel)		Receiving water types are: river/streambed, lake/reservoir, ocean/estuary/bay, riparian area, wetland
Eligibility of receiving water. Provide evidence that the water affected by this discharge is deemed to be out side of federal jurisdiction: USACE concurrence indicating that the Wardlow Channel is out side of federal jurisdiction was received on 9/5/25. In addition, a formal USACE Approved Jurisdictional Determination is also being pursued for the Project (Filed 07/29/25; DA No. SPL-2025-00481).		U.S. Army Corps of Engineers jurisdictional disclaimer letter, or explanation why such a disclaimer is not needed
Identify all regulatory agencies having jurisdiction over this project. Attach copies of all federal and State license/permit applications or issued copies of licenses/permits from government agencies: A California Department of Fish and Wildlife Streambed Alteration Agreement is being pursued for the Project (Filed 08/31/25 [anticipated]; Notification No. 61204).		For example: Dept. of Fish and Game Streambed Alteration Agreement, Coastal Commission permit
Proposed project start date: appx. February 2026	Expected date of completion: appx. May 2027	

Project description: The Skylinks Regional Stormwater Capture Project will treat both dry- and wet-weather runoff by diverting flows from Los Cerritos Channel via the Wardlow Channel into a subsurface infiltration basin. Primary Project components and features include the following: drainage and drainage pumps; grading plan; subsurface water storage; water treatment and use; landscape plan; and operation and maintenance. Additional details are provided in the Supplemental Project Information (Part 2), Section 1.	For example: Discharge of riprap; discharge of fill; excavation for a utility line
Purpose of the entire activity: The Project's primary objectives are to: improve the water quality within the Los Cerritos Channel (also known as Wardlow Channel); and create a publicly accessible space adjacent to the Wardlow Channel for educational purposes. Secondary objectives are to: offset potable water demand at the Skylinks Golf Course (secondary irrigation water source); and educate the public on the local water supply, demand, and integration of storm water quality into urban spaces, providing community and ecosystem benefits.	For example: Stream-bank erosion control; flood management; residential development
Characterization of discharges: Discharge will include existing concrete material and sediment that is not contaminated.	What types of constituents will be discharged? Is the sediment contaminated?

Fill and Excavation Discharges: For each water body type listed below indicate in ACRES the area of the proposed discharge to waters of the state, and identify the impacts(s) as permanent and/or temporary. For linear discharges to drainage features and shorelines, e.g., bank stabilization, revetment, and channelization projects, ALSO specify the length of the proposed discharge to waters of the state IN FEET.[1]

Water Body Type	Permanent Impact		Temporary Impact	
	Acres	Linear Feet	Acres	Linear Feet
Wetland				
Streambed	0.02 acres (900 SF)			
Lake/Reservoir				
Ocean/Estuary/Bay				
Riparian				

Dredging Discharges: Volume (cubic yards) of dredged material to be discharged into waters of the United States.

[1] For guidance in determining the extent of impacted waters, see General WDRs, section II.A.4

VI. **California Environmental Quality Act**

Will an environmental impact report or a negative declaration be adopted for this project or has one been adopted?

☒ YES ❑ NO

If yes, what is the current status of the environmental impact report or negative declaration?

❑ Not yet issued for public review.
❑ In public review.
☒ Adopted.

Name of lead agency City of Long Beach

If an environmental impact report or a negative declaration is in public review or has been adopted, enclose the document with this NOI.

Will the discharge occur in, or in immediate proximity to, an area covered by a U.S. Fish and Wildlife Service (USFWS) Habitat Conservation Plan (HCP) or a Department of Fish and Game Natural Community Conservation Plan (NCCP)?

❑YES ☒ NO

Will the discharge occur in, or in immediate proximity to, any habitat of a plant or animal species that has been classified by the Department of Fish and Game, the U.S. Fish and Wildlife Service, or the National Marine Fisheries Service as candidate, sensitive, endangered, rare, or threatened?

❑YES ☒ NO

Will the discharge occur in, or in immediate proximity to, a significant historical or archeological resource, a unique paleontological resource or site, a unique geologic feature, or any human remains?

❑YES ☒ NO

Will the discharge occur in, or in immediate proximity to, land under existing zoning for agricultural use or under a Williamson Act contract?

❑YES ☒ NO

Will the discharge, as mitigated, cause any other significant adverse environmental impact?

❑YES ☒ NO

If you answered "yes" to any of the previous five questions, provide a detailed explanation demonstrating why the discharge is eligible to be enrolled under the General WDRs.

VII. **Additional Submittals.** In accordance with provisions of State Water Resources Control Board (SWRCB) Water Quality Order No. 2004-0004 DWQ, please submit the following with this NOI to the appropriate Regional Water Quality Control Board or, for multi-Region projects, to the SWRCB.

a. A fee pursuant to California Code of Regulations, Title 23 Section 2200.

b. A Mitigation Plan, as described in the General WDRs.

VIII. CERTIFICATION

"I certify under penalty of law that this document and all attachments were prepared under my direction and 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, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. In addition, I certify that the provisions of these General WDRs will be complied with."	
Signature of Discharger Tammy Takigawa	Title Senior Civil Engineer
Printed or Typed Name Tammy Takigawa	Date 8/28/2025

Part 2. Supplemental Project Information

City of Long Beach

Skylinks Regional Stormwater Capture Project Long Beach, California

RWQCB General WDRs Supplemental Project Information

TETRA TECH

August 2025

Skylinks Regional Stormwater Capture Project

RWQCB General WDRs Supplemental Project Information

Prepared for:

City of Long Beach

Department of Public Works, Engineering Bureau

411 West Ocean Boulevard, 5th Floor

Long Beach, CA 90802

Prepared by:

Tetra Tech

5383 Hollister Avenue, Suite 130

Santa Barbara, CA 93111

August 2025

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Appendix A. Project Plans

1 Introduction

The following provides supplemental information in support of a Regional Water Quality Control Board (RWQCB) General Waste Discharge Requirements (WDRs; Water Quality Order No. 2004-0004-DWQ) permit application for the Skylinks Regional Stormwater Capture Project (Project) proposed by the City of Long Beach. The Project's primary objectives are to: improve the water quality within the Los Cerritos Channel Watershed; and create a publicly accessible space adjacent to the Wardlow Channel for educational purposes. Secondary objectives are to: offset potable water demand at the Skylinks Golf Course (secondary irrigation water source); and educate the public on the local water supply, demand, and integration of storm water quality into urban spaces, providing community and ecosystem benefits. A Biological Survey Report (Tetra Tech 2023a), Monarch Butterfly and Tree Survey Report (Tetra Tech 2023b), and associated field surveys have been completed for the Project. An Initial Study/Mitigated Negative Declaration (IS/MND) was prepared for the Project in accordance with the California Environmental Quality Act (CEQA) (Tetra Tech 2024). The CEQA document was certified and the Project approved by the City of Long Beach on July 10, 2025.

1.1 Project Location

The approximately 1.7-acre Project site is within the boundaries of the 160-acre Skylinks Golf Course, a public golf course owned by the City of Long Beach, and is located at 3559 1/2 Clark Avenue, Long Beach, Los Angeles County, California (Figure 1 in Biological Survey Report). The approximate center point of the Project site is at 33.8229720, -118.1349871. The Project site is located in Township 4 South, Range 12 West, and Section 34, San Bernardino Principal Meridian, within Assessor Parcel Number 7149-005-902.

1.2 Project Description

The City of Long Beach Department of Public Works is planning to implement the Project within the northeast portion of the Skylinks Golf Course. The proposed Project serves to address stormwater quality for both the Los Cerritos Channel Watershed and the Alamitos Bay Watershed Management Area. The Project will treat both dry- and wet-weather runoff by diverting flows from Los Cerritos Channel via the Wardlow Channel into a subsurface infiltration basin with a capacity of six acre feet. The Project will directly impact the Wardlow Channel, which is a Los Angeles County Flood Control District improved channel. The Wardlow Channel is an unvegetated, rectangular concrete channel. A portion of the flows will be pumped to a 200,000 gallon vegetative pond where it will be treated through a filter system before returning to the Channel. The Project will also incorporate walking trails, benches, native vegetation, and interpretive signage.

Primary Project components and features include the following: drainage and drainage pumps; grading plan; subsurface water storage; water treatment and use; landscape plan; and operation and maintenance. Project construction activities and staging include the following: staging area; construction access routes; site grading; and installation of Project components and facilities. A detailed

Project description of each of these components, features, and activities is provided in the IS/MND prepared for the Project.

1.2.1 Project Equipment

Project implementation would involve the use of heavy equipment (e.g., excavators, trucks, cranes, concrete trucks, backhoes, roller, and pavers) during Project construction.

1.2.2 Project Schedule

Subject to Project approval and issuance of grading, construction, and other permits, Project construction is anticipated to commence in February 2026, and last approximately 8 months with different phases of construction occurring concurrently. Grading and excavation are expected to occur over a 2 to 3 month period. Installation of the storage facility, construction of the pump stations and other subgrade improvements are expected to occur over 3 to 4 months. Final grading and landscaping would occur over 1 to 2 months. The Project is anticipated to be completed in May 2027.

Any dry weather flows will be diverted from the construction area. Work will not occur when water is present; however, should this become necessary due to unexpected heavy precipitation, the City of Long Beach will notify RWQCB in writing prior to proceeding.

1.3 Existing Conditions

The Project site, which is adjacent to (but not part of) the usable fairway for golf activities, is covered primarily by a mixture of non-native ornamental trees and non-native grasses. The following vegetation types are present in the Project site: grassland and ornamentals, Chinese elm (*Ulmus parvifolia*) and ornamentals, cultivated grass, and Aleppo pine (*Pinus halepensis*) stand (Figure 3 in Biological Survey Report). Elevation in the Project site ranges from about 25 to 35 feet above mean sea level. The Project site is generally surrounded by industrial buildings to the north, residential development to the east, and the Skylinks Golf Course to the south and west. The Project site is located within a highly urbanized region in the City of Long Beach near the Long Beach Airport.

1.3.1 Hydrology

The Wardlow Channel (a rectangular concrete channel) is located along the northern boundary of the Project site and within a small portion of the site. The Wardlow Channel is unvegetated and had standing surface water that was about 0.5 inches deep during the survey in February 2023. There are no wetlands within the Project site and no hydrologic connection between the Wardlow Channel and other areas of the site. In addition, no riparian habitats are present. Additional details are provided in the Biological Survey Report (Tetra Tech 2023a).

2 Project Impacts

2.1 Impacts to RWQCB Jurisdictional Aquatic Resources

A biological field survey and aquatic resources assessment were conducted at the Project site on September 9, 2021 and February 21, 2023. One aquatic resource, the Wardlow Channel, was identified within the Project site (Figure 3 in Biological Survey Report). This is an unvegetated, rectangular concrete channel that was determined to be a RWQCB Non-Wetland Waters of the State. The Project would require construction of a diversion structure into the Wardlow Channel. A total of approximately 900 square feet will be permanently impacted within the Wardlow Channel from a new 4-foot by 4-foot inlet and from a new contour (i.e., depression) in the Channel; the bottom of the Channel will be about 9 inches lower than pre-construction conditions.

2.2 Impacts to Vegetation Communities and Trees

Project impacts to vegetation communities are provided in Table 1 below and shown in Figure 3 in the Biological Survey Report. All vegetation communities within the Project site are dominated by non-native species. A majority of the site is comprised of non-native grassland and ornamentals (1.52 acres). The Project site will be re-planted with native trees and shrubs after construction. Additional details on vegetation communities are provided in the Biological Survey Report (Tetra Tech 2023a).

Table 1: Impacts to Vegetation Communities

Vegetation Type	Project Site (acres)
Aleppo Pine Stand	0.007
Chinese Elm and Ornamentals	0.12
Cultivated Grass	0.05
Grassland and Ornamentals	1.52
Total	**1.70**

A total of 64 non-native trees were found within the Project site (Figures 3 and 4 in Monarch Butterfly and Tree Survey Report), including predominantly Chilean pepper tree (*Schinus polygama*), ngaio tree (*Myoporum laetum*), and a variety of other ornamental trees at low numbers. All trees in the Project site would be removed during construction. Of the 64 non-native trees at the Project site, 21 meet the definition of a mature tree that would be subject to the City of Long Beach Municipal Code Chapter 14.28 – Trees and Shrubs, and the City of Long Beach Tree Maintenance Policy which requires a 2:1 replacement of removed mature trees. A total of 42 trees will be planted as part of the proposed Project. This requirement is a condition of approval for the Project that was codified by the City Planning Commission on July 10, 2025 when the Project and CEQA document were approved. Additional details on the trees are provided in the Monarch Butterfly and Tree Survey Report (Tetra Tech 2023b).

2.3 Impacts to Special-Status Species

Tetra Tech completed a Biological Survey Report (Tetra Tech 2023a) and Monarch Butterfly and Tree Survey Report (Tetra Tech 2023b) that examined the potential for special-status plants and animals to occur within the Project site. The relevant findings are summarized below.

2.3.1 Rare Plants

No rare plants were observed onsite. Although one of the plants listed in Table 2 would not have been flowering at the time of the survey in September (Lyon's pentachaeta [*Pentachaeta lyonii*]), no evidence of any special-status plant species or their habitat was found during the survey. In addition, all records of these species near the Project site are historical from 1932 and/or listed as extirpated/possibly extirpated. Overall, special-status plant species have a low potential to occur due to disturbance at the Project site and use as a golf course that has resulted in domination of non-native grasses and ornamental plants.

Table 2: Special-Status Plant Species with Potential to Occur

Scientific Name	Common Name	Status	Potential to Occur
Coulter's saltbush	*Atriplex coulteri*	1B.2	**Not Observed.** Habitat does not occur onsite. Flowering time is Mar-Oct.
Southern tarplant	*Centromadia parryi* ssp. *australis*	1B.1	**Not Observed.** Habitat does not occur onsite. Flowering time is Jun-Oct.
Lyon's pentachaeta	*Pentachaeta lyonii*	Federally/State Endangered, 1B.1	**Low.** Habitat does not occur onsite. Flowering time is Mar-Aug.
San Bernardino aster	*Symphyotrichum defoliatum*	1B.2	**Not Observed.** Habitat does not occur onsite. Flowering time is Jul-Nov.

Notes: California Native Plant Society (CNPS), California Rare Plant Rank (CRPR)
1B Plants that are rare, threatened, or endangered in California and elsewhere
0.1 Plants that are seriously threatened in California
0.2 Plants that are moderately threatened in California

2.3.2 Special-Status Animal Species

One transient yellow warbler (*Setophaga petechia*), a California Department of Fish and Wildlife (CDFW) Species of Special Concern (SSC), was observed during the survey in February 2023. In addition, three special-status animal species have low potential to occur in the Project site: one reptile and two invertebrates. These species are listed in Table 3 and discussed in greater detail below. Additional details on species potential to occur are provided in the Biological Survey Report (Tetra Tech 2023a) and Monarch Butterfly and Tree Survey Report (Tetra Tech 2023b).

Table 3: Special-status Animal Species with Potential to Occur

Scientific Name	Common Name	Status	Potential to Occur
Birds			
Setophaga petechia	Yellow warbler	SSC	Observed (Transient)

Scientific Name	Common Name	Status	Potential to Occur
Reptiles			
Phrynosoma blainvillii	Coast horned lizard	SSC	Low
Invertebrates			
Bombus crotchii	Crotch's bumble bee	State Candidate Endangered	Low
Danaus plexippus	Monarch butterfly	Federally Proposed Threatened	Low

Notes: CDFW Species of Special Concern (SSC)

Yellow warbler (*Setophaga petechia*). CDFW SSC. Observed (Transient).
Although one transient yellow warbler was observed onsite, this species is unlikely to nest on the Project site since preferred riparian nesting habitat is not present.

Coast horned lizard (*Phrynosoma blainvillii*). CDFW SSC. Low Potential.
The coast horned lizard prefers chaparral, coastal scrub, riparian scrub, riparian woodland, and valley and foothill grassland habitats. While the Project site may provide low quality non-native grassland habitat in some areas, the site is heavily trafficked, small, and disconnected from adjacent habitats. Therefore, this species has a low potential to be present in the Project site.

Crotch's bumble bee (*Bombus crotchii*). State Candidate Endangered. Low Potential.
Several bumble bees were observed during the biological survey. However, none of the preferred food plant genera for Crotch bumble bees were observed, including *Phacelia*, *Clarkia*, *Antirrhinum*, *Dendromecon*, *Eschscholzia,* and *Eriogonum*. In addition, the site is heavily trafficked, small, and disconnected from adjacent habitats. Therefore, Crotch bumble bee has a low potential to occur in the Project site.

Monarch butterfly (*Danaus plexippus*). Federally Proposed Threatened. Low Potential.
Monarch butterfly roosts are typically located in wind-protected tree groves with nectar and water sources nearby. A monarch butterfly and tree survey was conducted at the Project site in February 2023. No monarchs or overwintering roosts were found, and the trees observed within the Project site are unlikely to provide roosting habitat for monarch butterflies. Therefore, monarch butterfly has a low potential to occur in the Project site.

3 Measures to Protect Aquatic and Natural Resources

This section provides a discussion of avoidance and minimization measures and Best Management Practices (BMPs) that have been incorporated into the Project to minimize adverse environmental effects. The measures listed below pertain to habitat protection and avoidance, water quality protection and erosion control, and special-status species.

- Work shall not occur when water is present within the Wardlow Channel to the maximum extent feasible and the City of Long Beach shall coordinate with RWQCB before commencing work in these conditions.

- Water pollution and erosion control plans shall be developed and implemented.
- The footprint of disturbance shall be confined to the Project site. The limits of Project disturbance shall be clearly defined prior to initiation of work.
- Equipment storage and fueling shall be located in designated upland sites to prevent any runoff from entering into aquatic areas. Necessary precautions shall be taken to prevent the release of any hazardous substances into surface waters. Project-related spills of hazardous materials shall be reported to the appropriate entities and cleaned up immediately.
- The Project site shall be re-planted with native trees and shrubs after construction within the 1.7-acre site.
- The Project site shall be kept clean of debris. All food related trash items shall be enclosed in sealed containers and regularly removed from the Project site.

3.1 Environmental Conservation Measures

Avoidance and minimization measures shall be implemented to minimize impacts to sensitive resources. Key conservation measures (referred to as Regulatory Compliance Measures [RCM] in the IS/MND) that shall be implemented are identified below. The complete list of measures that will be implemented is provided in the IS/MND.

RCM BIO-1 Tree Removal and Replacement. Tree removal and replacement shall be performed in accordance with the City of Long Beach Municipal Code Chapter 14.28 – Trees and Shrubs, and the City of Long Beach Tree Maintenance Policy, including using the trees from the Approved Street Tree List. All trees removed that meet criteria for replacement need to be replaced at a 2:1 ratio. Trees that need to be removed and replaced shall be approved by the City of Long Beach.

RCM BIO-2 Compliance with Migratory Bird Treaty Act (MBTA). Tree and vegetation removal shall be restricted to outside the active nesting season (January 1 through September 30). If construction is proposed between January 1 and September 30, a qualified biologist or ornithologist familiar with local avian species and the requirements of the MBTA and the California Fish and Game Code shall conduct a pre-construction nesting bird survey to determine if active nests of special-status birds or bird species protected by the MBTA and/or the California Fish and Game Code, are present in the Project site or within 300 feet of the site. The survey shall be conducted within 3 days prior to initiation of Project activities that would occur during the nesting bird season (January 1 to September 30). The results of the survey shall be recorded in a memorandum and submitted to the City of Long Beach Director of Community Development, or designee, within 48 hours. If the survey is positive, and the nesting species are subject to the MBTA or the California Fish and Game Code, the memorandum shall be submitted to the California Department of Fish and Wildlife (CDFW) to determine appropriate action. If an active nest is found, a qualified biologist or ornithologist shall be retained to monitor, and a no-activity buffer shall be established by the biologist or ornithologist based on the bird species and construction activity. Construction within the no-work buffer shall be postponed or halted, at the discretion of the biologist or ornithologist, until the nest is vacated, juveniles have fledged, and adults and young are no longer reliant on the nest for survival.

RCM BIO-3 Permits for Jurisdictional Resources. As the Project proponent, the City of Long Beach will obtain the following permits (as applicable) related to jurisdictional resources that would be directly or indirectly impacted by the proposed Project:

- U.S. Army Corps of Engineers (USACE) Clean Water Act (CWA) Section 404 Permit.
- Regional Water Quality Control Board (RWQCB) CWA Section 401 Water Quality Standards Certification.
- CDFW Lake and Streambed Alteration Agreement under Section 1602 of the California Fish and Game Code.

The permits shall be obtained prior to beginning construction and all permit measures and conditions shall be followed. RWQCB Waste Discharge Requirements and a CDFW Lake and Streambed Alteration Agreement are being obtained for the Project. A USACE CWA Section 404 permit is not anticipated to be required.

RCM GEO-1 Erosion Control Measures. Potential soil erosion that would occur during construction activities, including site grading, structure assembly, and utility extension shall be reduced to a less than significant level with standard erosion mitigation measures, including the use of hay bales and other erosion control devices as determined by site-specific conditions, and soil wetting, applied as required under applicable regulatory guidelines and standards. Prior to issuance of a grading permit, the City of Long Beach's Director of Community Development, or designee, shall confirm that BMPs associated with construction activities have been developed to ensure that the potential for soil erosion and sedimentation is minimized and to reduce pollutant discharges to the City of Long Beach MS4 as a result of construction activities in compliance with Long Beach Municipal Code Section 8.96.120. These BMPs shall be included in the project plan specifications and implemented by the project contractor. In addition, the project would be enrolled in the California Construction General Permit (WQO 2009-0009) through the State Water Resources Control Board, which includes preparation of a Storm Water Pollution Prevention Plan.

4 Mitigation Plan

The Project site is located within the boundaries of an existing golf course and the Project has been designed to avoid and minimize effects to sensitive environmental resources. All temporary impacts will be restored to pre-disturbance conditions. Appropriate measures as described in the sections above will be implemented to limit the potential for impacts. Additionally, this Project will provide a net environmental benefit through improving water quality and offsetting potable water demand at the Skylinks Golf Course. Therefore, there will be no net loss of the area, functions, and beneficial use values of waters of the State, and a mitigation plan or compensatory mitigation are not anticipated to be required.

5 References

Tetra Tech. 2023a. *General Biological Survey Letter Report for the Skylinks Regional Stormwater Capture Project, Los Angeles County, California.* April 27.

Tetra Tech. 2023b. *Monarch Butterfly and Tree Survey Letter Report for the Skylinks Regional Stormwater Capture Project, Los Angeles County, California*. April 27.

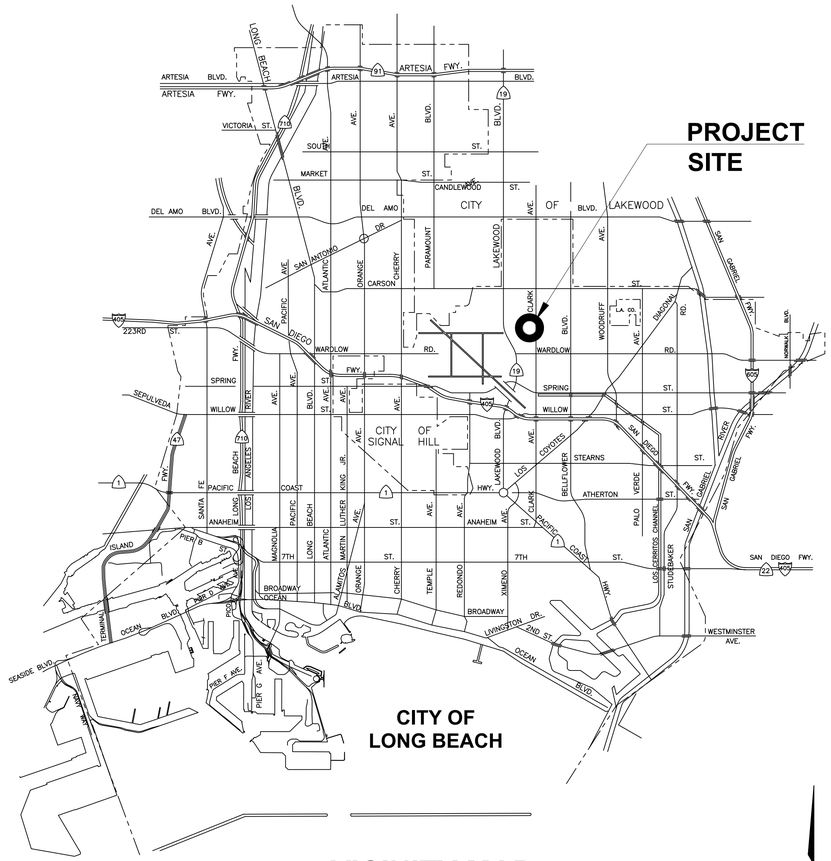
Tetra Tech, 2024. *Initial Study/Mitigated Negative Declaration for Skylinks Regional Stormwater Capture Project, Long Beach*, California. June.

Appendix A. Project Plans

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT

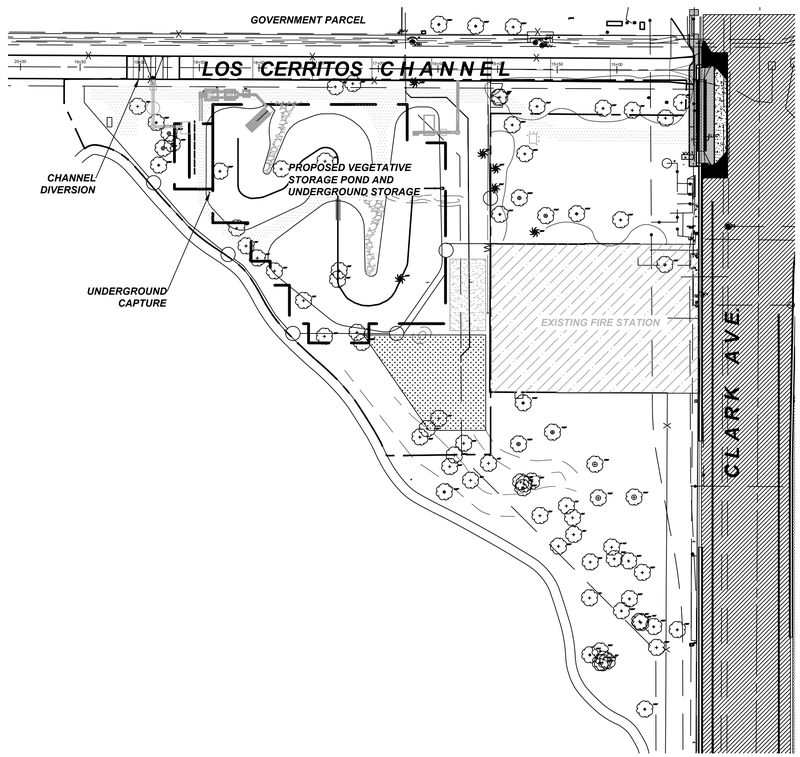
CITY OF LONG BEACH, CALIFORNIA

100% DESIGN SUBMITTAL



VICINITY MAP

SCALE: NONE



PROJECT SITE OVERVIEW

SCALE: 1"=60'

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4	C2	SITE PLAN
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6	C4	SWPPP
7	C5	RECLAIMED WATER PLANS
8	C6	LBWD GENERAL NOTES
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SURVEY MONUMENT NOTES:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION AND PERPETUATION OF ALL EXISTING MONUMENTS WHICH CONTROL SUBDIVISIONS, TRACTS, BOUNDARIES OR RIGHT-OF-WAY, OR WHICH PROVIDE SURVEY CONTROL, INCLUDING BENCHMARKS, WHICH WILL BE DISTURBED BY THE CONTRACTOR'S ACTIVITIES.
AFTER RECEIVING THE NOTICE-TO-PROCEED, THE CONTRACTOR, USING THE SERVICES OF A SURVEYOR LICENSED IN CALIFORNIA, SHALL SUBMIT TO THE CITY SURVEYOR'S OFFICE, 970 W. CHESTER PLACE, PRELIMINARY CORNER RECORDS FOR THOSE MONUMENTS THAT WERE FOUND IN THE AREA OF CONSTRUCTION.
THE CONTRACTOR'S SURVEYOR SHALL SET NEW TIES FOR ANY MONUMENTS WHOSE TIES ARE DISTURBED, AND PREPARE PRELIMINARY CORNER RECORDS FOR THE NEW TIES.
AFTER CONSTRUCTION, THE CONTRACTOR'S SURVEYOR SHALL SUBMIT TO THE CITY THE PRELIMINARY CORNER RECORDS FOR ANY MONUMENTS REPLACED OR CONSTRUCTED, OR WHOSE TIES ARE RESET, THE CONTRACTOR'S SURVEYOR SHALL FILE CORNER RECORDS FOR THOSE MONUMENTS IN THE OFFICE OF THE COUNTY SURVEYOR AND SHALL PROVIDE THE CITY WITH A COPY OF ALL CORNER RECORDS FILED. (CA BUSINESS & PROFESSIONS CODE SECTION 8771, 8772 & 8773)

BENCHMARK PERPETUATION NOTES:

PRIOR TO REMOVALS, THE CONTRACTOR SHALL REQUEST THE CITY SURVEYOR'S OFFICE, (562) 570-6992, TO TRANSFER THE ELEVATION FOR ANY BENCHMARKS TO BE RESET, TO TEMPORARY BENCHMARKS; AND PROVIDE A BRASS DISC FOR THE CITY SURVEYOR TO STAMP. WHEN THE DISCS ARE STAMPED AND RETURNED TO THE CONTRACTOR, THE CONTRACTOR SHALL CONSTRUCT BENCHMARKS AT LOCATIONS MARKED OUT BY THE CITY SURVEYOR.

CITY SURVEYOR STATEMENT:

I HAVE REVIEWED THE PLANS FOR COMPLIANCE WITH BUSINESS AND PROFESSIONS CODE SECTION 8771, 8772, AND 8773

.
CITY SURVEYOR, CITY OF LONG BEACH

BENCHMARK: CITY OF LB BM 860,
STUDEBAKER RD. @ WILLOW ST.
BRASS DISC FLUSH With PVMT; STAMPED "CLB BM 1981"
1.1' Westerly of west CURB, STUDEBAKER RD; 38' North of Northerly CURB at WILLOW ST SVC RD

ELEV. = 17.077 FT; MSL DATUM, NGVD 1929 MSL, 1985 ADJ

HORIZONTAL DATUM IS BASED ON CALIFORNIA STATE PLANE ZONE 5 1983 US FOOT.

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TWO WORKING DAYS BEFORE YOU DIG

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IRVINE, CA 92614
PHONE: (949) 809-5000

CITY OF LONG BEACH - DEPARTMENT OF PUBLIC WORKS -
ENGINEERING BUREAU 411 W. OCEAN BLVD, LONG BEACH, CA 90802

APPROVALS

	DATE
DESIGN CHECK BY:	
DRAFTING CHECK BY:	
ASSISTANT CITY ENGINEER	DATE
CONSTRUCTION SERVICES OFFICER	DATE
CITY ENGINEER	DATE
CITY TRAFFIC ENGINEER	DATE

DESIGNED BY:	DRAWN BY:	
X.X.X.	X.X.X.	SECTION HEAD
		PROJECT MANAGER
		INSPECTION
		SURVEY CONTROL

No.	DATE	REVISIONS SHEET	APPROVAL

AS-BUILT: REF: DWG. X-XXXX DWG. X-XXXX

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
TITLE SHEET

GRAPHIC SCALE: PER PLAN
PAGE
FIELD BOOK
DRAWING REF. T1
MUNIS Project # XXXX-XXXX-XXXX
Phase# XXXX / Rebid: N/A
SHEET 1 OF 70
NOTE:

LAST SAVED BY: ryan.cheyne
PLOT DATE: Jun. 17, 25 SAVED PATH: P:\Work\141970.01 clb skylinks phase 2\05 design\02 Sheets

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE PROJECT TECHNICAL SPECIFICATIONS. WORK NOT COVERED BY THE PROJECT SPECIFICATIONS SHALL CONFORM TO THE STANDARD PLANS OF LOS ANGELES COUNTY, THE CITY OF LONG BEACH, AMERICAN PUBLIC WORKS ASSOCIATION AND CALTRANS STANDARD PLANS AND SPECIFICATIONS (ALL LATEST EDITIONS).
2. NOTIFICATION: AT LEAST TEN (10) WORKING DAYS BEFORE THE START OF CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY, IN WRITING, ALL HOMES LOCATED WITHIN 500 FEET OF THE WORK AREA, OF THE PROPOSED CONSTRUCTION START DATE. A COPY OF SAID WRITTEN NOTIFICATION SHALL BE PROVIDED TO THE INSPECTOR FOR WRITTEN APPROVAL BEFORE THEY ARE DISTRIBUTED TO THE OCCUPANTS OF THE ABUTTING PROPERTY.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER TWO (2) WORKING DAYS IN ADVANCE FOR INSPECTION PRIOR TO STARTING WORK AT (562) 570-6206.
4. THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES 48 HOURS IN ADVANCE PRIOR TO WORKING AROUND THEIR FACILITIES.
5. THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT AT 811 48 HOURS IN ADVANCE PRIOR TO WORKING AROUND THEIR FACILITIES.
6. THE CONTRACTOR SHALL VISIT THE SITE AND BE KNOWLEDGEABLE OF CONDITIONS THEREON. THE CONTRACTOR SHALL INVESTIGATE, VERIFY AND BE RESPONSIBLE FOR ALL CONDITIONS OF THE PROJECT. THE CONTRACTOR SHALL NOTIFY THE CITY OF ANY CONDITIONS REQUIRING CORRECTION OR MODIFICATION PRIOR TO PROCEEDING WITH THE WORK.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACCURATE PLACEMENT OF ALL WORK ON THE SITE.
8. EXISTING ELEVATIONS AND LOCATIONS TO BE JOINED BY THE WORK SHALL BE VERIFIED BY THE CONTRACTOR BEFORE COMMENCING THE WORK. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES ON THE DRAWINGS.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL DRAWINGS WITH ITS SUBCONTRACTORS. ALL SUBCONTRACTORS SHALL BE FURNISHED WITH COMPLETE SETS OF PLANS AND SPECIFICATIONS BY THE CONTRACTOR.
10. WHERE SPECIFIC DIMENSIONS, DETAILS, OR DESIGN INTENT CANNOT BE DETERMINED, CONSULT THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
11. THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES AND PROTECT THEM FROM DAMAGE AS REQUIRED. ALL EXISTING UTILITY CROSSINGS SHALL BE POTHOLED AND FIELD LOCATED. IN ANY INSTANCES WHERE THE CLEARANCE BETWEEN THE TOP OF THE EXISTING PIPE AND THE BOTTOM OF THE CROSSING PIPE OR CONDUIT IS LESS THAN 18", CONTRACTOR SHALL INSTALL BLANKET PROTECTION IN ACCORDANCE WITH THE STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION NO. 224-2.

EXISTING FACILITY NOTE

ALL EXISTING INFORMATION SHOWN ON THE PLANS PREPARED BY CRAFTWATER HAS BEEN TRANSFERRED FROM DOCUMENTS PROVIDED BY THE CITY OF LONG BEACH. CRAFTWATER HAS PROVIDED DRAFTING SERVICES ONLY WITH REGARD TO DEPICTING EXISTING IMPROVEMENTS AND CONDITIONS. CRAFTWATER CANNOT GUARANTEE THE ACCURACY OR COMPLETENESS OF EXISTING INFORMATION SHOWN. IF CONTRACTOR NOTICES ANY DISCREPANCIES BETWEEN EXISTING INFORMATION SHOWN ON THESE PLANS AND ACTUAL CONDITIONS, THE CONTRACTOR SHALL GIVE NOTICE OF SUCH FACT TO THE CITY OR ITS REPRESENTATIVE WITHOUT DELAY.

JOB SITE RESPONSIBILITY

CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; AND THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT GENERAL NOTES

1. A PERMIT SHALL BE OBTAINED FOR ALL WORK WITHIN THE COUNTY RIGHT OF WAY AND A DEPOSIT PAID TO THE DEPARTMENT OF PUBLIC WORKS AT THE PERMIT COUNTER, 900 SOUTH FREMONT AVENUE 8TH FLOOR, ALHAMBRA AT LEAST 72 HOURS PRIOR TO STARTING WORK UNDER THIS CONTRACT. COPIES OF ALL OTHER REQUIRED PERMITS, SUCH AS FLOOD CONTROL DISTRICT AND ROAD EXCAVATION, MUST BE FILED WITH THE PERMIT APPLICATION.
2. WHEN WORK IS WITHIN A CONTRACT CITY, THE CONTRACTOR MUST CONTACT THE DIRECTOR OF PUBLIC WORKS OF THAT CITY TO DETERMINE THE LOCATION TO PAY THE INSPECTION DEPOSIT.
3. THE CONTRACTOR SHALL CONTACT THE DISTRICT OFFICE LISTED ON THE "APPLICATION FOR STORM DRAIN CONSTRUCTION INSPECTION FORM I" TO ARRANGE FOR AN ACCEPTABLE CONSTRUCTION START DATE.
4. APPROVAL OF THIS PLAN BY THE COUNTY OF LOS ANGELES DOES NOT CONSTITUTE A REPRESENTATION AS TO THE ACCURACY OF THE LOCATION, OR THE EXISTENCE OR NONEXISTENCE OF ANY UNDERGROUND UTILITY, PIPE OR STRUCTURE WITHIN THE LIMITS OF THIS PROJECT. THIS NOTE APPLIES TO ALL SHEETS.
5. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED EDITION OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION", INCLUDING SUPPLEMENTS AND SHALL BE PROSECUTED ONLY IN THE PRESENCE OF THE DIRECTOR OF PUBLIC WORKS.
6. THE CONTRACTOR'S ATTENTION IS DIRECTED IN SECTION 7-10.4.1 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION IN REGARD TO SAFETY ORDERS AND SHALL CONFORM TO THE "MINIMUM PUBLIC SAFETY REQUIREMENTS" AS SHOWN ON LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS STANDARD PLAN 6008-1.

WORK AREA RESTRICTIONS

1. ONCE AUTHORIZED BY THE CITY TO COMMENCE WORK WITHIN THE LACFCD STORM DRAIN, THE CONTRACTOR SHALL NOTIFY THE FLOOD MAINTENANCE DIVISION (IMPERIAL YARD) AT TELEPHONE (562) 861-0316 (8:00AM TO 4:00PM) AND WATER RESOURCES DIVISION (OPERATIONS SECTION) AT TELEPHONE (626) 458-6177 AND PROVIDE THEM WITH A SCHEDULE OF ACTIVITIES A MINIMUM OF 120 HOURS (5 WORKING DAYS) BEFORE STARTING ANY WORK UNDER THE PERMIT.
2. CONTRACTOR SHOULD BE AWARE THAT IMPROVEMENTS WITHIN THE LACFCD STORM DRAIN MAY OCCUR WHEN LARGE FLOWS ARE PRESENT WITHIN THE LACFCD STORM DRAIN, RAIN GAUGES THROUGHOUT THE WATERSHED SHOULD BE MONITORED DURING ALL WORK WITHIN THE LACFCD STORM DRAIN. CONTRACTOR IS RESPONSIBLE FOR SAFELY DIVERTING AND CONVEYING FLOW WITHIN THE WORK AREA THROUGHOUT THE DURATION OF CONSTRUCTION.
3. PRIOR TO ANY WORK WITHIN THE LACFCD STORM DRAIN, THE CONTRACTOR SHALL SUBMIT A WATER DIVERSION PLAN TO THE CITY AND THE LOS ANGELES COUNTY FLOOD CONTROL DISTRICT (LACFCD) TO PROVIDE BYPASS CAPACITY AS FOLLOWS:
   - APRIL 16 TO MAY 31: 300 CFS (33%)
   - JUNE 1 TO AUGUST 31: 50 CFS (5%)
   - SEPTEMBER 1 TO OCTOBER 14: 300 CFS (33%)
   - NO WORK WILL BE ALLOWED IN THE LACFCD STORM DRAIN DURING THE PERIOD OF OCTOBER 15-APRIL 15 PLEASE SEE PERMIT POLICY DURING THE STORM SEASON FOR MORE DETAILS.
4. THE CONTRACTOR SHALL SUBMIT THE WATER DIVERSION PLAN A MINIMUM OF 60-DAYS PRIOR TO THE ANTICIPATED START DATE OF THE WORK TO OCCUR WITHIN THE STORM DRAIN. THE WATER DIVERSION PLAN IS REQUIRED TO BE REVIEWED AND APPROVED BY THE CITY AND LACFCD.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM NOTES

1. IN THE CASE OF EMERGENCY, CALL CITY OF LONG BEACH ENGINEER AT (XXX) XXX-XXXX.
2. SEDIMENT FROM AREAS DISTURBED BY CONSTRUCTION SHALL BE RETAINED ONSITE USING STRUCTURAL CONTROLS TO THE MAXIMUM EXTENT PRACTICABLE.
3. STOCKPILES OF SOIL SHALL BE PROPERLY CONTAINED TO MINIMIZE SEDIMENT TRANSPORTATION FROM THE SITE TO STREETS, DRAINAGE FACILITIES OR ADJACENT PROPERTIES VIA RUNOFF, VEHICLE TRACKING, OR WIND.
4. ALL WORK SHALL BE IN ACCORDANCE WITH THE PROJECT APPROVED STORM WATER POLLUTION PREVENTION PLAN (SWPPP).
5. THE CONTRACTOR IS REQUIRED TO PREPARE AND SUBMIT THE SWPPP FOR APPROVAL BY THE CITY.

ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASBESTOS CONCRETE
CAB	CRUSHED AGGREGATE BASE
CL	CENTERLINE
CULV	CULVERT
DI	DUCTILE IRON
EOC	EDGE OF CONCRETE
EX	EXISTING
FG	FINISHED GRADE
FNC	FENCE
GS	GROUND SURFACE
INV	INVERT
LACFCD	LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
LACSD	LOS ANGELES COUNTY SANITATION DISTRICT
LBC	LONG BEACH CITY
LBWD	LONG BEACH WATER DEPARTMENT
MWD	MUNICIPAL WATER DISTRICT
PO	PUSH-ON
RCP	REINFORCED CONCRETE PIPE
RWA	RECYCLED WATER
TC	TOP OF CURB
TOE	TOE OF SLOPE
TOP	TOP OF SLOPE

LEGEND

- BACK OF FACE
- BACK OF CURB
- FLOW LINE
- CENTER LINE
- SIDEWALK CONCRETE
- DRIVEWAY
- BUILDING
- G — GAS LINE
- W — WATER LINE
- E — ELECTRICAL LINE
- SS — SANITARY SEWER LINE
- SD — STORM DRAIN LINE
- T — TELECOM LINE
- RW — RECYCLED WATER LINE
- 6IN" — PALM TREE WITH DIAMETER
- 4IN" — DECIDUOUS TREE WITH DIAMETER
- STREET LIGHT
- EXISTING GUY WIRE
- UTILITY POLE
- TS — EXISTING TRAFFIC SIGNAL UTILITY BOX
- EB — EXISTING ELECTRICAL BOX
- TB — EXISTING TELEPHONE BOX
- TVB — EXISTING TV CABLE BOX
- P — EXISTING POST
- EXISTING SIGN
- (30) — MAJOR CONTOUR WITH ELEVATION
- (31) — MINOR CONTOUR WITH ELEVATION
- 32.18 GS — SURVEY SHOT ELEVATION AND DESCRIPTION
- LOCAL BENCHMARK
- GV — EXISTING GAS VALVE
- FH — EXISTING FIRE HYDRANT
- WMH — EXISTING WATER MANHOLE
- WM — EXISTING WATER METER
- WV — EXISTING WATER VALVE
- FHV — EXISTING FIRE HYDRANT VALVE
- FM — EXISTING FOUND MONUMENT
- SS — EXISTING SANITARY MANHOLE
- ELEC — EXISTING ELECTRICAL MANHOLE
- TEM — EXISTING TELEPHONE MANHOLE

- FG — FINISHED GRADE
- FS — FINISHED SURFACE
- INV — INVERT
- XX.XX — PROPOSED ELEVATION
- (XX.XX) — EXISTING ELEVATION
- S=X.XXXX — PROPOSED SLOPE OF PIPE
- (S=X.XXXX) — EXISTING SLOPE OF PIPE
- X:X — RATIO SLOPE
- MH — MAINTENANCE HOLE
- TG — TOP OF GRATE
- RIM — MAINTENANCE RIM ELEVATION
- X.XX% — GRADE SLOPE
- (X.XX%) — EXISTING GRADE SLOPE
- (XX) — EXISTING CONTOUR
- XX — PROPOSED CONTOUR
- FENCE LINE
- EXISTING FENCE LINE
- LIMITS OF WORK
- LANDSCAPE AREA
- TOP AND TOE OF SLOPE
- DISSIMILAR MATERIAL COUPLER
- UTILITY VALVE
- ACCESS SWING GATE
- R/W — RIGHT-OF-WAY
- PROPOSED STORM DRAIN
- UNDERGROUND STORAGE FOOTPRINT
- DECOMPOSED GRANITE MAINTENANCE ACCESS ROAD
- RIRPAP SLOPE PROTECTION
- NURSERY AREA
- GRAVEL PATH
- GRADING SECTION CALL OUT
- HP/LP — HIGH POINT/ LOW POINT

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REVISIONS				DESCRIPTION
No.	DATE	SHEET	APPROVAL	
AS-BUILT:				

REF. DWG. X-XXXX DWG. X-XXXX
DWG. X-XXXX

DESIGNED BY: AMT
DRAWN BY: AMT
DESIGN CHECK BY:
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
ERIC M. TORRESON
NO. 66068
EXP. 6-30-26
CIVIL
STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT GENERAL NOTES

PAGE

FIELD BOOK X.X.X.

DRAWING REF. G1

MUNIS Project # XXXX-XXXX-XXXX

Phase# XXXX / Rebid: N/A

SHEET 2 OF 70

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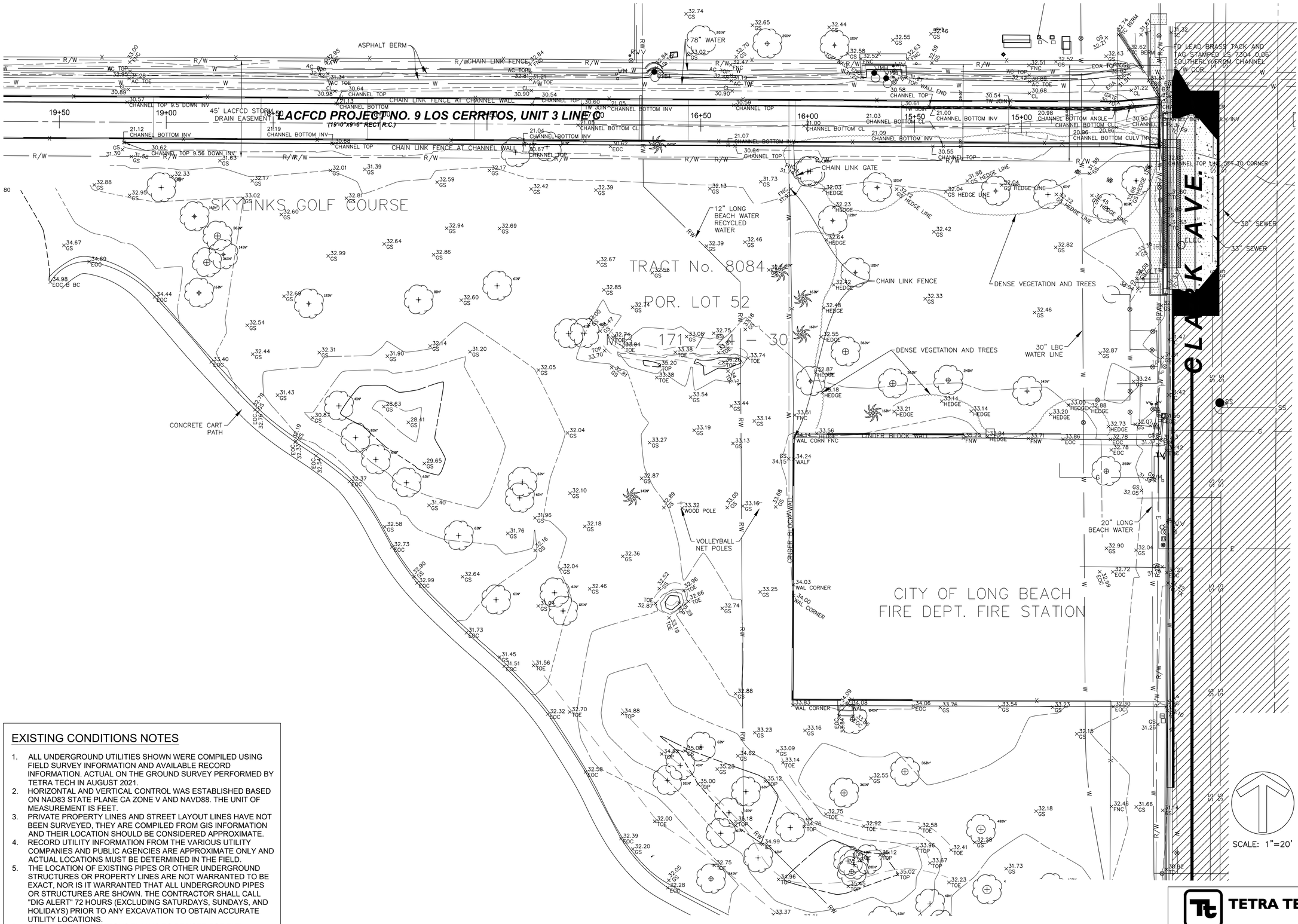

EXISTING CONDITIONS NOTES

1. ALL UNDERGROUND UTILITIES SHOWN WERE COMPILED USING FIELD SURVEY INFORMATION AND AVAILABLE RECORD INFORMATION. ACTUAL ON THE GROUND SURVEY PERFORMED BY TETRA TECH IN AUGUST 2021.
2. HORIZONTAL AND VERTICAL CONTROL WAS ESTABLISHED BASED ON NAD83 STATE PLANE CA ZONE V AND NAVD88. THE UNIT OF MEASUREMENT IS FEET.
3. PRIVATE PROPERTY LINES AND STREET LAYOUT LINES HAVE NOT BEEN SURVEYED, THEY ARE COMPILED FROM GIS INFORMATION AND THEIR LOCATION SHOULD BE CONSIDERED APPROXIMATE.
4. RECORD UTILITY INFORMATION FROM THE VARIOUS UTILITY COMPANIES AND PUBLIC AGENCIES ARE APPROXIMATE ONLY AND ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD.
5. THE LOCATION OF EXISTING PIPES OR OTHER UNDERGROUND STRUCTURES OR PROPERTY LINES ARE NOT WARRANTED TO BE EXACT, NOR IS IT WARRANTED THAT ALL UNDERGROUND PIPES OR STRUCTURES ARE SHOWN. THE CONTRACTOR SHALL CALL "DIG ALERT" 72 HOURS (EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS) PRIOR TO ANY EXCAVATION TO OBTAIN ACCURATE UTILITY LOCATIONS.
6. THE EXISTING CONDITIONS PLAN IS TO BE USED FOR THE SPECIFIED PROJECT ONLY AND IS NOT WARRANTED TO BE COMPLETE FOR ANY OTHER FUTURE PROJECTS.

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DWG. X-XXXX

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DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
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CIVIL
STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT EXISTING CONDITIONS

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PAGE

FIELD BOOK X.X.X.

MUNIS Project # XXXX-XXXX-XXXX

Phase# XXXX / Rebid: N/A

SHEET 3 OF 70

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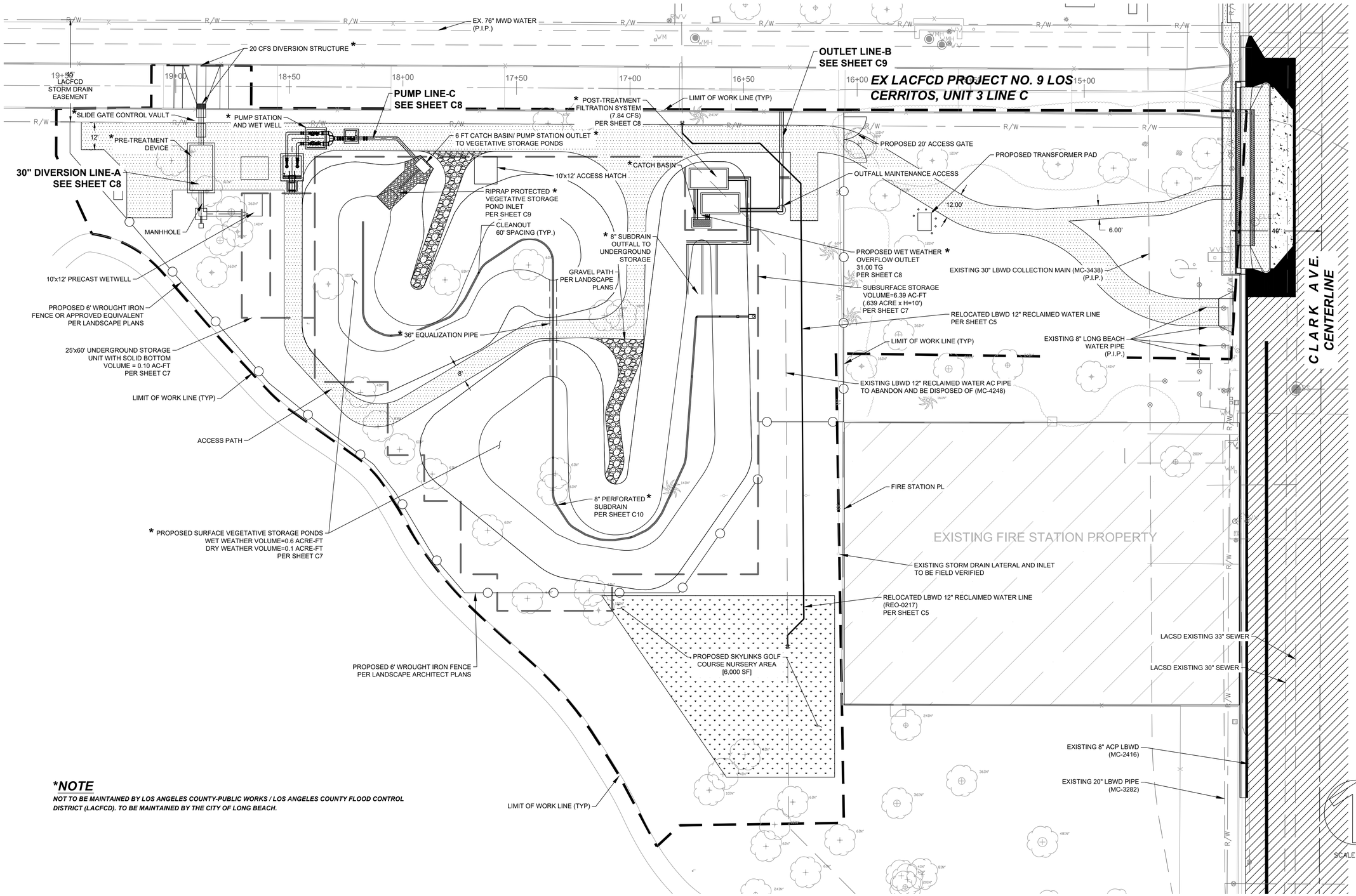

***NOTE**

NOT TO BE MAINTAINED BY LOS ANGELES COUNTY-PUBLIC WORKS / LOS ANGELES COUNTY FLOOD CONTROL DISTRICT (LACFCD). TO BE MAINTAINED BY THE CITY OF LONG BEACH.

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION
				AS-BUILT:
				REF. DWG. X-XXXX DWG. X-XXXX
				DWG. X-XXXX

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DRAWN BY: AMT
DESIGN CHECK BY:
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
ERIC M. TORRESON
NO. 66068
EXP. 6-30-26
CIVIL
STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT SITE PLAN

DRAWING REF. C2

PAGE

FIELD BOOK X.X.X.

MUNIS Project # XXXX-XXXX-XXXX

Phase# XXXX / Rebid: N/A

SHEET 4 OF 70

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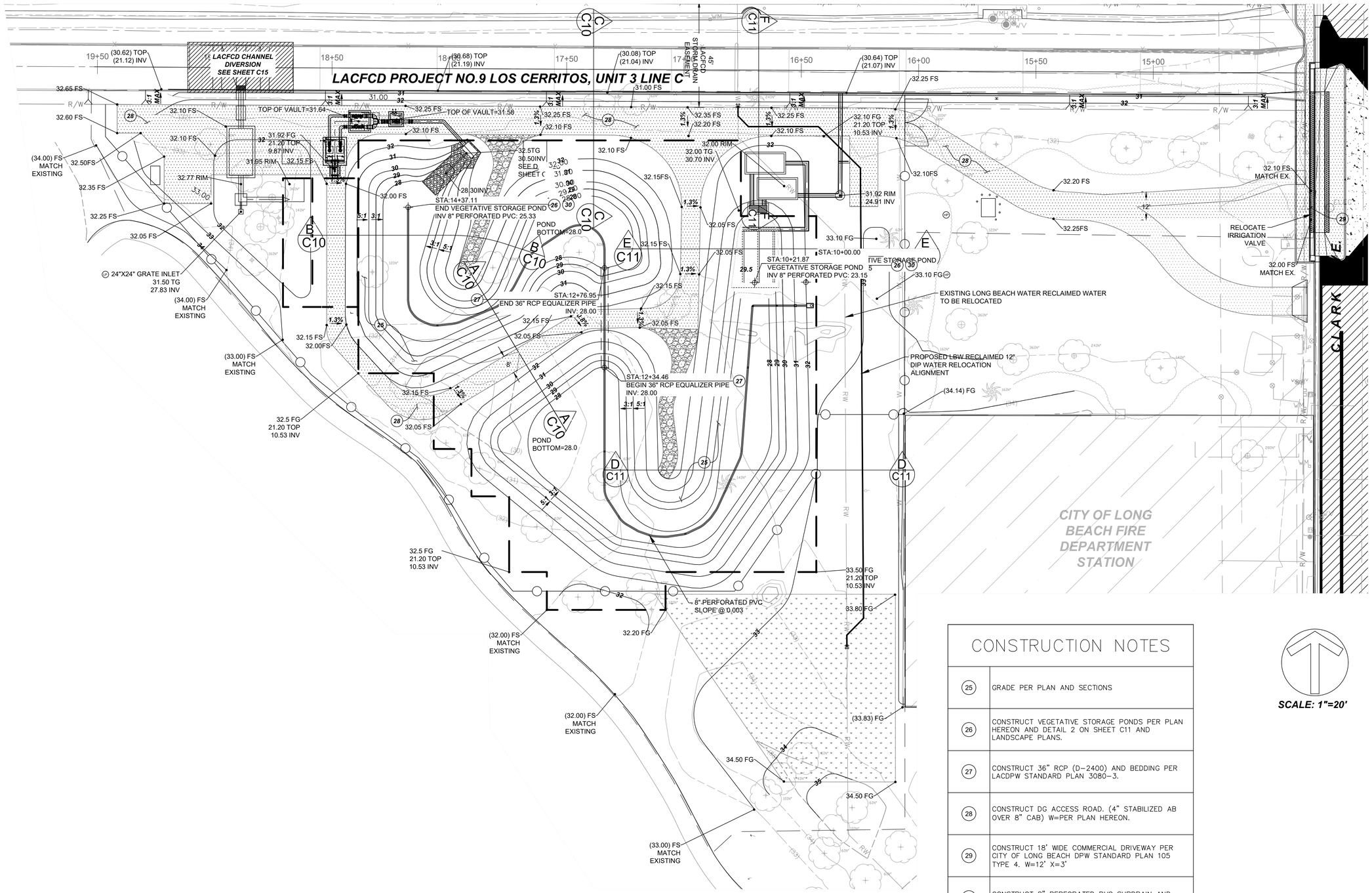

SCALE: 1"=20'

CONSTRUCTION NOTES

25	GRADE PER PLAN AND SECTIONS
26	CONSTRUCT VEGETATIVE STORAGE PONDS PER PLAN HEREON AND DETAIL 2 ON SHEET C11 AND LANDSCAPE PLANS.
27	CONSTRUCT 36" RCP (D-2400) AND BEDDING PER LACDPW STANDARD PLAN 3080-3.
28	CONSTRUCT DG ACCESS ROAD. (4" STABILIZED AB OVER 8" CAB) W=PER PLAN HEREON.
29	CONSTRUCT 18' WIDE COMMERCIAL DRIVEWAY PER CITY OF LONG BEACH DPW STANDARD PLAN 105 TYPE 4. W=12' X=3'
30	CONSTRUCT 8" PERFORATED PVC SUBDRAIN AND CLEANOUTS PER SUBDRAIN DETAIL ON SHEET C10.

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION

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DWG. X-XXXX

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DRAFTING CHECK BY:

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ERIC M. TORRESON
NO. 66068
EXP. 6-30-26
CIVIL
STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT GRADING PLAN

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PAGE

FIELD BOOK X.X.X.

MUNIS Project # XXXX-XXXX-XXXX

Phase# XXXX / Rebid: N/A

SHEET 5 OF 70

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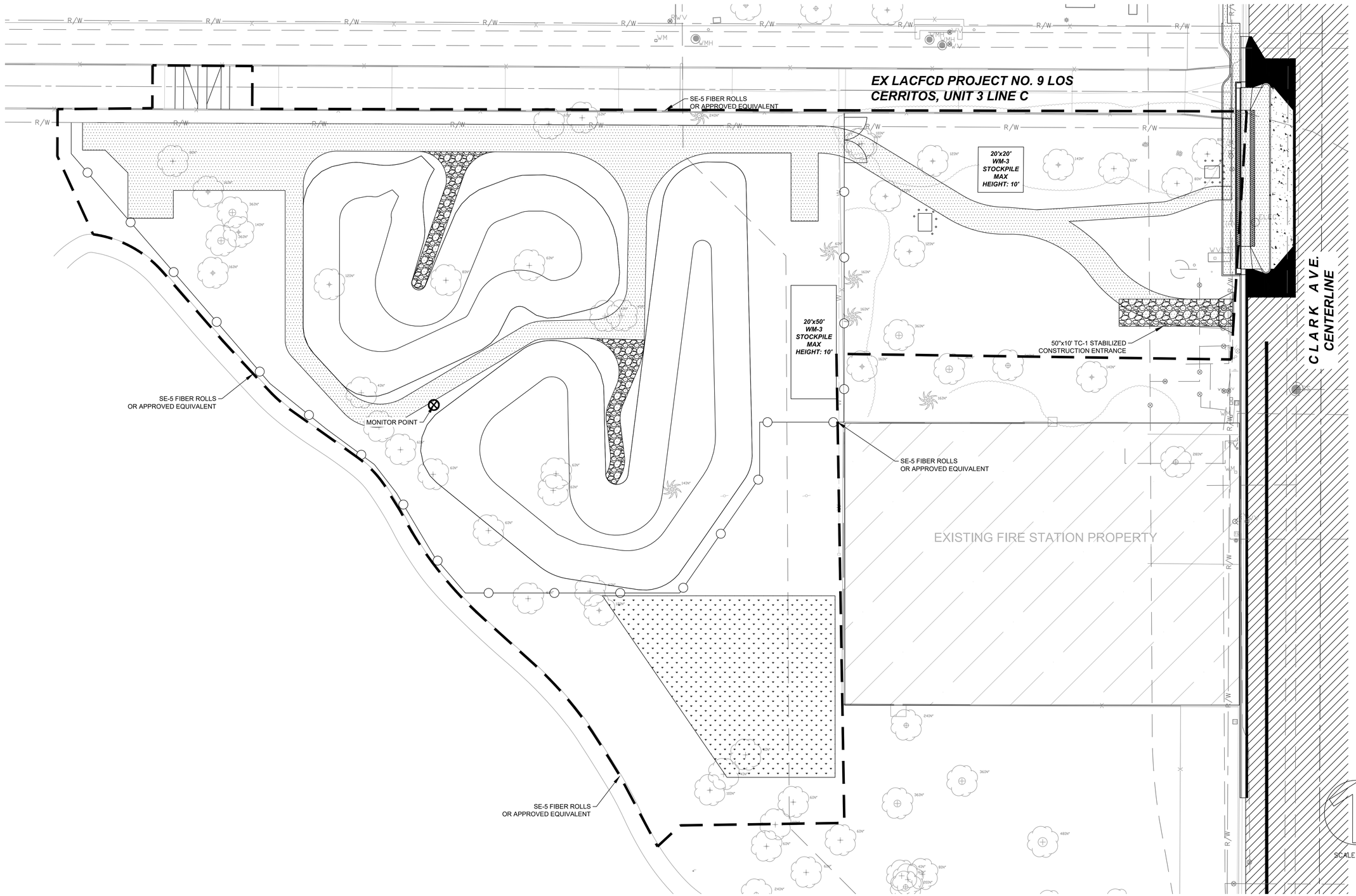

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SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT SWPPP

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MUNIS Project # XXXX-XXXX-XXXX

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SHEET 6 OF 70

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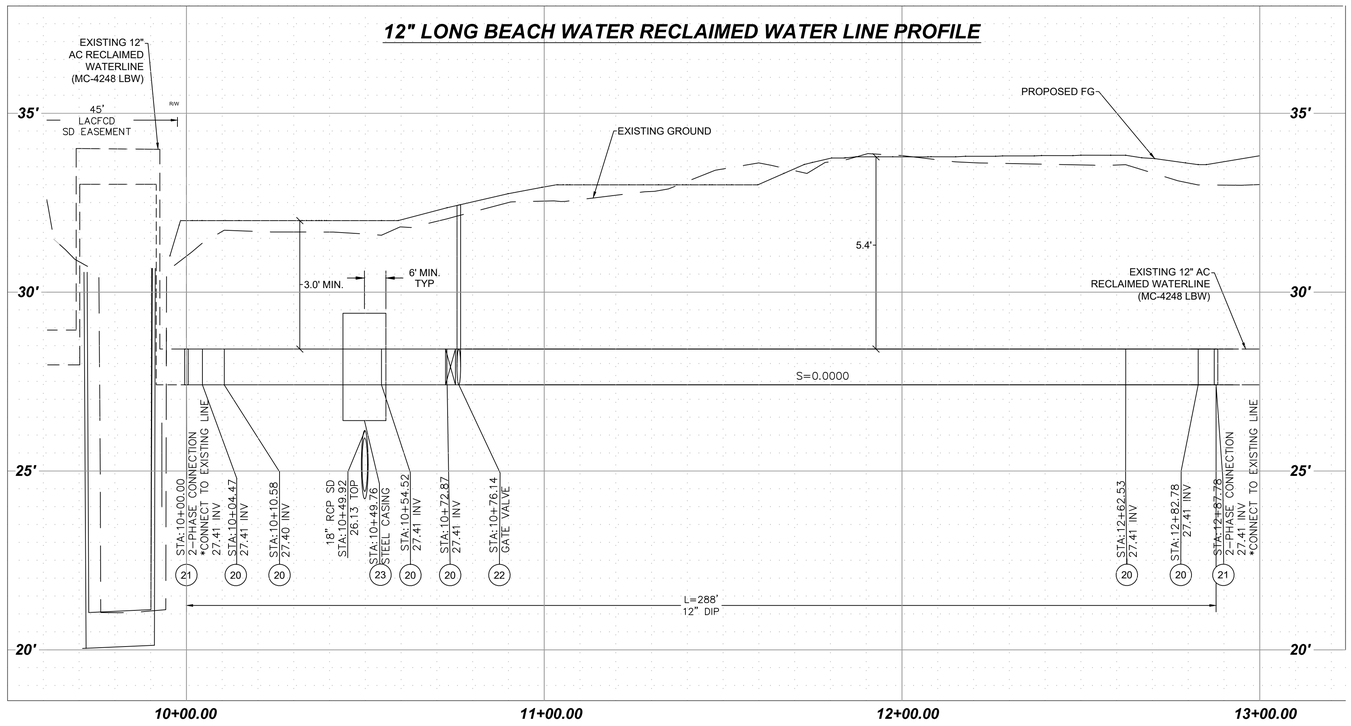
12" LONG BEACH WATER RECLAIMED WATER LINE PROFILE



PROFILE SCALE
HORIZ.: 1" = 20'
VERT.: 1" = 2'

CONSTRUCTION NOTES

(19)	INSTALL 12" DIP (CL-52) PIPE. TRENCHING AND BEDDING PER LBWD WDS-406 SEE SHEET C23.
(20)	INSTALL 45° DIP BEND AND THRUST BLOCK PER LONG BEACH WATER STANDARD DWG WDS-107, 2,000 PSF ALLOWABLE BEARING VALUE. SEE SHEET C23.
(21)	INSTALL 2-PHASE CONNECTION PER WDS-101 SEE SHEET C24
(22)	INSTALL 12" P.O. GATE VALVE WITH A 24"-SQUARE CONCRETE PAD 6" ABOVE FINISHED SURFACE PER LBWD STANDARD PLAN WDS-115, WDS-116, AND WDS-119 SEE SHEET C24
(23)	INSTALL STEEL CASING PER WDS-106 SEE SHEET C24

* WATER GENERAL NOTES:

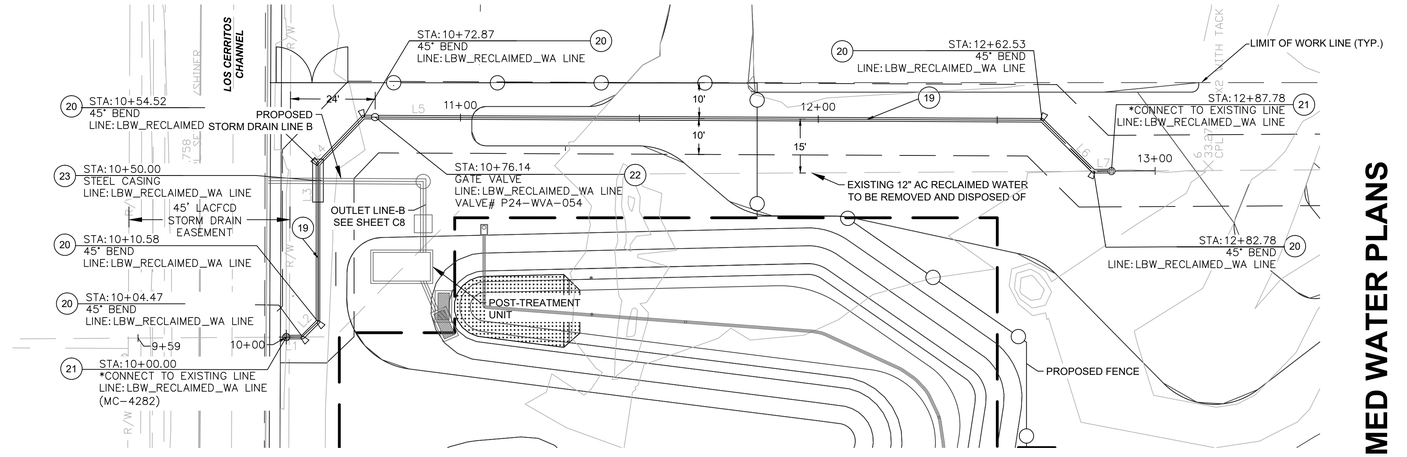
1. ***VERIFY PIPE MATERIAL, AND HORIZONTAL AND VERTICAL LOCATION AT CONNECTION POINTS PRIOR TO START OF CONSTRUCTION. NOTIFY THE ENGINEER OF ANY DISCREPANCIES WITH THE PLANS PRIOR TO START OF WORK.***
2. ***CUTTING OF AC PIPE IS NOT ALLOWED. CONTRACTOR SHALL REMOVE AC PIPE TO THE NEAREST JOINT.***

WATER LINE TABLE

LINE #	START NORTHING	START EASTING	END NORTHING	END EASTING
L1	1758079.36	6520700.36	1758078.03	6520700.54
L2	1758078.03	6520700.54	1758074.11	6520704.40
L3	1758074.11	6520704.40	1758073.86	6520734.72
L4	1758073.86	6520734.72	1758070.32	6520752.98
L5	1758070.32	6520752.98	1757864.22	6520753.82
L6	1757864.22	6520753.82	1757856.95	6520746.65
L7	1757856.95	6520746.65	1757852.10	6520746.81

FITTING TABLE

STATION	SIZE	TYPE
10+00.00	12"	CONNECTION
10+04.47	12"	45° BEND
10+10.58	12"	45° BEND
10+54.52	12"	45° BEND
10+72.87	12"	45° BEND
10+76.14	12"	GATE
12+62.53	12"	45° BEND
12+82.78	12"	45° BEND
12+87.78	12"	CONNECTION



12" LONG BEACH WATER RECLAIMED WATER LINE

SCALE: 1"=20'

VALVE INFORMATION TABLE

GIS STRUCTURE	SIZE (IN.)	MAKE (MFG.)	STEM DEPTH	NO. OF TURNS	PIPE COVER	NORTH – SOUTH STREET	DIST. FROM PROP. LINE	DIST. FROM CURB	EAST – WEST STREET	DIST. FROM PROP. LINE	DIST. FROM CURB	DRAWING/FILE NO. REMARKS	ABANDONED VALVE GIS STRUCTURE
P24-WVA-054	12			6	3'	CLARK AVE		180'	LOS CERRITOS CHANNEL				MC-4248

RECLAIMED WATER PLANS

C5

REV.	DATE	DESCRIPTION	BY	CK'D.	APP'D.

DEPARTMENT	INPUT BY	DATE
FIRE	–	–
CITY ENG.	–	–
LB ENERGY	–	–
EDISON CO.	–	–
VERIZON	–	–

DESIGNED BY name DATE / /
CHECKED BY X DATE / /
CORRECTED BY DATE
AS-BUILT BY DATE
POSTED GIS DATE
GATE VALVES REC. DATE
CONSTRUCTED BY DATE

SCALE 1"= 40'
SERVICE ATLAS PAGE N/A
GIS TILE N/A
SECTION MAP VARIOUS

SPEC. NO ___ CONTRACT NO.

RECOMMENDED MANAGER OF ENGINEERING ____ DATE

APPROVED DIRECTOR OF ENGINEERING / CHIEF ENGINEER ____ DATE

LONG BEACH WATER DEPARTMENT
CHRISTOPHER J. GARNER
GENERAL MANAGER

811 Know what's below. Call before you dig.

PROJECT - SPECIFIC
XXXX

DRAWING / FILE NUMBER: REO-0217
FAMIS PROJECT: TBD
MUNIS PROJECT: TBD
SHEET 7 OF 70

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GENERAL CONSTRUCTION NOTES

1. ALL WORK AND MATERIALS SHALL BE APPROVED BY LBWD AND BE IN ACCORDANCE WITH THE AMENDMENTS TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION LATEST EDITION (GREEN BOOK), THE CURRENT LBWD STANDARD DRAWINGS, AND THE LATEST LBWD STANDARDS AND SPECIFICATIONS FOR THE CONSTRUCTION OF WATER AND SEWER FACILITIES. THE CONTRACTOR IS REQUIRED TO HAVE THESE SPECIFICATIONS ON THE JOB SITE AT ALL TIMES.

2. THE CONTRACTOR SHALL ARRANGE FOR A PRE-CONSTRUCTION MEETING WITH THE LBWD PROJECT ENGINEER AT (562-570-2419) A MINIMUM OF SEVEN (7) BUSINESS DAYS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL APPLY FOR INSPECTION FROM THE LBWD AT (562-570-2432) AT LEAST 48 HOURS PRIOR TO STARTING WORK ON ANY PROJECT.

3. THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT AT (811) A MINIMUM OF TWO DAYS PRIOR TO EXCAVATION.

4. THE CONTRACTOR SHALL NOTIFY ALL UTILITIES IMPACTED BY THIS PROJECT AND REQUEST THEIR ATTENDANCE TO THE PRE-CONSTRUCTION MEETING.

5. THE CONTRACTOR SHALL VERIFY THE LOCATION, DEPTH, VERTICAL AND HORIZONTAL ALIGNMENT AND PROTECT-IN-PLACE ALL EXISTING WATER MAINS AND UNDERGROUND STRUCTURES.

6. ALL PIPELINE STATIONS AND OFFSETS ARE REFERENCED TO CENTERLINE OF STREET EXCEPT AS NOTED.

7. GRADE POINT ELEVATIONS ARE TO BOTTOM OF PIPE EXCEPT WHERE OTHERWISE NOTED.

8. VALVE NUMBERS ARE FOR LBWD RECORD ONLY.

9. WATER MAIN INSTALLATION SHALL NOT BE PERFORMED UNTIL THE NEW STREETS HAVE BEEN BROUGHT TO SUB GRADE ELEVATIONS AND COMPACTED TO 90% RELATIVE DENSITY.

10. THE CONTRACTOR SHALL REMOVE AND RESTORE EXISTING ROADWAY PAVEMENT, SIDEWALK, CURB AND OTHER SURFACE IMPROVEMENTS OVER THE PIPE TRENCH AND PLACE TEMPORARY RESURFACING IN ACCORDANCE WITH THE APPLICABLE PROVISION OF THE STANDARD SPECIFICATIONS AS SUPPLEMENTED BY LBWD STANDARD DRAWINGS NO. WDS-406 FOR TRENCH RESTORATION. LONG BEACH WATER DEPARTMENT RESERVES THE RIGHT TO REQUIRE SLURRY BACKFILL AT ITS DISCRETION.

11. SEPARATION BETWEEN WATER MAINS AND SANITARY SEWERS SHALL COMPLY WITH THE "CRITERIA FOR THE SEPARATION OF WATER MAINS AND SANITARY SEWERS," PREPARED BY THE DEPARTMENT OF HEALTH, STATE OF CALIFORNIA AND LBWD STANDARD DRAWINGS WDS-405.

12. FOR WATER SERVICE DURING CONSTRUCTION, CONTRACTOR SHALL CONTACT LBWD AT (562-570-2419) REGARDING SERVICE APPLICATION AND WATER COSTS.

13. THE CONTRACTOR IS REQUIRED TO SUBMIT TRENCH GRADE SHEETS SHOWING ELEVATIONS TO BOTTOM OF PIPE PRIOR TO WATER LINE CONSTRUCTION.

14. BACTERIAL COLIFORM TESTS WILL BE PERFORMED BY AN APPROVED LAB OR THE LBWD. ALL FEES AS PUBLISHED IN THE RULES AND REGULATIONS ADOPTED JANUARY 2003 ASSOCIATED WITH THE BACTERIAL TESTS ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL CONTACT LBWD PROJECT ENGINEER TO MAKE ARRANGEMENTS FOR ALL REQUIRED BACTERIAL COLIFORM TESTS. THE CONTRACTOR SHALL MAKE PROVISIONS FOR TEMPORARY FILLING CONNECTIONS, DISINFECTION, PRESSURE TESTING, FLUSHING AND DRAINING. THESE PROVISIONS MUST BE PRESENTED TO THE LBWD FOR APPROVAL PRIOR TO THE START OF CONSTRUCTION. HYDROSTATIC TESTS ARE THE RESPONSIBILITY OF THE CONTRACTOR. ALL TESTS SHALL BE COMPLETED AND ACCEPTED PRIOR TO TIE-INS TO EXISTING WATER LINES.

15. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND MATERIAL LISTS FOR APPROVAL TO LBWD AND SHALL HAVE ALL VALVES, PIPING AND APPURTENANCES ON JOB SITE BEFORE BEGINNING CONSTRUCTION.

16. PLANS SHALL COMPLY WITH LONG BEACH FIRE DEPARTMENT (LBFD) REQUIREMENTS. LBFD STAMPED PLAN APPROVAL MUST BE OBTAINED PRIOR TO PLAN APPROVAL BY LBWD.

17. CONSTRUCTION HOURS ARE LIMITED FROM 7:00 A.M. TO 3:30 P.M. MONDAY THROUGH FRIDAY EXCEPT LBWD HOLIDAYS OR AS REQUIRED BY THE PERMIT. ARRANGEMENTS FOR INSPECTION AT OTHER TIMES REQUIRE PRIOR APPROVAL FROM LBWD.

18. LBWD'S RESPONSIBILITY ENDS AT THE METER (OR DCDA FOR FIRELINE SERVICES), OR AS SHOWN ON THE DESIGN DRAWING. ALL OTHER LINES EXTENDING FROM THIS POINT FALL UNDER THE DEVELOPER OR HOMEOWNER'S RESPONSIBILITY.

MATERIALS

19. ALL MATERIALS MUST CONFORM TO THE LATEST LBWD SPECIFICATIONS FOR THE CONSTRUCTION OF WATER AND SEWER FACILITIES FOR DEVELOPER BUILT PROJECTS UNLESS OTHERWISE SPECIFIED AND APPROVED BY LBWD. IN LIEU OF REFERENCE TO LBWD SPECIFICATIONS, ALL STEEL HARDWARE SHALL BE TYPE 304 STAINLESS. NO CARBON STEEL SHALL BE USED.

20. PIPE TO BE DUCTILE IRON PRESSURE CLASS 52 AND CONFORM TO ANSI/AWWA C150, C151 AND C104. TYTON-TYPE JOINTS AND PUSH-ON FITTINGS SHALL BE USED UNLESS OTHERWISE NOTED.

21. ALL DUCTILE IRON FITTINGS, GATE VALVES, BOLTED COUPLINGS, AND ALL METAL SURFACES OF THE RODS AND CLAMPS SHALL BE COATED WITH NO-OX-ID COMPOUND AND WRAPPED WITH NO-OX-ID TAPE AND SHALL BE ENCASED IN 6 INCHES OF WASHED SAND.

22. THRUST BLOCKS AND RESTRAINT JOINT SYSTEMS SHALL BE INSTALLED AT ALL VERTICAL AND HORIZONTAL BENDS AS NOTED ON THE PLANS. (THRUST BLOCKS USE 2000 LBS. SOIL BEARING VALUE PER WDS-107.)

23. DUCTILE IRON PIPE DIAMETERS 12" AND LESS SHALL USE "FIELD LOK" RESTRAINTS OR APPROVED EQUAL. DUCTILE IRON PIPE DIAMETERS LARGER THAN 12-INCH SHALL USE TR-FLEX RESTRAINTS OR APPROVED EQUAL.

24. SERVICE SADDLES AND CORPORATIONS SHALL BE COATED WITH NO-OX-ID COMPOUND AND WRAPPED WITH NO-OX-ID TAPE. DUCTILE IRON PIPE SHALL BE ENCASED WITH POLYETHYLENE WRAP AND IDENTIFICATION TAPE.

METERS

25. THE LBWD IS RESPONSIBLE FOR THE INSTALLATION OF THE WATER METER ONLY. UPON RECEIPT OF THE APPLICATION AND PAYMENT OF THE PUBLISHED FEES, THE LBWD WILL FURNISH THE METER BOX FOR INSTALLATION BY THE CONTRACTOR. CONTRACTOR MAY ORDER THE METER BOX OUTSIDE LBWD, IN WHICH SPECIFICATION SHEET SHALL BE PROVIDED TO LBWD FOR REVIEW AND APPROVAL. THE LBWD INSPECTOR WILL CHECK THE INSTALLATION, METER BOX PLACEMENT AND ALL APPURTENANCES INSTALLED BY THE CONTRACTOR BEFORE METER INSTALLATION. DETECTOR CHECK (DC) IS OBSOLETE. A USC-APPROVED DOUBLE CHECK DETECTOR ASSEMBLY (DCDA) WILL BE USED. AN ABOVE GROUND INSTALLATION IS REQUIRED FOR THESE UNITS.

26. ANY WATER SERVICE BEING USED FOR IRRIGATION WILL REQUIRE A LBWD APPROVED BACK FLOW DEVICE INSTALLED ABOVE GRADE BY THE DEVELOPER/CONTRACTOR.

27. DOMESTIC WATER SERVICE REQUIRING A BACKFLOW DEVICE MUST GET LBWD APPROVAL PRIOR TO INSTALLATION. CONTACT THE LBWD METER SHOP AT (562-570-2415).

28. ALL WATER METER SIZES 4" AND ABOVE WILL BE INSTALLED ABOVE GRADE AND THE DIMENSIONS REQUIRED FOR METER INSTALLATION CANNOT BE MODIFIED.

29. THE CONTRACTOR SHALL FURNISH AND INSTALL STANDARD HOUSE CONNECTIONS.

30. THE LOCATION OF THE WATER SERVICE IS TO BE PERMANENTLY MARKED ON THE TOP OF THE CURB WITH A "W". THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND CONDITION OF ALL WATER SERVICES UNTIL SUCH TIME AS LBWD HAS INSTALLED THE INDIVIDUAL METERS.

31. ALL SERVICES ARE TO BE METERED. BACK FLOW PREVENTION DEVICES ARE SUBJECT TO REVIEW AND APPROVAL OF THE LBWD.

32. HOUSE WATER SERVICE LOCATIONS SHALL BE VERIFIED IN THE FIELD TO AVOID CONFLICTS WITH DRIVEWAYS, HOUSE WALKS, FIRE HYDRANTS, ETC.

33. NO WATER SERVICE SHALL BE CLOSER THAN TWO (2) FEET TO A COUPLING.

34. A MINIMUM SEPARATION BETWEEN WATER SERVICES SHALL BE THREE (3) FEET.

35. WATER METER BOXES SHALL BE LOCATED PERPENDICULAR TO AND BEHIND THE CURB.

SHUTDOWNS

36. ONLY THE LBWD AND THEIR APPROVED REPRESENTATIVES SHALL OPERATE VALVES. WHEN IT IS NECESSARY TO SHUT DOWN AN EXISTING WATER SYSTEM FOR THE PURPOSES OF CONNECTING TO AND/OR THE TESTING OF THE NEWLY INSTALLED FACILITIES. THE CONTRACTOR SHALL REQUEST A SCHEDULED SHUT DOWN FROM THE LBWD THROUGH THE PROJECT INSPECTOR. THE CONTRACTOR SHALL GIVE A MINIMUM ADVANCE NOTICE OF SEVEN (7) DAYS WHEN REQUESTING LBWD VALVE OPERATIONS.

37. THE CONTRACTOR SHALL NOTIFY THE LOCAL BUSINESSES AND RESIDENTS IN WRITING SEVEN (7) DAYS PRIOR TO THE DATE OF THE CONSTRUCTION WITH A NOTICE INFORMING THEM OF ALL POSSIBLE INCONVENIENCES INCURRED BY THE CONSTRUCTION. CONTRACTOR SHALL FOLLOW WITH A (24) HOUR DOOR HANGER REMINDER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISTRIBUTION OF ALL NOTICES. SAID NOTIFICATIONS SHALL INCLUDE CONTRACTOR'S NAME AND TELEPHONE NUMBER FOR CONTACT.

38. THE LBWD CANNOT GUARANTEE A COMPLETE SHUTDOWN OF EXISTING WATER MAINS DUE TO THE AGE AND CONDITION OF EXISTING VALVES. THE LBWD WILL ATTEMPT TO SHUT DOWN APPLICABLE MAINS AS COMPLETELY AS POSSIBLE; HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DEWATERING OF THE CONSTRUCTION SITE AND THE PROPER DISPOSAL OF WATER RUN OFF IN ACCORDANCE WITH THE NPDES REQUIREMENTS.

39. IN CASES WHERE THE LBWD DETERMINES THAT THE PROPOSED SHUT DOWN MAY NOT BE FEASIBLE OR MAY CAUSE AN EXCESSIVE HARDSHIP TO EXISTING CUSTOMERS, THE DEVELOPER/CONTRACTOR WILL BE REQUIRED TO PROPOSE AN ALTERNATIVE PLAN FOR LBWD APPROVAL EXPLAINING THE CONSTRUCTABILITY OF THE DESIGN. CONTINGENCY PLANS INCLUSIVE OF BOTTLED WATER AND PORTABLE TOILETS PER NUMBER OF CUSTOMERS MAY BE REQUIRED.

40. THE SHUTDOWN OF WATER SERVICES FOR THE PURPOSE OF CONSTRUCTION SHALL BE LIMITED TO A MAXIMUM OF FOUR (4) HOURS. FOR CONSTRUCTION THAT EXCEEDS (4) HOURS THE CONTRACTOR MUST PROVIDE TEMPORARY HIGH LINE CONNECTIONS WHERE DEEMED APPLICABLE BY THE LBWD.

REV.	DATE	DESCRIPTION	BY	CK'D.	APP'D.

DEPARTMENT	INPUT BY	DATE
FIRE	–	–
CITY ENG.	–	–
LB ENERGY	–	–
EDISON CO.	–	–
VERIZON	–	–

DESIGNED BY name DATE / /
CHECKED BY _X_ DATE / /
CORRECTED BY DATE
AS-BUILT BY DATE
POSTED GIS DATE
GATE VALVES REC. DATE
CONSTRUCTED BY DATE

SCALE 1"= 40'
SERVICE ATLAS PAGE N/A
GIS TILE N/A
SECTION MAP VARIOUS

SPEC. NO ___ CONTRACT NO.

RECOMMENDED_____ DATE
MANAGER OF ENGINEERING

APPROVED_____ DATE
DIRECTOR OF ENGINEERING / CHIEF ENGINEER

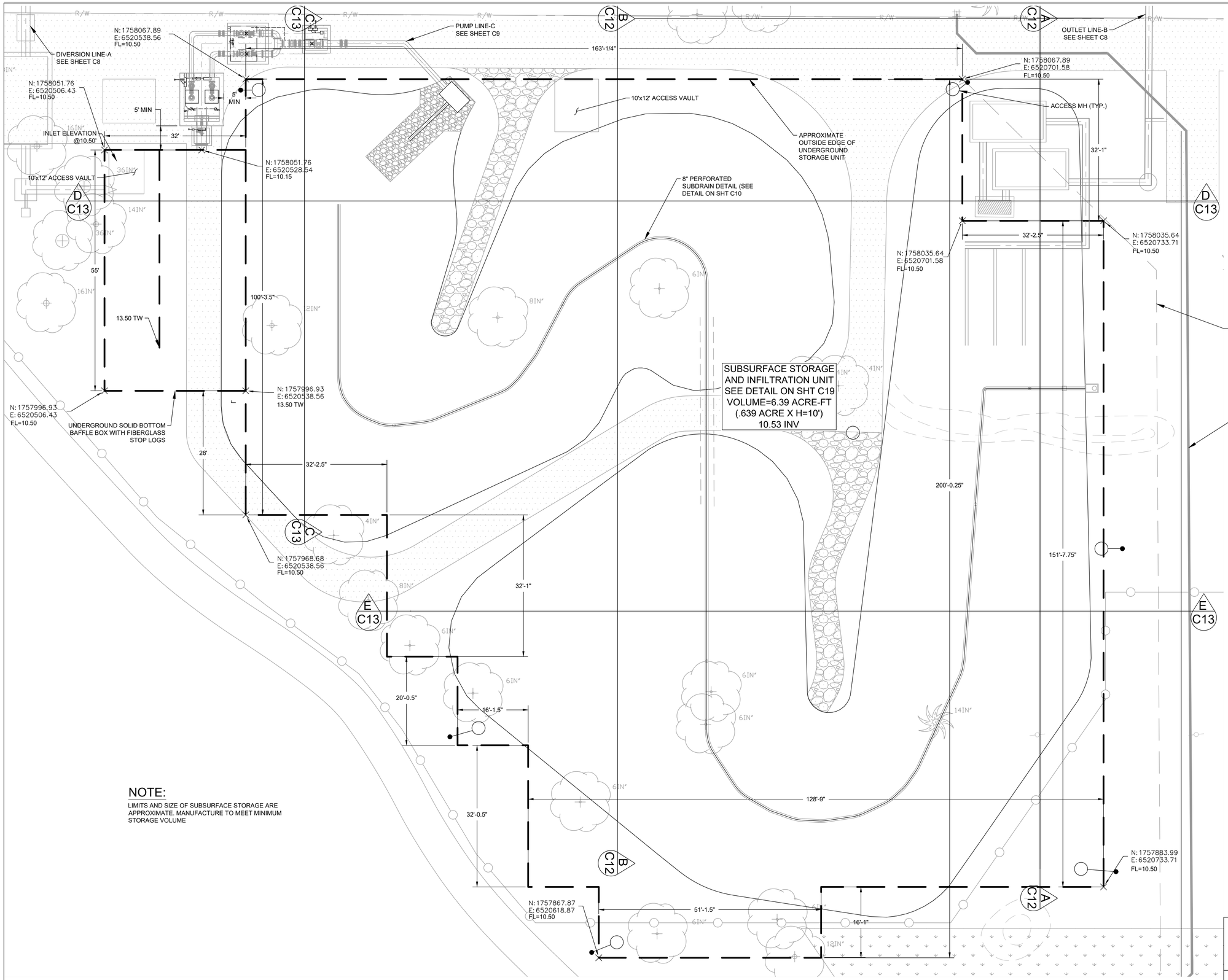
LONG BEACH WATER DEPARTMENT
CHRISTOPHER J. GARNER
GENERAL MANAGER

811 Know what's below. Call before you dig.

PROJECT - SPECIFIC
XXXX

DRAWING / FILE NUMBER: REO–0217
FAMIS PROJECT: TBD
MUNIS PROJECT: TBD
SHEET 8 OF 70

LAST SAVED BY: ryan.cheyne
PLOT DATE: Jun. 17, 25 SAVED PATH: P:\Wotr\141970.01 clb skylinks phase 2\05 design\02 Sheets



NOTE:

LIMITS AND SIZE OF SUBSURFACE STORAGE ARE APPROXIMATE. MANUFACTURE TO MEET MINIMUM STORAGE VOLUME

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION
				AS-BUILT:

REF. DWG. X-XXXX DWG. X-XXXX
DWG. X-XXXX

DESIGNED BY: AMT
DRAWN BY: AMT
DESIGN CHECK BY:
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
ERIC M. TORRESON
NO. 66068
EXP. 6-30-26
CIVIL
STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT STORAGE PLAN

DRAWING REF. C7

PAGE

FIELD BOOK X.X.X.

MUNIS Project # XXXX-XXXX-XXXX

Phase# XXXX / Rebid: N/A

SHEET 9 OF 70

NOTE:

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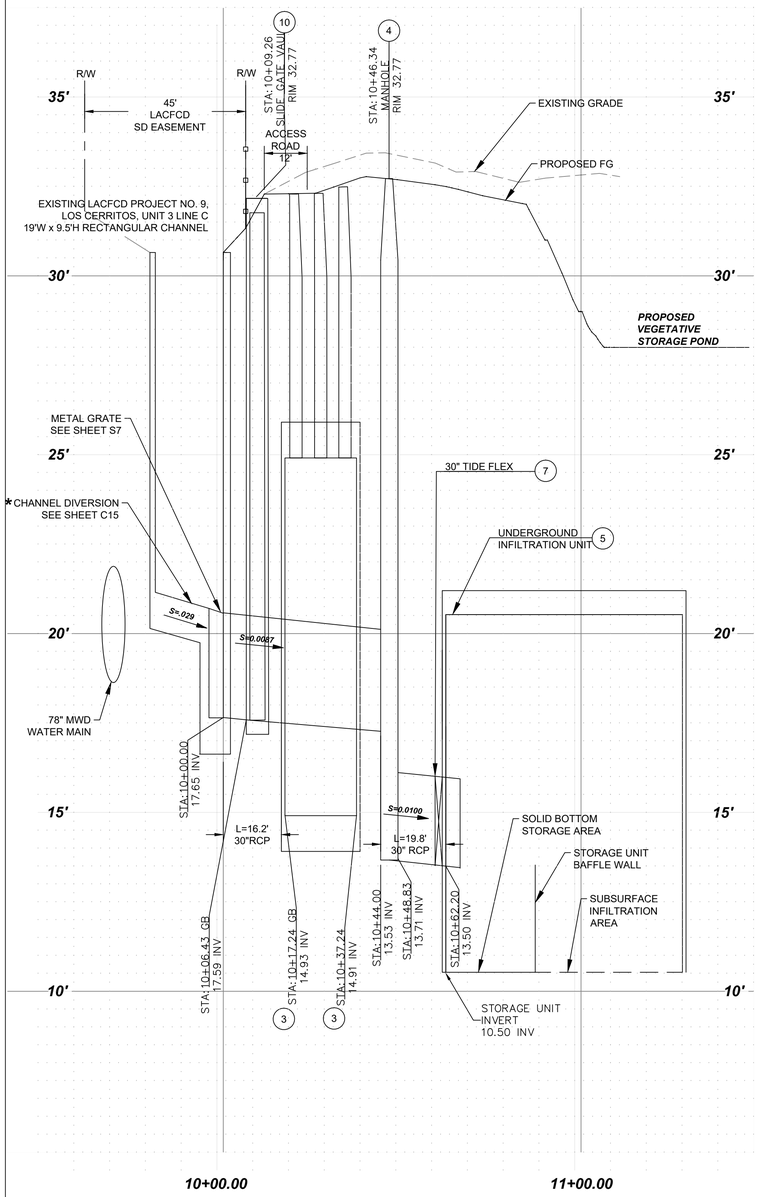
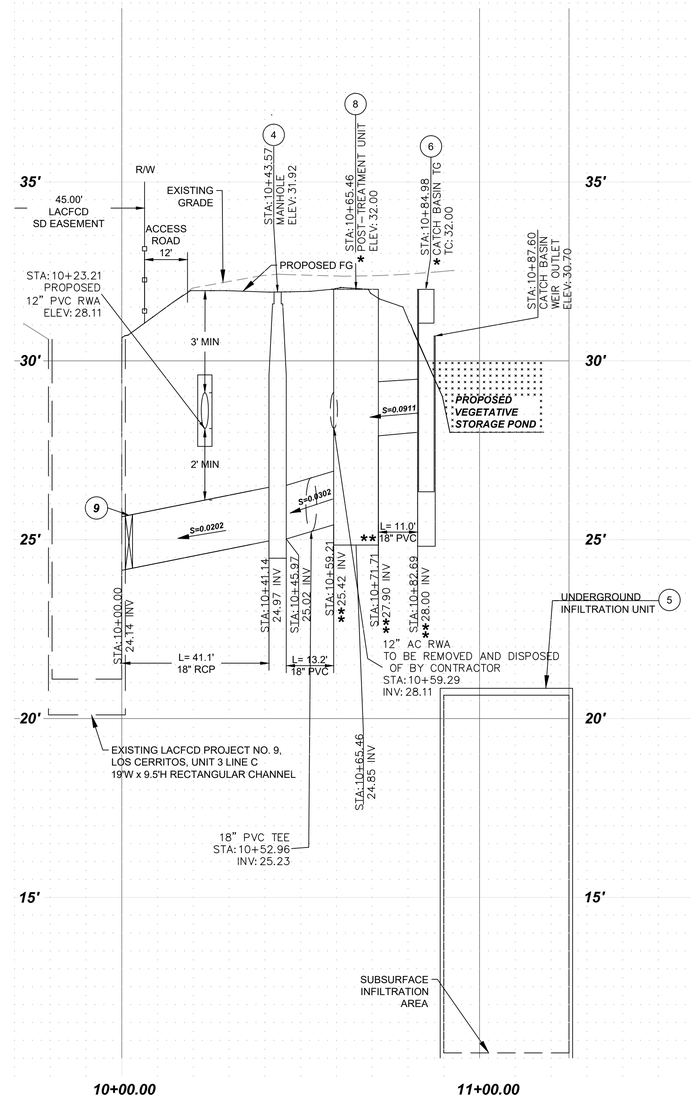


DIVERSION LINE-A

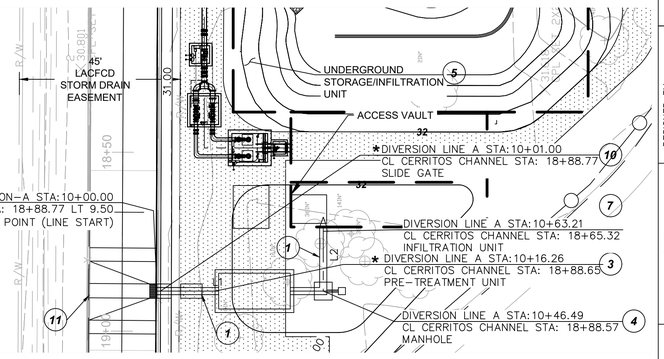


OUTLET LINE-B

PROFILE SCALE
HORIZ.: 1" = 20'
VERT.: 1" = 2'

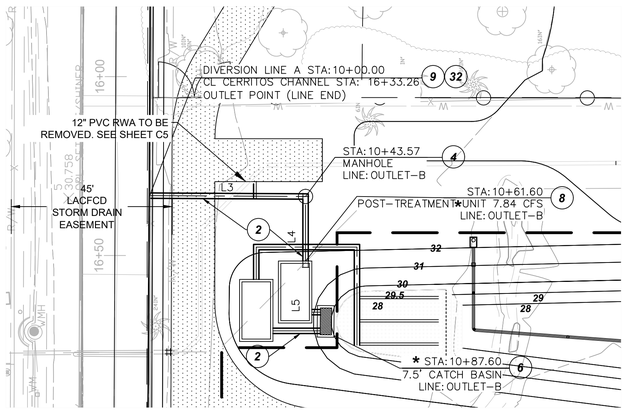
CONSTRUCTION NOTES

1	INSTALL 30" RCP PER LACDPW STD PLAN 3080-3.
2	INSTALL 18" RCP PER LACDPW STD PLAN 3080-3.
3	INSTALL PRE-TREATMENT UNIT (CDS UNIT). INSTALLATION AND SPECIFICATIONS PER INLINE CDS DETAILS ON SHEET C22.
4	INSTALL MAINTENANCE MANHOLE/VAULT PER SHT C-26.
5	INSTALL UNDERGROUND STORMWATER STORAGE/INFILTRATION UNIT PER DETAILS ON SHEET C17-C21.
6	CONSTRUCT CATCH BASIN PER SSPWC 300-4 PER SPPWC 2021. (W=7.5')
7	INSTALL 30" TIDE FLEX.
8	INSTALL POST-TREATMENT FILTRATION UNIT. INSTALLATION AND SPECIFICATIONS PER DETAIL ON SHEET C22.
9	INSTALL 18" TIDE FLEX CHECK VALVE.
10	CONSTRUCT 36" SLIDE GATE AND MOTOR VAULT PER SHEET M2.
11	CONSTRUCT CHANNEL DIVERSION STRUCTURE PER DETAILS ON C15 AND STRUCTURAL DETAIL ON S5.
32	CONSTRUCT PIPE JUNCTION PER DETAIL 1 ON SHEET S8.
36	INSTALL PRETREATMENT DEVICE PER DETAIL 1 ON SHEET C25.



DIVERSION LINE-A

SCALE: 1"=20'



OUTLET LINE-B

SCALE: 1"=20'

STORM DRAIN TABLE

LINE #	START NORTHING	START EASTING	END NORTHING	END EASTING
L1	1758089.20	6520488.52	1758042.71	6520488.51
L2	1758042.71	6520488.51	1758042.71	6520506.43
L3	1758049.25	6520510.76	1758044.44	6520743.84
L4	1758044.44	6520743.84	1758045.19	6520724.68
L5	1758045.19	6520715.34	1758045.19	6520708.84

NOTE

** NOT TO BE MAINTAINED BY LOS ANGELES COUNTY-PUBLIC WORKS / LOS ANGELES COUNTY FLOOD CONTROL DISTRICT (LACFCD). TO BE MAINTAINED BY THE CITY OF LONG BEACH.*

*** CONTRACTOR TO ADJUST ELEVATIONS AND LENGTH TO FIT IN POST TREATMENT FILTER UNITS.*

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION
				REF. DWG. X-XXXX DWG. X-XXXX
				DWG. X-XXXX
				AS-BUILT:

DESIGNED BY: AMT
DRAWN BY: AMT
DESIGN CHECK BY:
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER ERIC M. TORRESON NO. 66068 EXP. 6-30-26 CIVIL STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT DRAINAGE LINES

DRAWING REF. C8
PAGE
FIELD BOOK X.X.X.

MUNIS Project # XXXX-XXXX-XXXX
Phase# XXXX / Rebid: N/A
SHEET 10 OF 70
NOTE:

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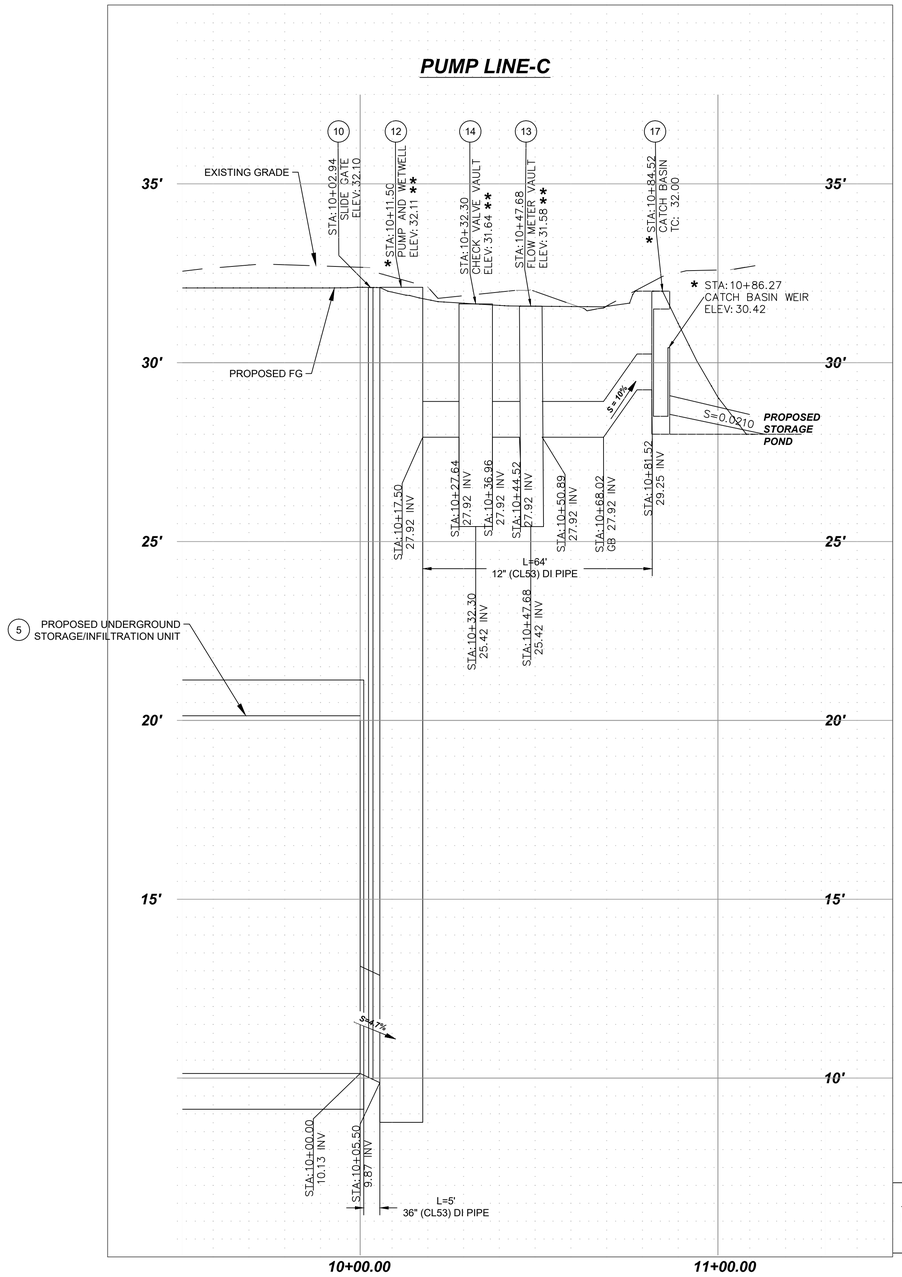
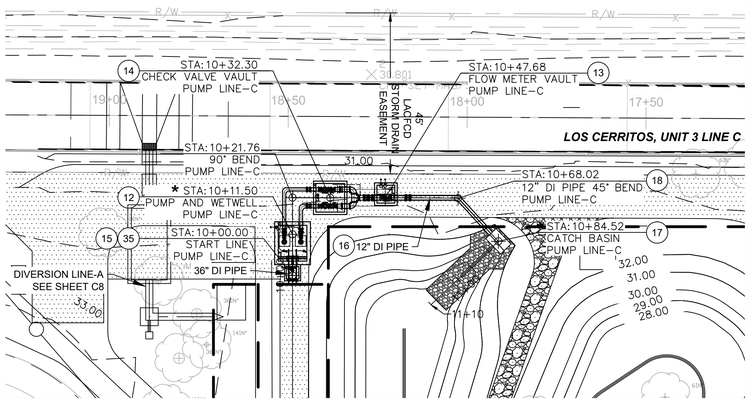


PROFILE SCALE
HORIZ.: 1" = 20'
VERT.: 1" = 2'

CONSTRUCTION NOTES

5	INSTALL UNDERGROUND STORMWATER STORAGE/INFILTRATION UNIT PER DETAILS ON SHEET C17–C21.
10	CONSTRUCT 30" SLIDE GATE AND MOTOR VAULT PER SHEET M2.
12	CONSTRUCT PUMP WETWELL STRUCTURE PER LAYOUT AND DETAIL ON SHEETS M3 AND M4.
13	CONSTRUCT FLOW METER VAULT PER LAYOUT AND DETAIL ON SHEETS M3 AND M4.
14	CONSTRUCT CHECK VALVE VAULT PER LAYOUT AND DETAILS ON SHEETS M3 AND M4.
15	INSTALL 36" DI PIPE, TRENCHING AND BEDDING PER LACDPW 3080–3 SEE SHEET C23.
16	INSTALL 12" DI PIPE, TRENCHING AND BEDDING PER LACDPW 3080–3 SEE SHEET C23.
17	CONSTRUCT CATCH BASIN AND OUTLET STRUCTURE PER DETAILS ON SHEET C14
18	INSTALL 12" DI PIPE (LL 53) 45° BEND (FLG x FLG) AND BENDING PER LACDPW STANDARD PLAN 3080–3.
35	CONSTRUCT 36" SLIDE GATE AND MOTOR VAULT PER SHEET M2.



PUMP LINE-C
SCALE: 1"=20'

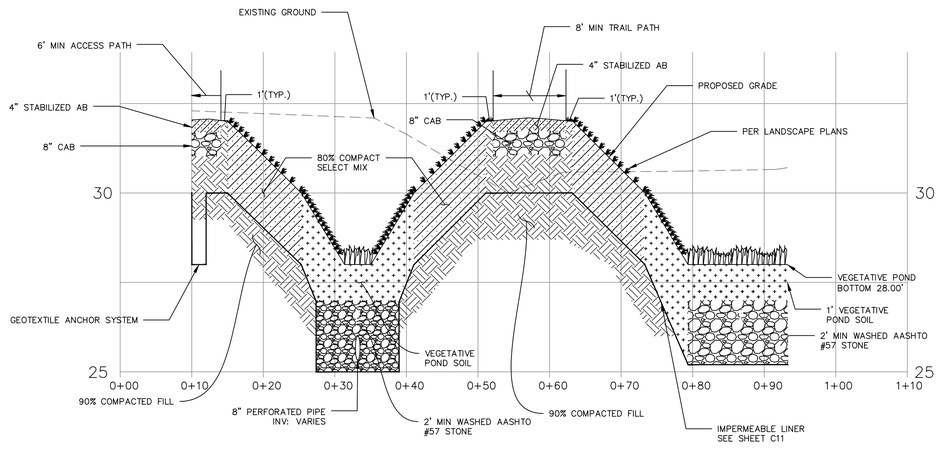
NOTE

* *NOT TO BE MAINTAINED BY LOS ANGELES COUNTY-PUBLIC WORKS / LOS ANGELES COUNTY FLOOD CONTROL DISTRICT (LACFCD). TO BE MAINTAINED BY THE CITY OF LONG BEACH.*

** *FINISHED ELEVATIONS TO BE 1" ABOVE FINISHED SURFACE*

REVISIONS

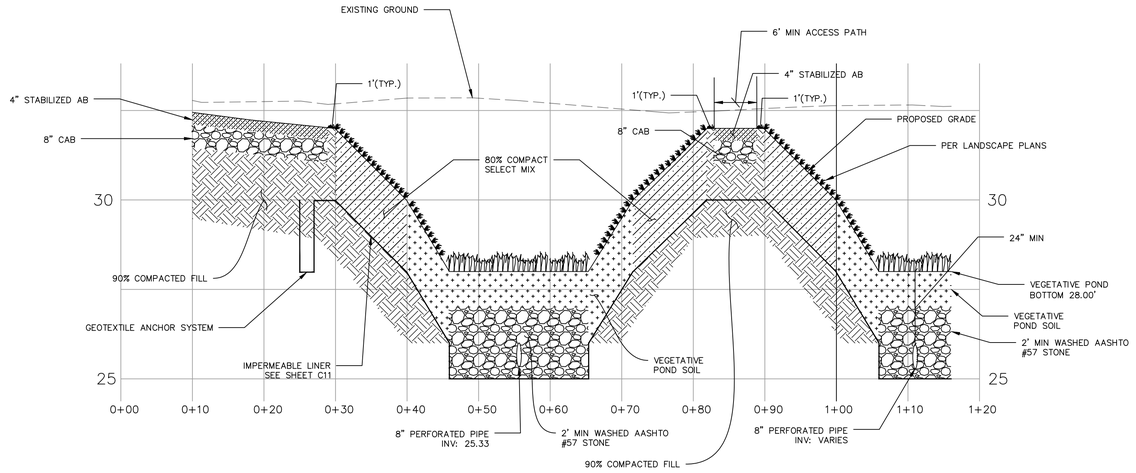
No.	DATE	SHEET	APPROVAL	DESCRIPTION



SECTION A-A

C3

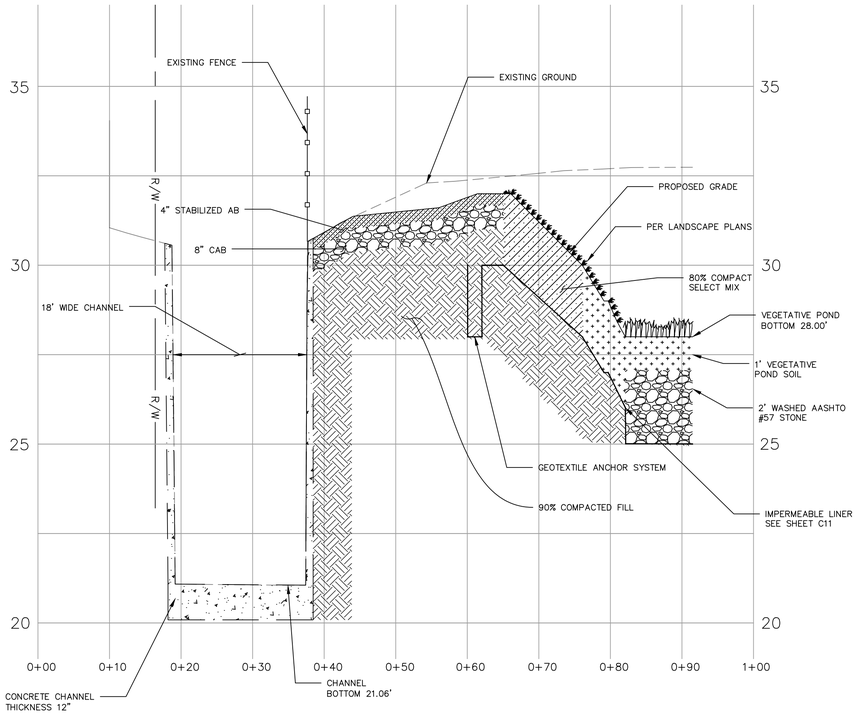
HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE 1"=2'



SECTION B-B

C3

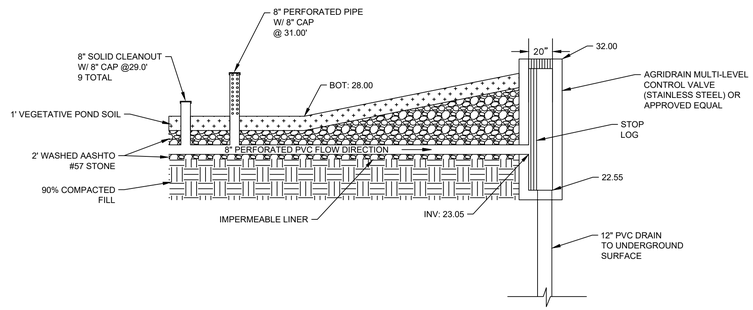
HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE 1"=2'



SECTION C-C

C3

HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE 1"=2'



SUBDRAIN DETAIL

SCALE: 1"=5'

No.	DATE	SHEET	APPROVAL	DESCRIPTION

REVISIONS

AS-BUILT:

REF. DWG. X-XXXX DWG. X-XXXX
DWG. X-XXXX

DESIGNED BY: AMT
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DRAFTING CHECK BY:

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SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT GRADING SECTION 1

PAGE

FIELD BOOK X,X,X.

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MUNIS Project # XXXX-XXXX-XXXX

Phase# XXXX / Rebid: N/A

SHEET 12 OF 70

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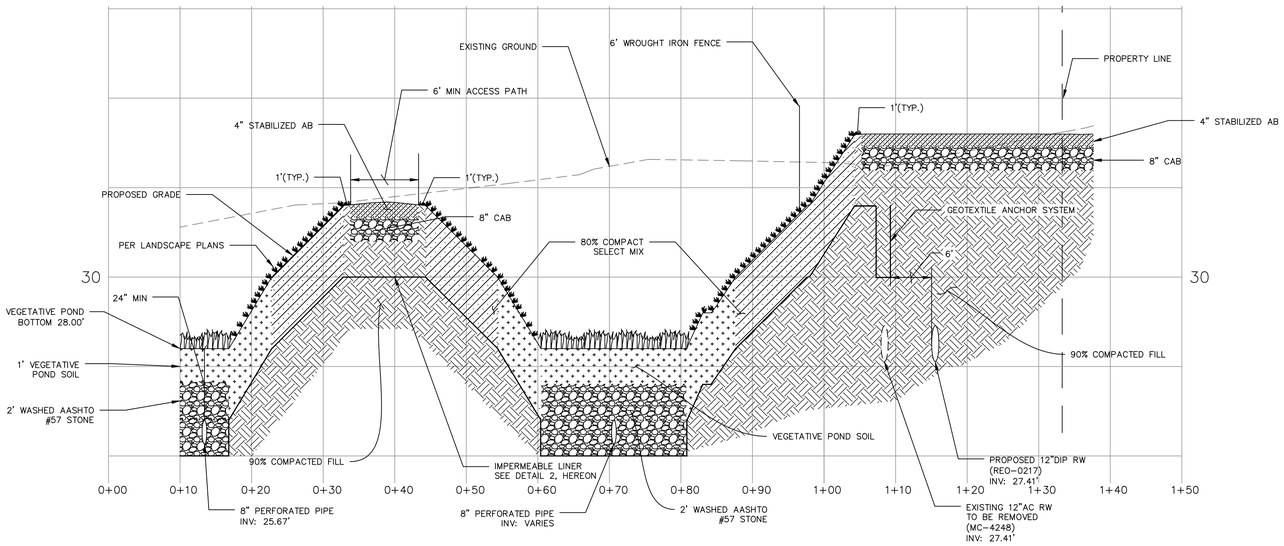
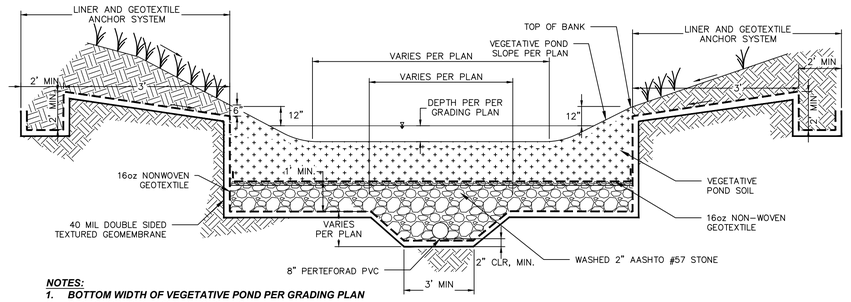


SECTION D-D

C3

HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE 1"=2'

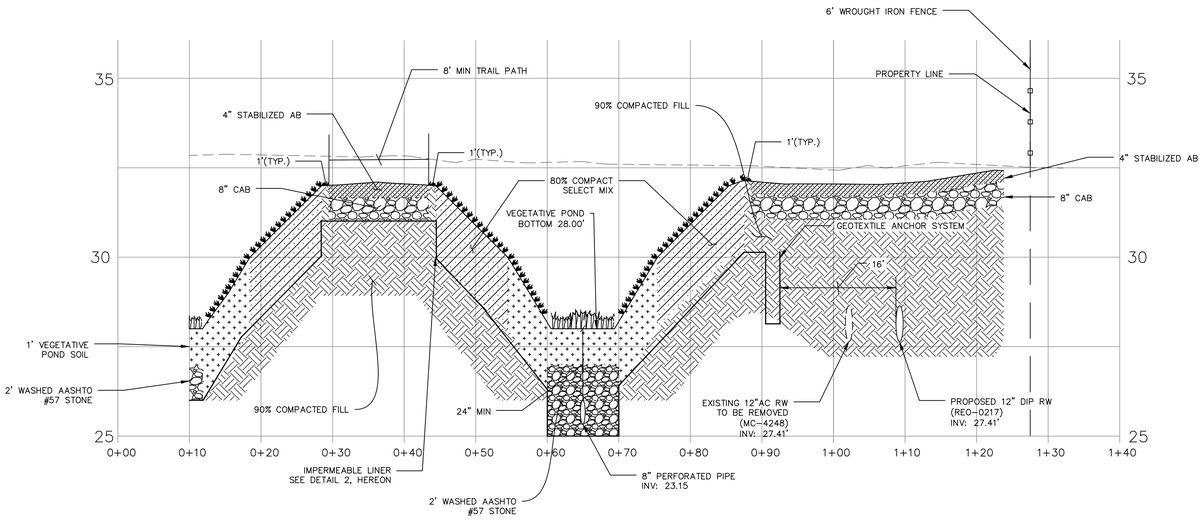


NOTES:

1. ***BOTTOM WIDTH OF VEGETATIVE POND PER GRADING PLAN***
2. ***SIDE SLOPES PER GRADING PLANS***
3. ***LINER LIMITS PER LINER HORIZONTAL CONTROL PLAN***
4. ***INSTALL JUTE NETTING ON ALL SLOPES 2:1 AND GREATER***
5. ***HDPE GEOMEMBRANE AND NON WOVEN GEOTEXTILE ANCHOR CONFIGURATION SHALL APPLY TO BOTH PROPOSED STREAM AND PROPOSED VEGETATIVE STORAGE POND LINER.***

DETAIL 2: TYPICAL VEGETATIVE POND SECTION

NTS



SECTION E-E

C3

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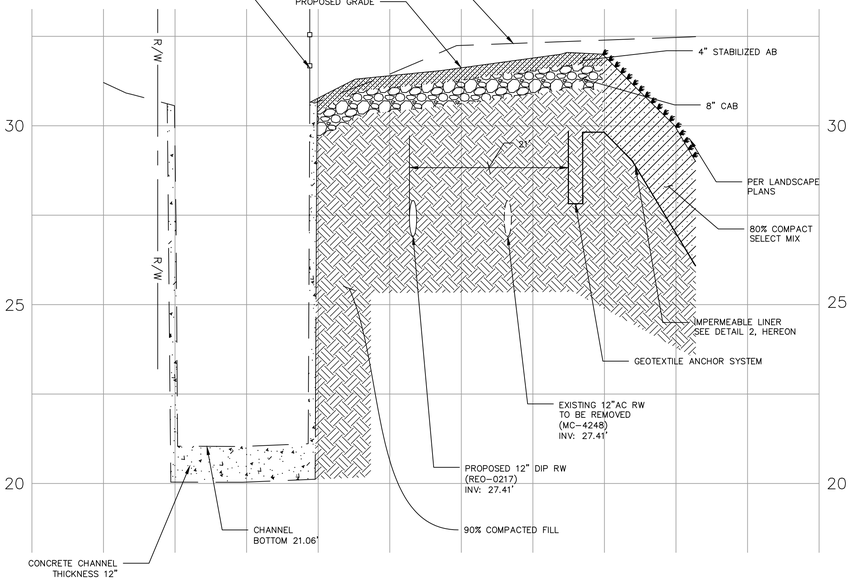
VERTICAL SCALE 1"=2'



SECTION F-F

C3

HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE 1"=2'

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION
				REF. DWG. X-XXXX DWG. X-XXXX
				AS-BUILT:

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SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT GRADING SECTION 2

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FIELD BOOK X.X.X.

MUNIS Project # XXXX-XXXX-XXXX

Phase# XXXX / Rebid: N/A

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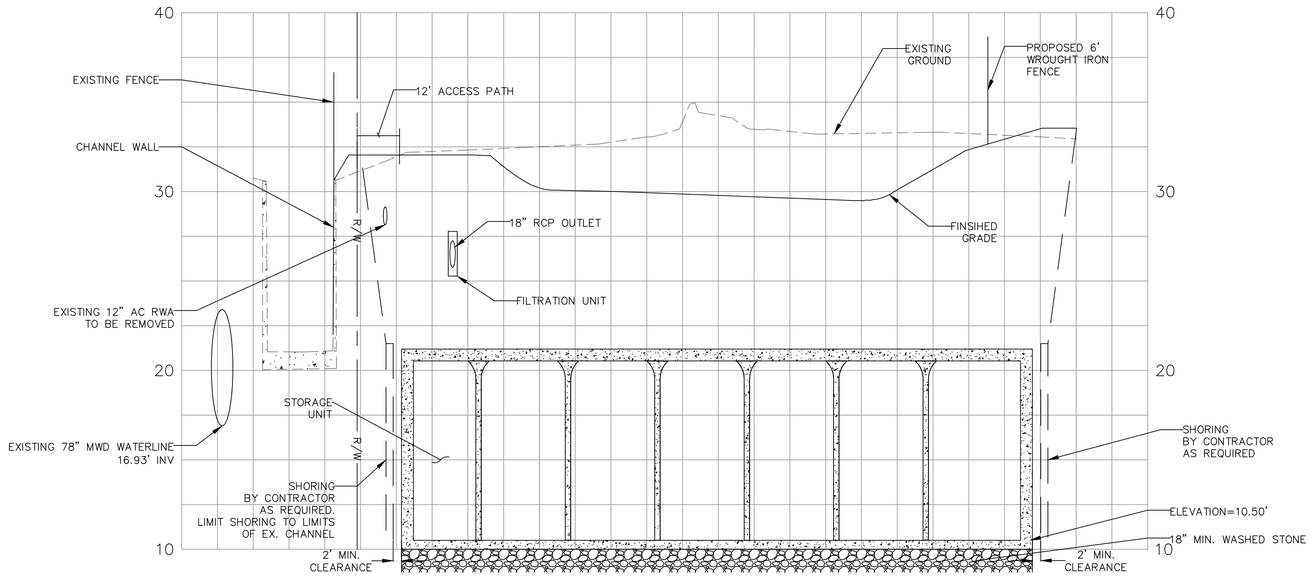

SECTION A-A

C7

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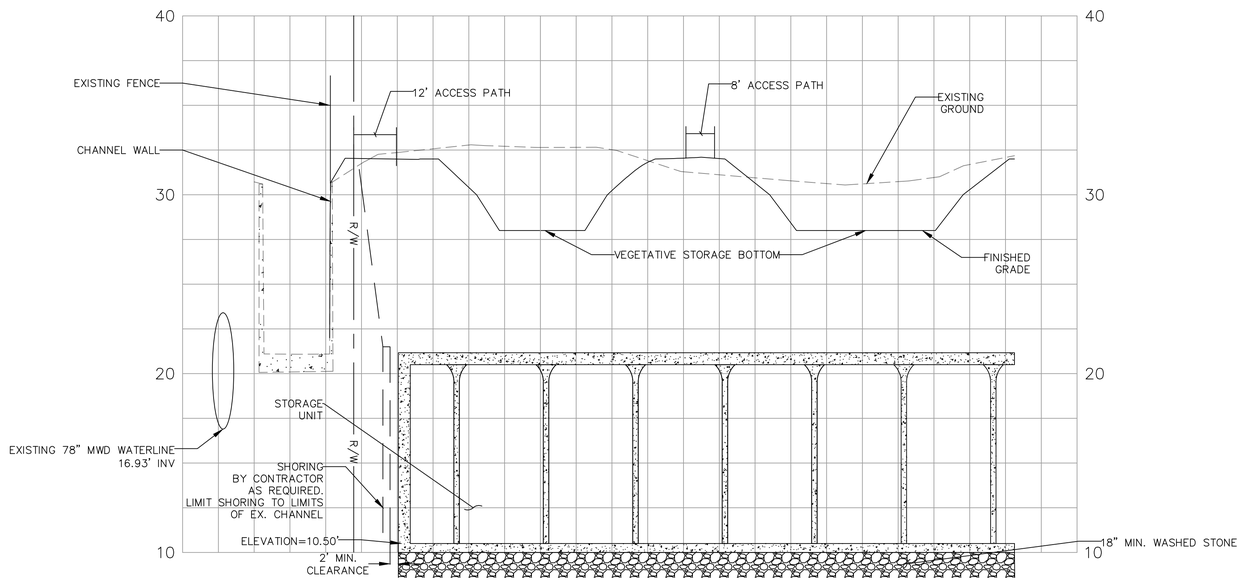
VERTICAL SCALE 1"=4'



SECTION B-B

C7

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=4'

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION

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REF. DWG. X-XXXX DWG. X-XXXX
REF. DWG. X-XXXX DWG. X-XXXX

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DESIGN CHECK BY:
DRAFTING CHECK BY:

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SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT STORAGE SECTION 1

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MUNIS Project # XXXX-XXXX-XXXX

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SHEET 14 OF 70

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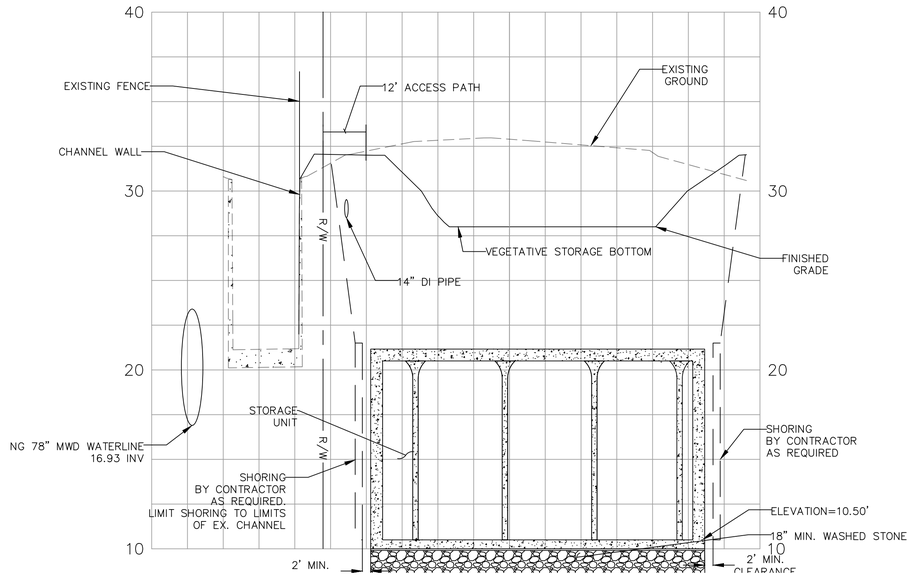
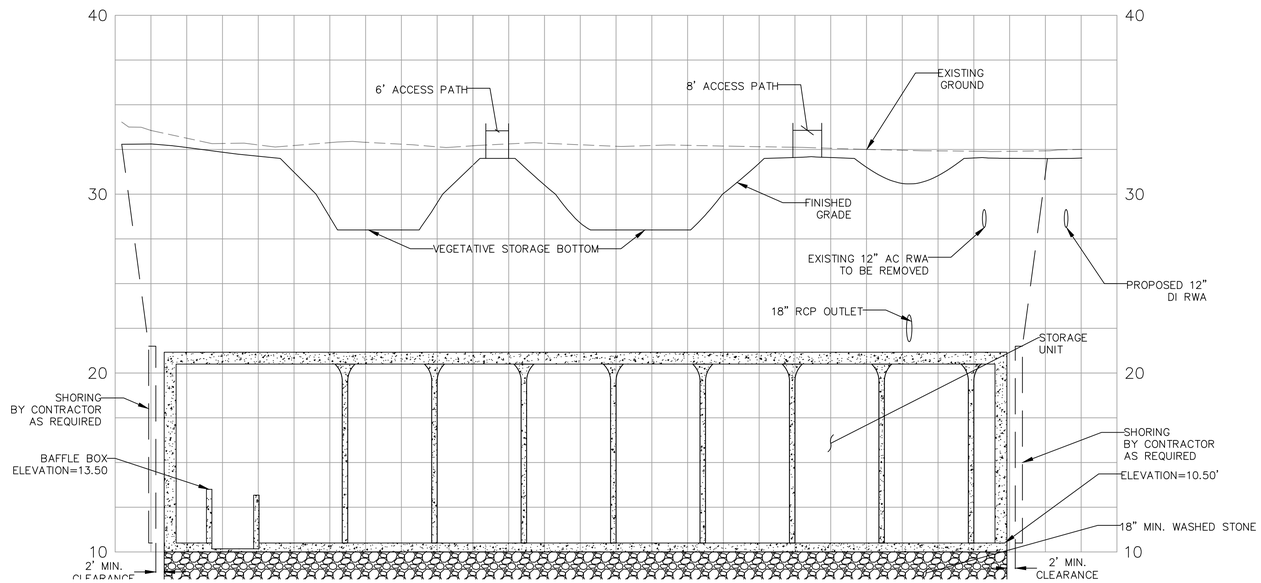


SECTION C-C

C7

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=4'



SECTION D-D

C7

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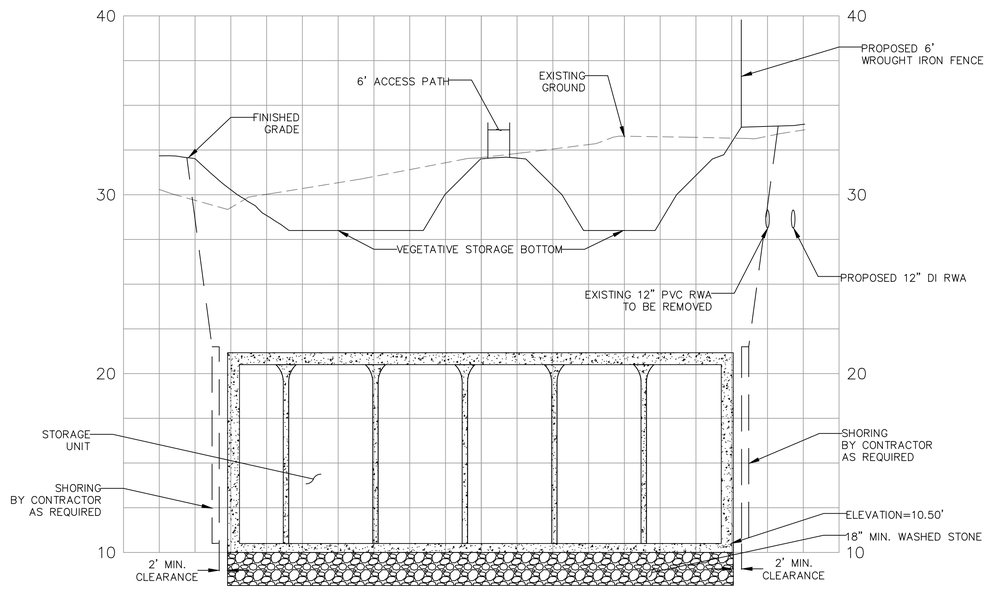
VERTICAL SCALE 1"=4'



SECTION E-E

C7

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=4'

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DRAWN BY: AMT
DESIGN CHECK BY:
DRAFTING CHECK BY:

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ARIC M. TORRESON
NO. 66068
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STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT STORAGE SECTION 2

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PAGE

FIELD BOOK X.X.X.

MUNIS Project # XXXX-XXXX-XXXX

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SHEET 15 OF 70

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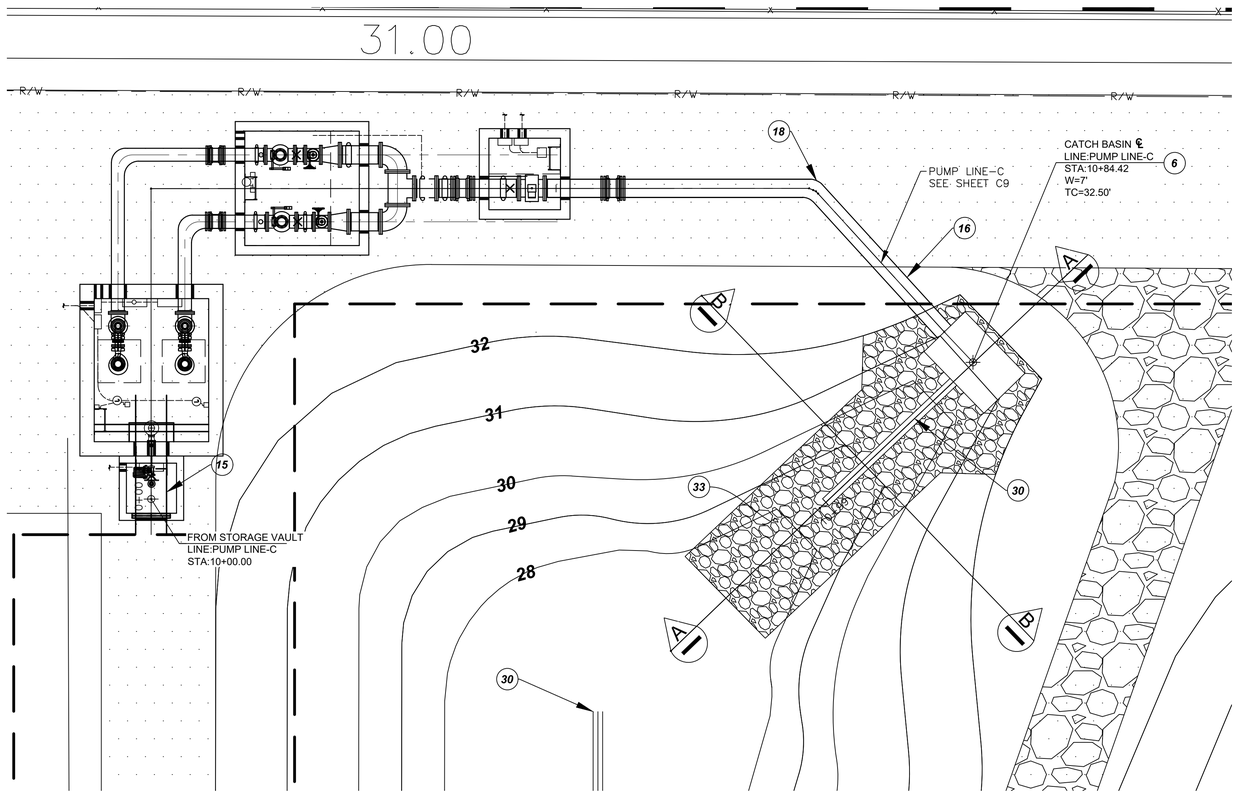
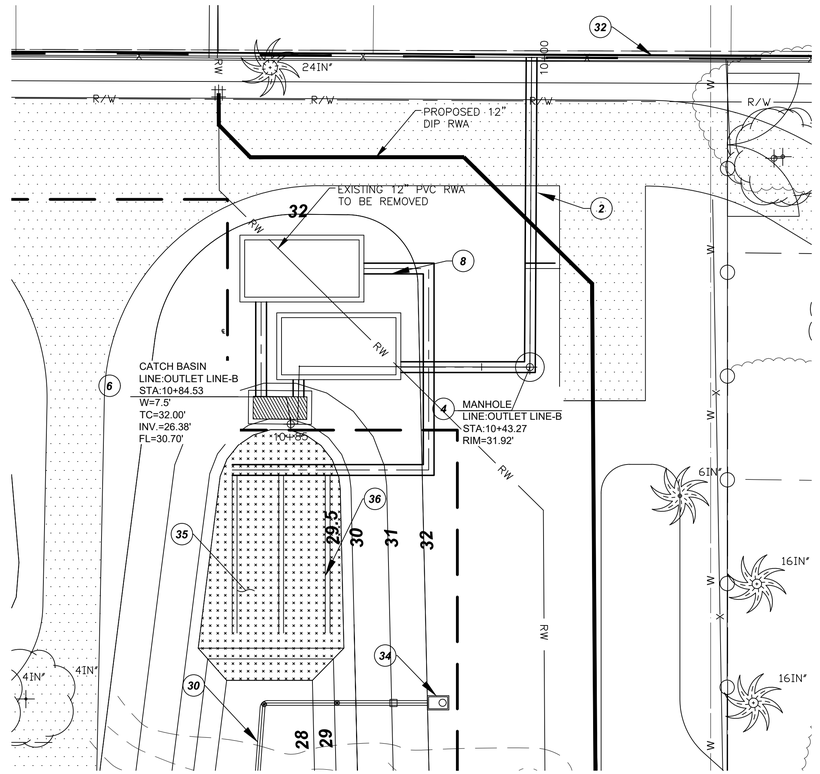


1 **VEGETATIVE STORAGE POND**

SCALE: 1"=5'



2 **POST-TREATMENT FILTRATION SYSTEM**

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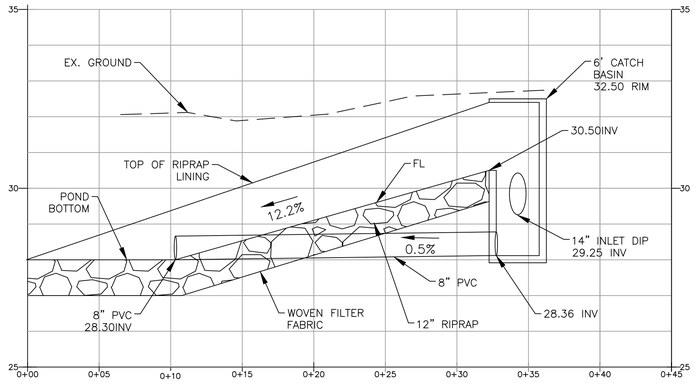

SECTION A-A

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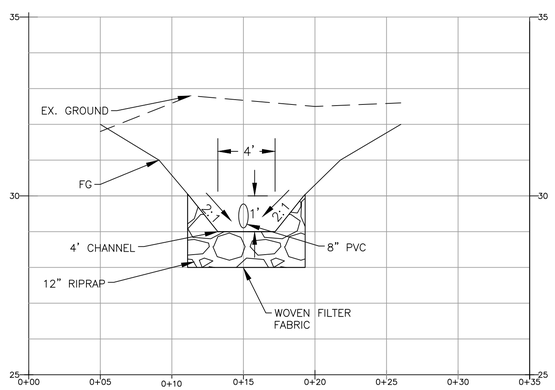

SECTION B-B

HORIZONTAL SCALE: 1"=5'
VERTICAL SCALE 1"=2'

CONSTRUCTION NOTES

2	INSTALL 18" RCP PIPE. TRENCHING AND BEDDING PER LACDPW STD PLAN 3080–3.	18	INSTALL 14" DI PIPE (LL 53) 45° BEND (FLG X FLG) AND BENDING PER LACDPW STANDARD PLAN 3080–3.
4	INSTALL MAINTENANCE MANHOLE WITH 36" SHAFT PER LACPW STD. DWG. 321–2.	30	CONSTRUCT 8" PERFORATED PVC SUBDRAIN AND CLEANOUTS PER SUBDRAIN DETAIL ON SHEET C10.
6	CONSTRUCT CATCH BASIN PER SSPWC 300–3. (W=PER PLAN)	32	CONSTRUCT PIPE JUNCTION WITH CHANNEL PER DETAIL 1 ON SHEET S8.
8	INSTALL POST–TREATMENT FILTRATION UNIT. INSTALLATION AND SPECIFICATIONS PER MANUFACTURER.	33	CONSTRUCT RIPRAP OUTLET CHANNEL PER DETAILS HERE ON.
15	INSTALL 36" DI PIPE TRENCHING AND BEDDING PER LACDPW 3080–3.	34	INSTALL AGRIDRAIN MANUAL INLINE WATER LEVEL CONTROL STRUCTURE (STAINLESS STEEL) FOR 12" PVC OR APPROVED EQUAL.
16	INSTALL 14" DI PIPE. TRENCHING AND BEDDING PER LACDPW 3080–3 SEE SHEET C23.	35	INSTALL STAR MEDIA PER SPECIFICATIONS.
		36	INSTALL 12" PERFORATED PVC AND 18" PVC WITH TEE.

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SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT VEGETATIVE STORAGE POND DETAILS

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FIELD BOOK X.X.X.

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MUNIS Project # XXXX–XXXX–XXXX

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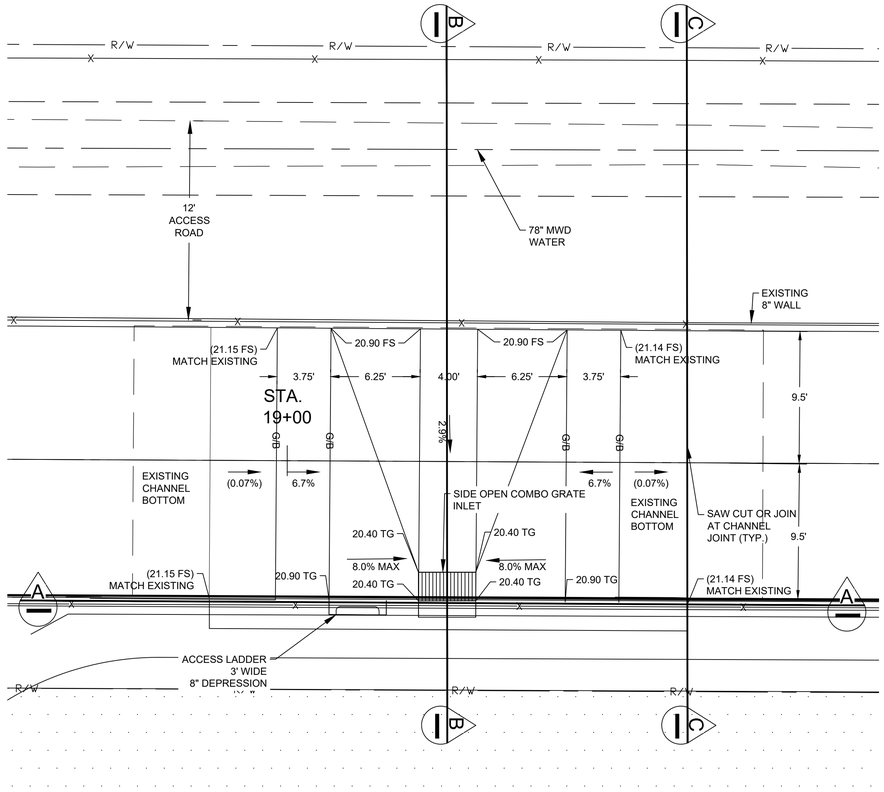
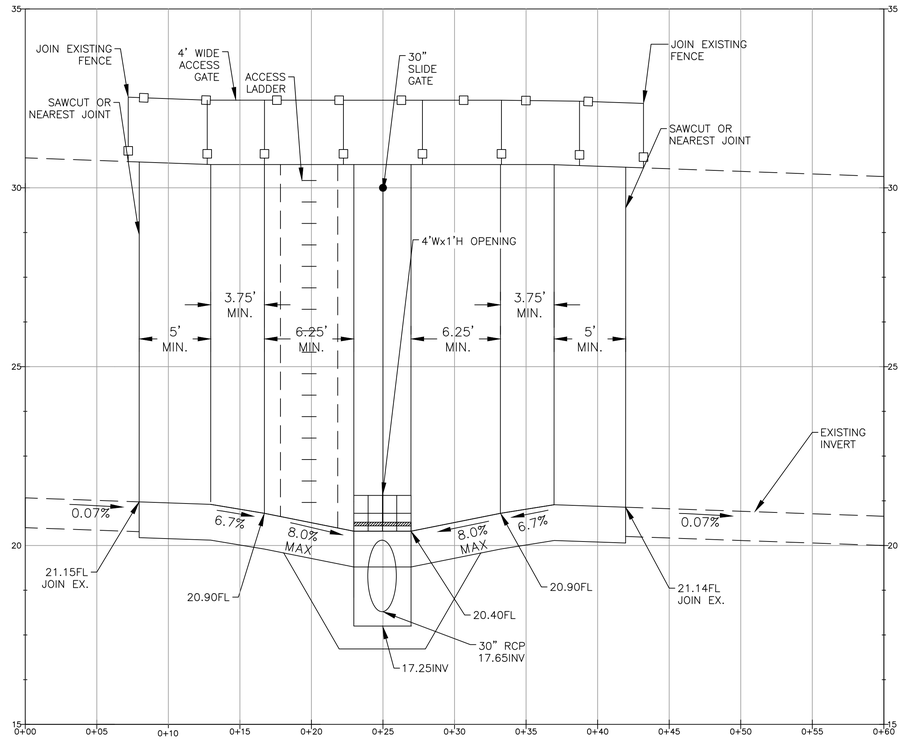


DETAIL 1: DIVERSION STRUCTURE

SCALE: 1"=5'



SECTION A-A

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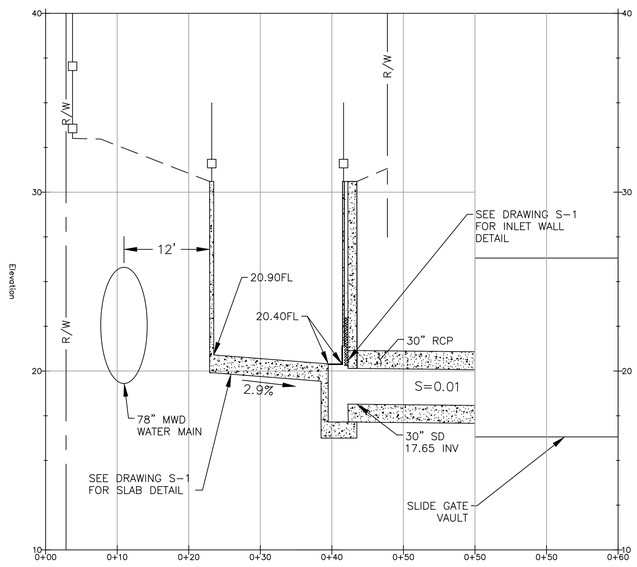
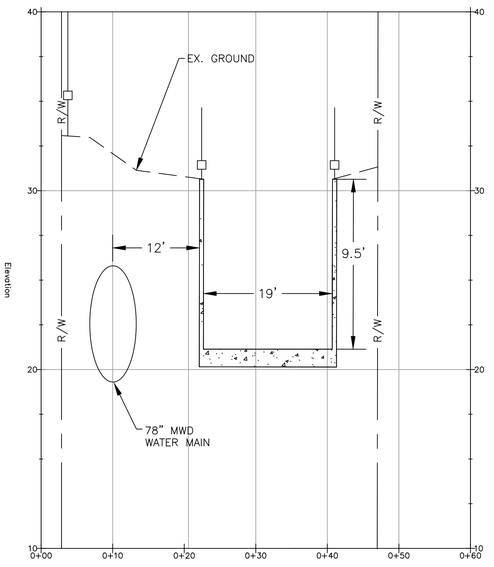


SECTION B-B

HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE 1"=4'



SECTION C-C

HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE 1"=4'

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DRAFTING CHECK BY:

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SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT DIVERSION DETAILS

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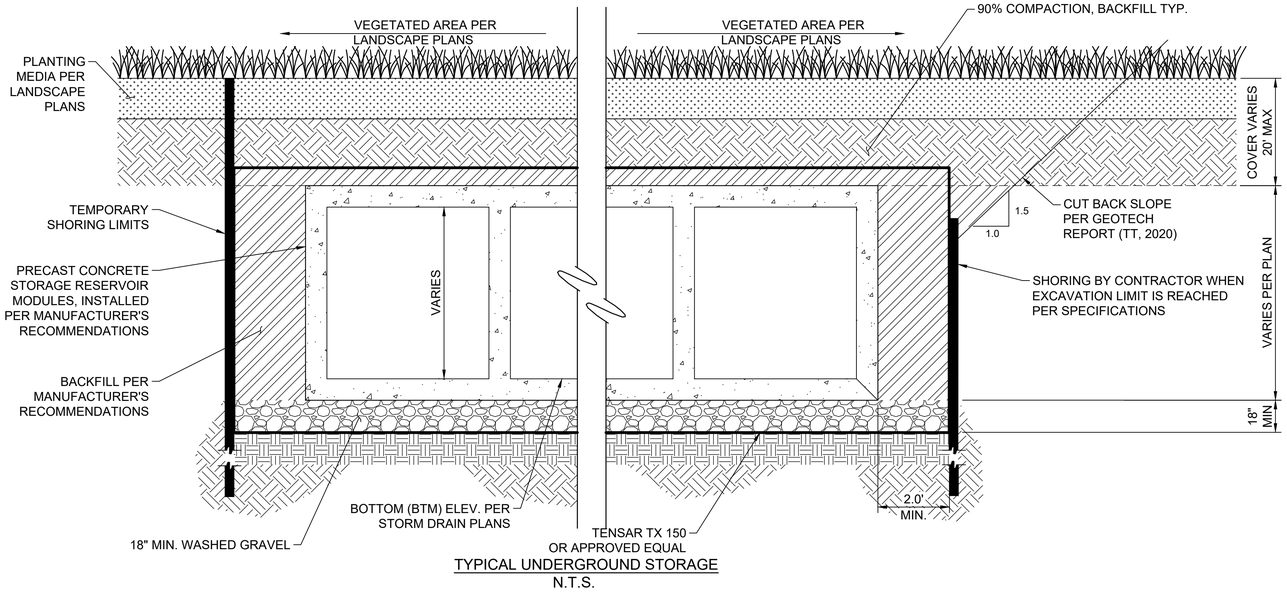
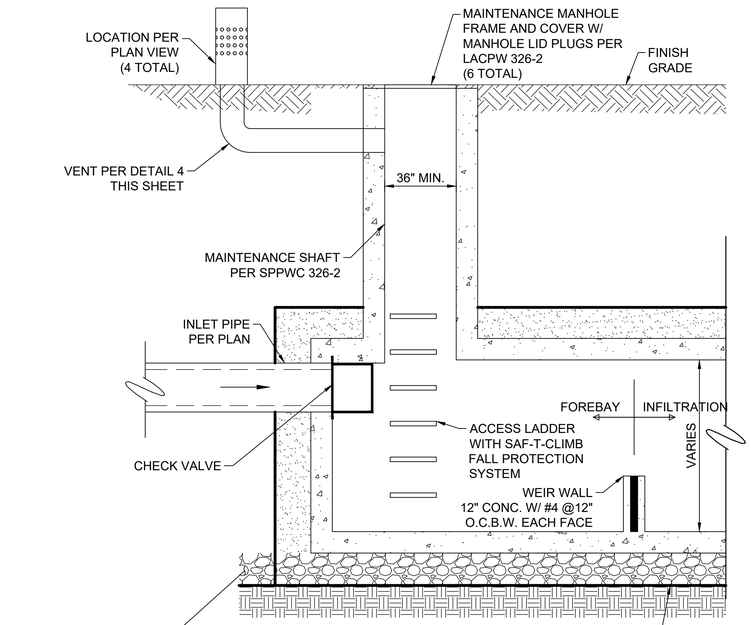


TYPICAL UNDERGROUND STORAGE
N.T.S.



SECTION A
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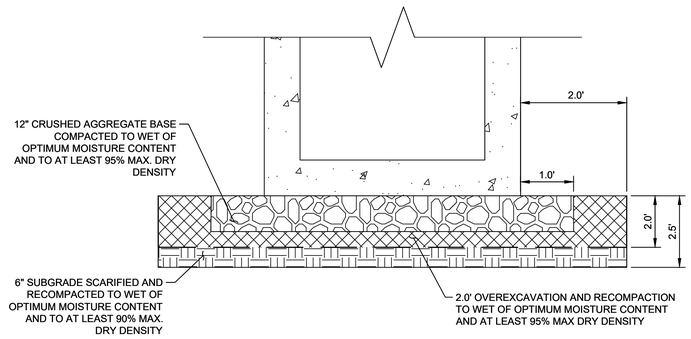
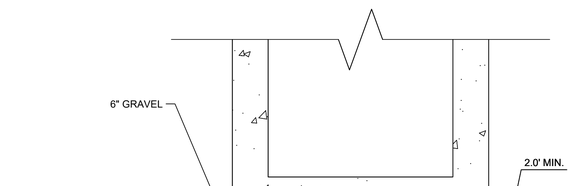


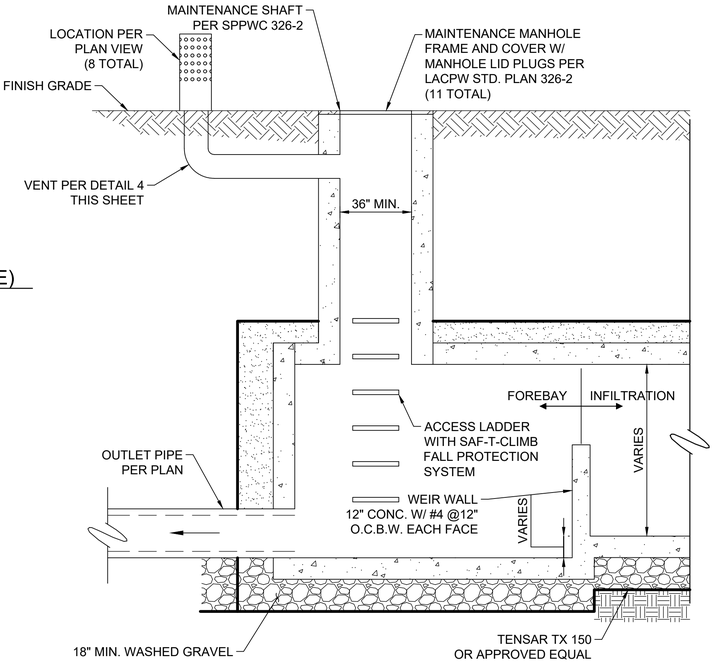
NOTES:
1. THIS DETAIL TO BE USED FOR AT-GRADE STRUCTURES SUCH AS THE ON-SITE TREATMENT FACILITY AND SUBTERRANEAN STRUCTURES SUCH AS VALVE VAULTS LOCATED AT DEPTHS LESS THAN 10'.

1 – FOUNDATION SUBGRADE PREPARATION FOR SHALLOW STRUCTURES (FOUNDED<10' BELOW FINISHED GRADE)
NTS



NOTES:
1. THIS DETAIL TO BE USED FOR SUBTERRANEAN STRUCTURES SUCH AS PUMP STATIONS, MANHOLES AND VALVE VAULTS LOCATED AT DEPTHS 10' OR MORE.

2 – FOUNDATION SUBGRADE PREPARATION FOR DEEP STRUCTURES (FOUNDED ≥ 10' BELOW FINISHED GRADE)
NTS



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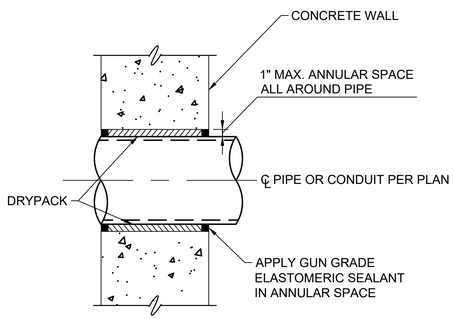

3 – PENETRATION SEAL AT WALL
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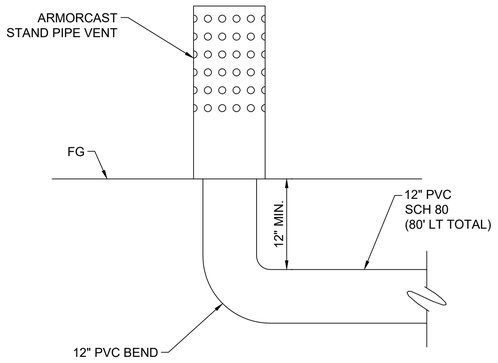

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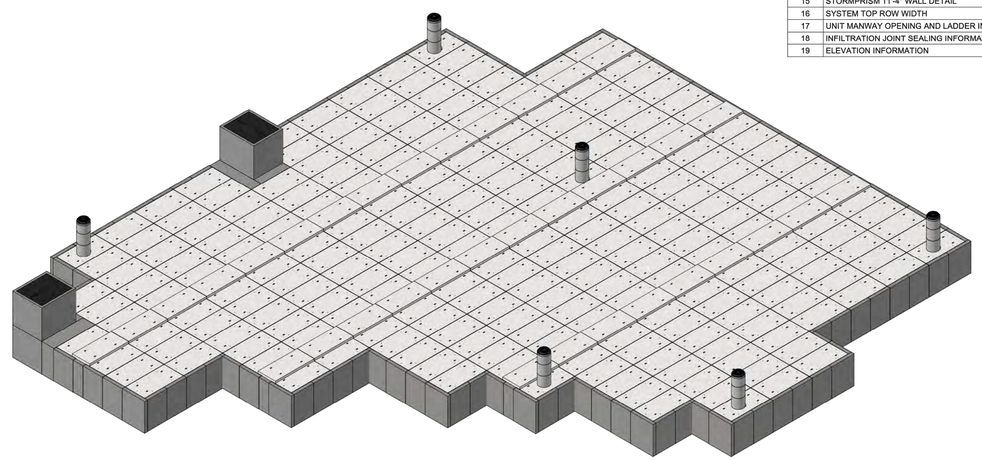
LONG BEACH, CA 90808
STORMPRISM

STORMPRISM SPEQ

INFILTRATION
(WITH EXTENSIONS)



SHEET INFORMATION	
SHEET No.	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES
3	GENERAL NOTES
4	STORMPRISM OVERVIEW
5	STORMPRISM 10'-0" INFILTRATION UNIT DETAIL
6	STORMPRISM 10'-0" INFILTRATION BASE
7	STORMPRISM 10'-0" INFILTRATION TOP
8	4FT EXTENSION BASE
9	4FT EXTENSION TOP
10	4FT EXTENSION TOP WITH ACCESS HOLE
11	LIFTING DETAIL
12	INFILTRATION FILTER INFORMATION
13	4'-0" INTERIOR WALL
14	10'-0"x 12'-0" VAULT ACCESS
15	STORMPRISM 11'-4" WALL DETAIL
16	SYSTEM TOP ROW WIDTH
17	UNIT MANWAY OPENING AND LADDER INFORMATION
18	INFILTRATION JOINT SEALING INFORMATION
19	ELEVATION INFORMATION

REVISIONS
No. DATE DESCRIPTION

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TITLE: STORMPRISM 10'-0" INFILTRATION SYSTEM WITH EXTENSIONS SKYLINKS, LONG BEACH
DRAWN BY: K.STRADER
DATE: 4/25/2023
SHEET: 1 OF 18

REV. 4/25/23 KS

LOCATION:T:\Drawings\Vault\25830\90\Storm Prism\Customer\Skylinks\Master Parts\Skylink 10ft Deep SPEQ 4.24.23.dwg

Precon Products™ Guide Specification
Storm Prism™ EQ
for
Infiltration Systems
Released 03/02/2021

SECTION 33 46 23 - MODULAR BURIED STORMWATER STORAGE UNITS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Storm Prism™ EQ precast concrete, modular, buried stormwater storage units and accessories.

1.02 SUMMARY

A. This Section includes the performance criteria, materials, design, production, and installation for precast concrete, modular, buried, stormwater storage units that together form an underground stormwater storage system. The Work performed under this Section includes all labor, materials, equipment, related services, and supervision required for the supply, installation and commissioning of the precast concrete, modular, buried, stormwater storage units inter Water land use treatment.

1.03 RELATED SECTIONS

A. Section 01 33 00 - Submittal Procedures
B. Section 31 00 00 - Earthwork
C. Section 03 40 00 - Precast Concrete

1.04 REFERENCE STANDARDS

A. American Association of State Highway Transportation Officials (AASHTO)

1. AASHTO - Standard Specifications for Highway Bridges, 17th Edition - 2002
2. AASHTO M105 - Standard Specifications for Gray Iron Castings
3. AASHTO M198 - Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants
4. AASHTO M288 - Standard Specification for Geosynthetic Specification for Highway Applications

B. American Concrete Institute (ACI)

1. ACI 318 - Building Code Requirements for Structural Concrete
2. ACI 350 - Code Requirements for Environmental Engineering Concrete Structures
3. ACI 350.3 - Seismic Design of Liquid-Containing Structures and Commentary

C. American Society for Testing and Materials (ASTM)

1. ASTM A48 - Standard Specification for Gray Iron Castings
2. ASTM A615 - Standard Specification for Deformed & Plain Carbon-Steel Bars for Concrete Reinforcement
3. ASTM A1064 - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
4. ASTM C32 - Standard Specification for Sewer and Manhole Brick (Made form Clay or Shale)
5. ASTM C33 - Standard Specification for Concrete Aggregates
6. ASTM C139 - Standard Specification for Concrete Masonry Units for Construction of Catch Basins and Manholes
7. ASTM C150 - Standard Specification for Portland Cement
8. ASTM C478 - Standard Specification for Circular Precast Reinforced Concrete Manhole Sections
9. ASTM C595 - Standard Specification for Blended Hydraulic Cement
10. ASTM C857 - Standard Practice for Minimum Structural Design Loading for Underground Precast Concrete Utility Structures
11. ASTM C858 - Standard Specification for Underground Precast Concrete Utility Structures
12. ASTM C877 - Standard Specification for External Sealing Bands for Concrete Pipe, Manholes, and Precast Box Sections
13. ASTM C891 - Standard Practice for Installation of Underground Precast Concrete Utility Structures
14. ASTM C913 - Standard Specification for Precast Concrete Water and Wastewater Structures
15. ASTM C923 - Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals
16. ASTM C990 - Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants
17. ASTM C1107 - Packaged Dry, Hydraulic Cement Grout (Non-Shrink)
18. ASTM C1478 - Standard Specification for Storm Drain Resilient Connectors Between reinforced Concrete Storm Sewer Structures, Pipes, and Laterals
19. ASTM C1675 - Standard Specification for Installation of Precast Reinforced Concrete Monolithic Box Sections for Culverts, Storm Drains, and Sewers
20. ASTM D448 - Standard Classification for Sizes of Aggregate for Road and Bridge Construction
21. ASTM D698 - Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort
22. ASTM D545 - Standard Test Method for Preformed Expansion Joint Fillers for Concrete Construction (Nonextruding Resilient Types)
23. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
24. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
25. ASTM D4014 - Standard Specification for Plain and Steel-Laminated Elastomeric Bearings for Bridges
26. ASTM D5992 - Standard Guide for Dynamic Testing of Vulcanized Rubber and Rubber-Like Materials Using Vibratory Methods
27. ASTM D7967 - Standard Specification for Solid Round Glass Fiber Reinforced Polymer Bars for Concrete Reinforcement
28. ASTM D8139 - Standard Specification for Semi-Rigid, Closed-Cell Polypropylene Foam, Preformed Expansion Joint Fillers for Concrete Pacing and Structural Construction
29. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs
30. ASTM F2510 - Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures and Corrugated Dual- and Triple-Wall Polyethylene and Polypropylene Pipes

1.05 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide an underground stormwater storage system capable of withstanding design loads as indicated on the Plans and as detailed herein:

1. Dead Loads shall be determined using the following:

i. Soil load based on minimum and maximum depth of burial as indicated on the Plans using a minimum of 120 pcf for soil density.
ii. Lateral soil pressures to be based on a minimum "At Rest Earth Pressure" of 60 pcf.
iii. Other dead loads as indicated on the Plans.

2. Live Loads shall be determined using the following:

i. HS20 Loading per AASHTO - Standard Specifications for Highway Bridges, 17th Edition - 2002 based on the minimum and maximum depth of burial as indicated on the Plans. For burial depths less than two feet, a concentrated point load shall be utilized for the calculated live load.

3. Interior Water Load shall be determined using the following:

i. A minimum of 62.4 pcf water density at the maximum water storage depth as indicated on the Plans.

4. Maximum Soil Bearing Pressure shall be evaluated using the following:

i. Soil bearing capacities as determined by the Project Geotechnical Engineer or as listed in the Project Geotechnical Report.
ii. The maximum bearing pressure of the selected precast module.

5. Seismic Loads shall be based on the Plans and Project Geotechnical Report.

6. Other Loads (if any) shall be determined using the following:

i. As detailed on the Plans and Drawings or otherwise listed in the Specifications.

B. Water Storage Capacity: Provide an underground stormwater storage system with a minimum water storage capacity as indicated on the Plans or as indicated in the Water Quality Management Plan (WQMP). The storage volume shall reflect any necessary freeboard. Water detention times and water release rates shall not deviate from the requirements listed in the WQMP.
C. System Footprint: Provide an underground stormwater storage system with a footprint size as detailed on the Plans. Any deviation from the system footprint must be reconciled with the project Plans and Project WQMP.

1.06 DESIGN REQUIREMENTS

A. Structural precast concrete, modular, buried, stormwater storage units shall be designed in accordance with ACI 350, ACI 350.3, and ACI 318 latest addition and the details listed herein;

1. Wall thickness, and top slab thickness of the stormwater storage system shall conform to ACI 350 and ACI 318 and shall be no less than the minimum thickness necessary to sustain HS20 loading requirements as determined by a Licensed Professional Engineer.
2. Wall thickness, top slab thickness and bottom slab thickness of the stormwater storage system shall be no less than the minimum thickness necessary to sustain the expected soil loading based on the required burial depths for the Project as determined by a Licensed Professional Engineer.
3. Wet mix concrete or self-consolidating concrete (SCC) with a water/cement ratio of no greater than 0.40 shall be utilized for all precast and any field cast elements. Dry cast concrete shall not be allowed in order to maintain dimensional tolerances and to ensure adequate consolidation around heavy reinforcement.
4. The interior assembled floor of the stormwater storage system shall be flat to within ¼" and shall not slope greater than 1%.
5. All vertical load bearing elements shall contain transverse reinforcement per ACI 350 and ACI 318 to provide confinement and ensure that spalling of the shell concrete does not result in a loss of axial load strength.
6. Access shall be provided for manned entry into the system. The access point(s) for ingress and egress shall be located in the system in such a manner that a point of egress shall be visible at all times by entry personnel from any location within the system.
7. The stormwater storage system shall be designed with no internal ledges, steps, slopes, walls, or other form of blockage between any interior space and at least one egress opening that may encumber access or retrieval of personnel or equipment.
8. Areas within the stormwater storage system with ingress and egress restrictions resulting in a 30% reduction in size of the standard interior height and/or width of the system and any step-over that is 3-inches in size or larger shall be considered separate compartments of the system and should be minimized. Each separate compartment shall require unique surface level ingress and egress points for safe access and exit from the system as well as to provide adequate air supply during manned entry.
9. ***(Specifier Note: Include this Section for Infiltration systems requiring internal filtration.)*** Stormwater storage systems designed for infiltration shall utilize a material and method internal to the System to prevent sediment from entering the rock voids of the bedding for the system. The material and method shall be maintainable and shall not restrict the hydraulic characteristics of the storage system in a 90% clogged condition.

1.07 QUALITY ASSURANCE

A. The precast concrete, modular, buried, stormwater storage units shall be manufactured at a precast concrete facility certified by the NPCA.
B. The materials, methods and completed concrete, subsurface, stormwater storage system(s) shall be subject to inspection by the Engineer. Acceptance or rejection of the system shall be based on the Specifications contained in this Section.

1.08 SUBMITTALS

A. Submittals shall conform to Section 01 33 00 - Submittal Procedures.
B. Action Submittals

1. Shop Drawings

i. Detail fabrication and installation of structural precast concrete units including joint interface at member ends and to each adjoining members.
ii. Indicate locations, plan views, elevations, dimensions, shapes, and cross sections of each unit, openings, support conditions and types of reinforcement, including special reinforcement.
iii. Detail loose and cast-in hardware, lifting and erection inserts, connections, and interface surfaces.
iv. Indicate location and details of joint treatment.
v. Designate and provide details for all separate compartments (if any) within the stormwater storage system as described in Section 1.06.A.10.

2. Concrete Design Mixtures

i. Include a submittal for each concrete design mixture including compressive strength.

3. Water Storage Sizing

i. Include supporting data to confirm the stormwater storage system is sized with sufficient water storage capacity per the Plans and Water Quality Management Plan (WQMP).
ii. Alternate stormwater storage systems to any Specified system shall supply a continuous simulation hydrologic model that supports the system is sized with sufficient water storage capacity, conforms to the required draw-down time, and conforms to the maximum release rates and other pertinent design parameters as detailed on the Plans and in the WQMP. The model and results shall be reviewed and require Approval by the Reviewing Agency prior to acceptance of an alternate system.

C. Informational Submittals

1. Material Test Reports

i. Aggregates: Material test reports shall be from an accredited agency indicating and interpreting test results for compliance with Reference Standards and Specifications as detailed herein.
ii. Compressive Strength: Concrete compressive strength test results shall be supplied for each batch of concrete utilized in the production of the precast concrete, modular, buried, stormwater storage units.

2. Material Certifications: Material certifications shall be signed by the Manufacturers certifying that each of the following items comply with the Reference Standards and Specifications as detailed herein.

i. Cementitious materials.
ii. Reinforcing materials.
iii. Admixtures.
iv. Bearing pads.
v. Sealants.

3. Operations and Maintenance Manual.

4. Installation Verification: The installation of the subsurface, stormwater storage system shall be verified by a Licensed Professional Engineer and a certification provided indicating that the system has been constructed and is in substantial conformance with the Approved Plans and WQMP.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Deliver all precast concrete members in such quantities and at such times to assure compliance with the agreed upon Project schedule and setting sequence to ensure continuity of installation.
B. Transport and handle members in a manner to avoid excessive stresses that could cause cracking or other damage.
C. Store members with adequate dunnage and bracing, and protect units to prevent contact with soil, staining, and to control cracking, distortion, warping or other physical damage.
D. Store members with dunnage across the full width of each bearing point unless otherwise Specified or shown on the Shop Drawings.
E. Place stored members so identification marks are clearly visible and units can be inspected.
F. Place dunnage of even thickness between each member.
G. Members may be stacked according to the manufacturer's recommendation.
H. Lift and support members only at designated points indicated on the Shop Drawings. Do not drag, slide or push members.
I. Accessories:
1. Accessory components shall be delivered in the manufacturer's original, unopened packaging and/or containers with labels that clearly identify the make, model and manufacturer.
2. Accessory components shall be stored in a clean, dry area out of direct sunlight.

PART 2 - PRODUCTS
2.01 MANUFACTURER

A. Precon Products
240 West Los Angeles Avenue
Simi Valley, California 93065
Phone: (800) 882-3399
Email: info@pre-conproducts.com
Website: www.preconproducts.com

2.02 MODULAR BURIED STORMWATER STORAGE UNITS

A. All material shall meet or exceed the applicable standards referenced in this Specification and shall conform to all federal, state, and local requirements.
B. Precast Concrete Members
1. ***(Specifier Note: Select the appropriate configuration and delete all other configurations. Edit the font to standard font when completed.)***
- ***Storm Prism™ EQ Single Module with modular, precast concrete, orifice base for infiltration.***
- ***Storm Prism™ EQ Single Module with modular, precast concrete, pad footing for infiltration.***
- ***Storm Prism™ EQ Single Module with modular, precast concrete, beam footing for infiltration.***
- ***Storm Prism™ EQ Double Module with orifice base for infiltration.***

LOCATION:T:\Drawings\Vault\25830\90\Storm Prism\Customer\Skylinks\Master Parts\Skylink 10ft Deep SPEQ 4.24.23.dwg

1. Cement shall be Type II/V Portland cement conforming to ASTM C 150.
2. Aggregate shall conform to ASTM C33, except that the requirement for gradation shall not apply.
3. Reinforcement shall consist of steel bar conforming to ASTM A615, Grade 60/80, glass fiber reinforced polymer bars conforming to ASTM D7957, or mesh conforming to ASTM A1064, Grade 60/80.
4. All sections shall be cured by an approved method. Sections shall not be shipped until the concrete has attained full design strength as determined by an American Concrete Institute Certified Laboratory Technician - Level 2 but in no case shall the compressive strength be less than 2,000 psi.
5. Pipe openings shall be sized to accept pipes of the specified size(s) and material(s), and shall be sealed by the Contractor with hydraulic cement grout conforming to ASTM C1107 or sealed by use of a Resilient Connector conforming to ASTM C923, C1478, or F2510.
6. Access risers and any necessary associated grade adjustments shall conform to ASTM A478 for round access risers and ASTM C857, C858, or C913 for square/rectangular access risers and shall provide for an access opening with a minimum dimension of 48-inches.
7. Castings for manhole frames and covers shall be in accordance with ASTM A48, CL.30B and AASHTO M105. The access cover/s shall be designed for HS20-44 traffic loading and shall provide a minimum of 30-inch clear opening.
8. Brick or masonry used to level the manhole frames and covers to finished grade shall conform to ASTM C32 or ASTM C139 and shall be installed in conformance with all local requirements.

(Specifier Note: Section C. for Field Poured Concrete Slabs is only necessary for certain configurations of the modular, buried, stormwater storage system. Delete this Section if the Field Poured Concrete Slab is not to be utilized.)

B. Field Poured Concrete Slab

1. The dimensions of the slab shall be as detailed on the Plans.
2. Cement shall be Type II/V Portland cement conforming to ASTM C 150 or blended hydraulic cement conforming to ASTM C595.
3. Aggregate shall conform to ASTM C33, except that the requirement for gradation shall not apply.
4. Reinforcement shall consist of bar conforming to ASTM A615, Grade 60/80 or mesh conforming to ASTM A1064, Grade 60/80.
5. All sections shall be cured by an approved method. Vertical construction shall not begin until the concrete has attained full design strength as determined by a Licensed Professional Engineer but in no case shall the compressive strength be less than 2,000 psi.

C. Accessory Components

1. Spacer for use between concrete members shall be a ½" thick x 4" wide closed-cell polypropylene foam conforming to ASTM D8139, ASTM D1751, and ASTM D545.
2. Joint sealer to span between concrete member roofs shall be a polyolefin backed exterior joint wrap conforming to ASTM C877.

D. Bedding, Backfill and Final Fill

1. Bedding Material: The bedding material for the precast concrete, modular, buried, stormwater storage system shall be a clean, washed, poorly graded, free-draining, angular faced, crushed aggregate conforming to ASTM D448, classification size No. 6 or No. 67. The bedding material shall be a minimum of 6-inches deep and shall extend beyond the footprint of the stormwater storage system by a sufficient distance to ensure working room to properly and safely compact bedding and backfill materials but at no times shall the distance be less than 18-inches.
2. Backfill Material: Backfill material for the precast concrete, modular, buried, stormwater storage system shall be a clean, washed, poorly graded, free-draining, angular faced, crushed aggregate conforming to ASTM D448, classification size No. 6 or No. 67.
3. Final Fill: The final fill material shall conform to ASTM D2487 any classification except OL, CH, MH, OH, and PT provided the material can be adequately compacted with no adverse effects to the stormwater storage system.
4. If any bedding, backfill, or final fill material is selected to be a poorly graded (open graded) material, the material shall be separated by a non-woven geotextile conforming to AASHTO M229, Class 2.

PART 3 - EXECUTION

3.01 Earthwork

A. Excavation, trenching, and backfilling shall be as specified in Division 31 00 00 "Earthwork."

3.02 Identification

A. All precast concrete, modular, buried, stormwater storage systems shall be identified at the surface level with permanent, clearly visible markings indicating they are stormwater storage systems.

3.03 Inspection

A. General

1. Precast concrete members, accessories, and aggregate material used during installation shall be inspected prior to installation and any defective, damaged or non-conforming material shall be replaced.

B. Precast Concrete Members

1. Any precast concrete member with a fracture or continuous crack greater than 12-inches in length and 0.01 in width shall be rejected and replaced.
2. Any precast concrete member that has not reached the required design strength shall be rejected and replaced.
3. Any precast concrete member with indications of imperfections in mixing and/or molding, honeycombed, or open textured surface, shall be rejected and replaced.
4. Any precast concrete member with indications of substantial patches or repairs shall be rejected and replaced.
5. Any precast concrete member with exposed reinforcing steel shall be rejected and replaced.

(Specifier Note: This Section for Field Poured Concrete Slabs is only necessary for certain configurations of the modular, buried, stormwater storage system. Delete this Section if the Field Poured Concrete Slab is not to be utilized.)

C. Field Poured Concrete Slab

1. Any field poured concrete with a fracture or continuous crack greater than 12-inches length and 0.01 in width shall be rejected and re-poured.
2. Any field poured concrete that has not reached the required design strength shall be rejected and re-poured.
3. Any field poured concrete with indications of imperfections in mixing and/or molding, honeycombed, or open textured surface, shall be rejected and re-poured.
4. Any field poured concrete with indications of substantial patches or repairs shall be rejected and re-poured.
5. Any field poured concrete with exposed reinforcing steel shall be rejected and re-poured.

3.04 Stormwater Storage System Installation

A. General

1. General Locations and Arrangements: Plans and Shop Drawings shall indicate the general location and arrangement of the stormwater storage system. Installation shall conform to ASTM C891. Where specific installation procedures are not indicated in this Referenced Specification or the Plans, follow the product manufacturer's written instructions.

2. All precast concrete members shall be inspected for defects and cracks before being lowered into the trench. Any defective, damaged or unsound structure or any product that has had its grade disturbed after laying shall be taken up and replaced. The interior of the treatment system shall be free from dirt, excess water and other foreign materials as the installation progresses and left clean at the completion of the installation.

3.05 Excavation

A. Excavation

1. Excavate the pit to ensure that sides will be stable under all working conditions. Slope trench walls or provide supports in conformance with all federal, state, and local safety standards. Excavate only as much as can be safely maintained by available equipment.
2. Where excavation walls are stable or supported, provide a width sufficient, but no greater than necessary, to ensure working room to properly and safely place and compact embedment materials. The space between the stormwater storage system and excavation wall must be wider than the compaction equipment used in the compaction area.

B. Dewatering

1. Do not lay or embed any precast concrete member in standing or running water. Surface runoff shall be prevented from entering the excavation at all times.
2. When water is present in the work area, dewater to maintain stability of in-situ and imported materials. Maintain water level below the stormwater storage system bedding and foundation to provide a stable excavation bottom. Use, as appropriate, sump pumps, well points, deep wells, geotextiles, perforated underdrains, or stone blankets of sufficient thickness to remove and control water in the excavation. When excavating while depressing ground water, ensure the ground water is below the bottom of cut at all times to prevent washout from behind sheeting or sloughing of exposed excavation walls. Maintain control of water in the excavation before, during, and after the stormwater storage system installation and until embedment is installed and sufficient backfill has been placed to prevent flotation of the system, attached piping or accessory drainage structures.

C. Removal of Rock

1. Rock in either ledge or boulder formation shall be replaced with suitable materials to provide a compacted earth cushion having a thickness between exposed rock and the stormwater storage system of at least 12 inches.

D. Removal of Unstable Material

1. Where wet or otherwise unstable soil incapable of properly supporting the stormwater storage system, as determined by the Engineer, is encountered in the bottom of an excavation, such material shall be removed to at least 24 inches below bottom of the system and replaced to the proper grade with select granular material, compacted as directed by the Engineer. When removal of unstable material is due to the fault or neglect of the Contractor while performing shoring and sheeting, water removal, or other specified requirements, such removal and replacement shall be performed at no additional cost to the Owner.

3.06 Bedding

A. A stable and uniform bedding shall be provided for the stormwater storage system and any protruding features. The bedding shall be compacted to a minimum of 90% of maximum density per AASHTO T99, or as shown in the Plans. Structure bedding shall be a minimum of 6" in thickness. The bedding surface shall provide a firm foundation of uniform density throughout the entire footprint of the system.

3.07 Placing Precast Concrete Members

A. Each precast concrete member shall be thoroughly examined before being placed; defective or damaged members shall not be used. Precast concrete members shall be placed to within ± ½" of the elevations as indicated on the Plans. Proper equipment shall be provided for lowering and setting precast concrete members into the excavation. Precast concrete members shall not be laid in water, and the members shall not be laid when trench conditions or weather are unsuitable for such work. Diversion of drainage or dewatering of excavations shall be provided as directed by the Engineer; see dewatering section.
B. Precast concrete members shall receive a ½" thick x 4" wide closed-cell polypropylene foam conforming to ASTM D8139, ASTM D1751, and ASTM D545 on all sides that will abut an adjacent member. The foam member shall remain in place to ensure proper alignment.
C. Precast concrete members shall be placed and aligned to within 1-1/4" of each other horizontally and vertically. The Engineer should be consulted for a course of action when joint gaps exceed 1-1/4".
D. Precast members transferring vertical loads to other members or slabs shall use a random oriented fiber bearing pad conforming to ASTM D4014 and ASTM D5992 between members with a minimum bearing surface area of 18 square-inches.
E. Minor mis-alignment of upper sections on slab or upper sections on other members may be adjusted through shimming using random oriented fiber pads conforming to the ASTM D4014 and ASTM D5992 provided the minimum bearing surface area from Section 3.07-D. is maintained.

3.08 Jointing/Sealing

A. Joints on the exterior top and side surface shall be sealed using a polyolefin backed exterior joint wrap conforming to ASTM C877. The joint wrap shall span the joint by a minimum of 4-inches on either side of the joint.
B. All sealed joints shall be protected from damage during placement of additional members and during final backfill. Damage during construction shall require re-sealing of the joints.

3.09 Backfilling

A. General

1. Backfill placement and compaction shall be constructed in accordance with the Specifications herein and the product manufacturer's published installation guides.

B. Backfilling Stormwater Storage System in Excavation

1. After the precast concrete member and accessory drainage connections have been properly bedded, select material from excavation or borrow, at a moisture content that will facilitate compaction, shall be placed along all sides of the system in layer depths to ensure minimum compaction density is obtained evenly throughout the backfill material. The backfill shall be brought up evenly on all sides of the structure. Each layer shall be thoroughly compacted with mechanical tampers or rammers. Tests for density shall be made as necessary to ensure conformance to the compaction requirements as Specified in the Geotechnical Report. Where it is necessary, in the opinion of the Engineer, that sheeting or portions of bracing used be left in place, the contract will be adjusted accordingly. Untreated sheeting shall not be left in place beneath structures or pavements.

C. Movement of Construction Machinery

1. Movement of construction machinery over a stormwater storage system at any stage of construction shall be at the Contractor's risk. Any damaged member shall be removed and replaced. Any equipment used during any stage of construction shall have a loading no greater than HS20 per AASHTO - Standard Specifications for Highway Bridges, 17th Edition - 2002. Permissible equipment shall not be permitted to operate over top of the system with less than 12-inches of structural cover.

END OF SECTION 33 46 23

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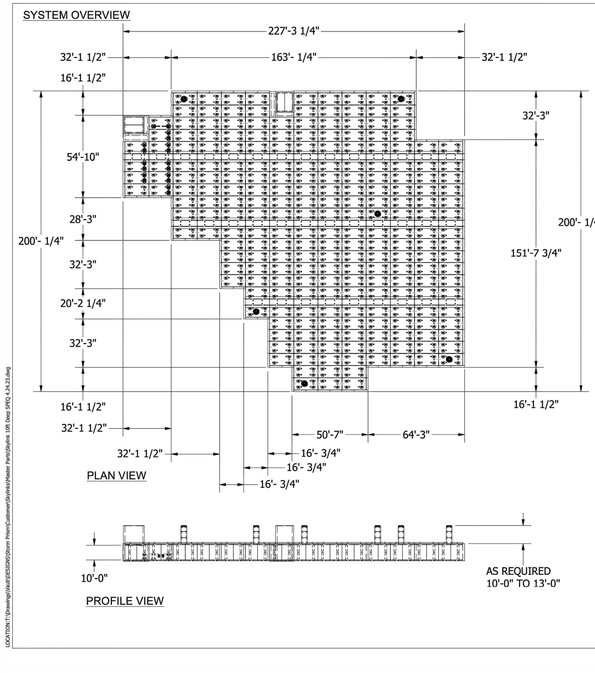
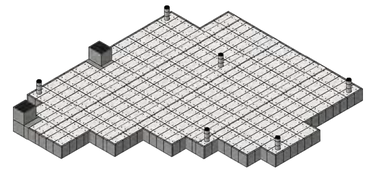
240 W. LOS ANGELES AVE.
SIMI VALLEY, CA 93065
P: (805) 527-0941 F: (805) 584-0769,
WWW.PRE-CONPRODUCTS.COM

TITLE: Notes
DRAWN BY: K.STRADER
DATE: 4/25/2023
SHEET: 3 OF 18

SYSTEM OVERVIEW





ISOMETRIC VIEW

STORAGE CAPACITY
V = 278,363 CF (6.39 AC-FT)
12" FREEBOARD, INCLUDES 11.674 CF IN 12" OF ROCK BASE. FOOTPRINT AREA AVAILABLE FOR INFILTRATION 33.714 SF.

INLETS, MANWAY ACCESS LOCATION AND SIZE TBD

REVISIONS
No. DATE DESCRIPTION

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SIMI VALLEY, CA 93065
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WWW.PRE-CONPRODUCTS.COM

TITLE: SYSTEM OVERVIEW
SKYLINKS,
4800 E. WARDLOW ROAD,
LONG BEACH, CA 90808
DRAWN BY: K.STRADER
DATE: 4/25/2023
SHEET: 4 OF 18

DESIGNED BY: AMT
DRAWN BY: AMT
DESIGN CHECK BY:
DRAFTING CHECK BY:
APPROVAL
AS-BUILT:
REF. DWG. X-XXXX
DWG. X-XXXX

REGISTERED PROFESSIONAL ENGINEER
ARIC M. TORRESON
NO. 66068
EXP. 6-30-26
CIVIL
STATE OF CALIFORNIA

SKYLINKS REGIONAL
STORMWATER CAPTURE PROJECT
BMP DETAILS 1

DRAWING REF. C17
FIELD BOOK X.X.X.
PAGE

MUNIS Project # XXXX-XXXX-XXXX
Phase# XXXX / Rebid: N/A
SHEET 19 OF 70
NOTE:

TETRA TECH
www.tetratech.com
17885 VON KARMAN AVE #500,
IRVINE, CA 92614
PHONE: (949) 809-5000

LAST SAVED BY: ryan.cheyne
PLOT DATE: Jun. 17, 25 SAVED PATH: P:\Wtr\141970.01 clb skylinks phase 2\05 design\02 Sheets

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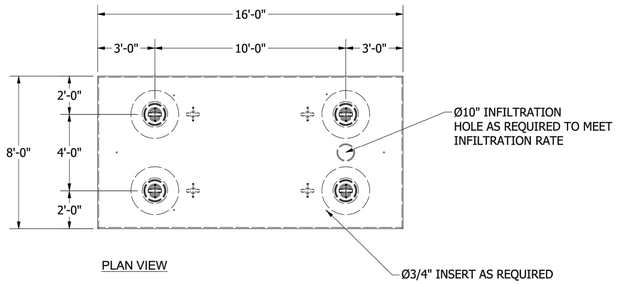

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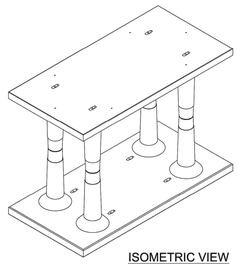

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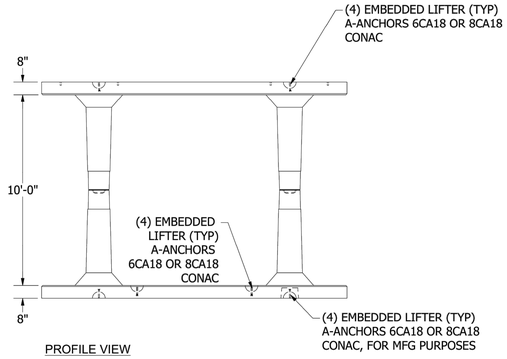

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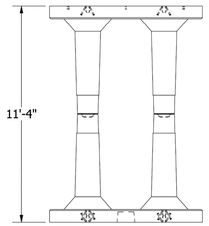

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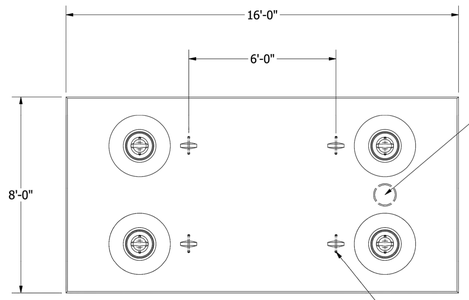

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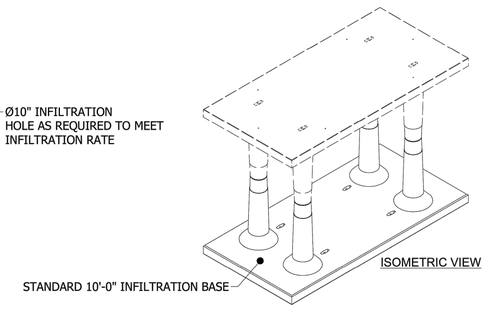

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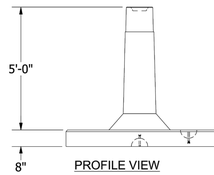

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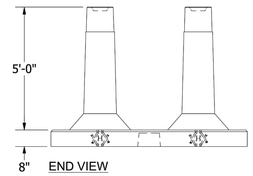

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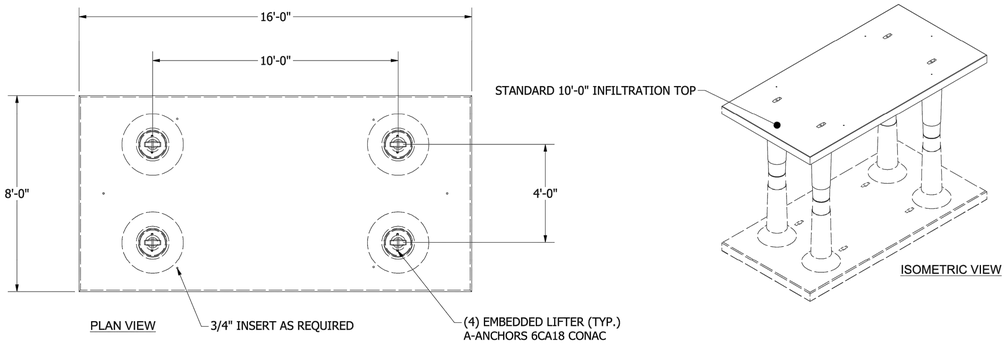
STANDARD 10'-0" INFILTRATION TOP



PLAN VIEW

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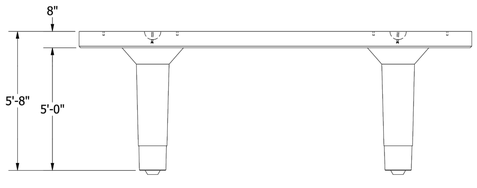

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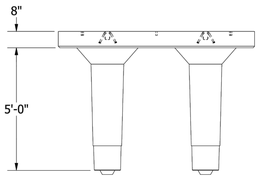
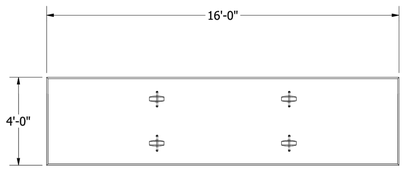


END VIEW

STANDARD 4'-0" EXTENSION BASE



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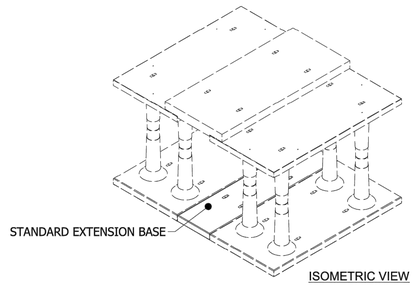

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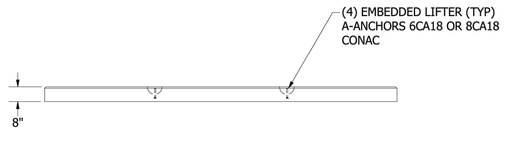


PROFILE VIEW

END VIEW

REVISIONS				DESCRIPTION
No.	DATE	SHEET	APPROVAL	
				REF. DWG. X-XXXX DWG. X-XXXX
				AS-BUILT: DWG. X-XXXX

DESIGNED BY: AMT
DRAWN BY: AMT
DESIGN CHECK BY:
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
ERIC M. TORRESON
NO. 66068
EXP. 6-30-26
CIVIL
STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT BMP DETAILS 2

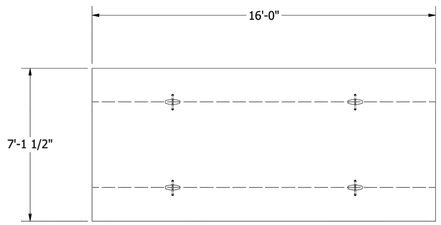
DRAWING REF. C18
PAGE
FIELD BOOK X.X.X.

MUNIS Project # XXXX-XXXX-XXXX
Phase# XXXX / Rebid: N/A
SHEET 20 OF 70
NOTE:

TETRA TECH
www.tetratech.com
17885 VON KARMAN AVE #500,
IRVINE, CA 92614
PHONE: (949) 809-5000

LAST SAVED BY: ryan.cheyne
PLOT DATE: Jun. 17, 25 SAVED PATH: P:\Watr\141970.01 clb skylinks phase 2\05 design\02 Sheets

STANDARD 4'-0" EXTENSION TOP



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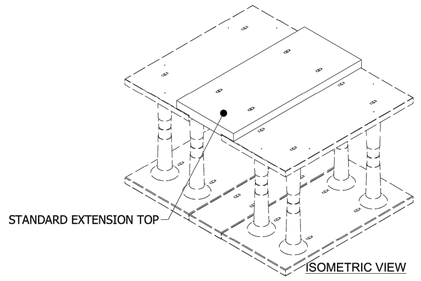

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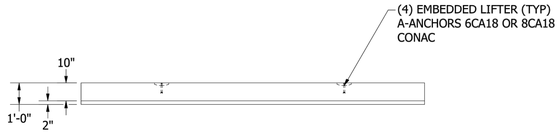
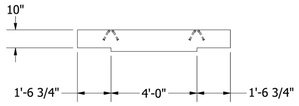


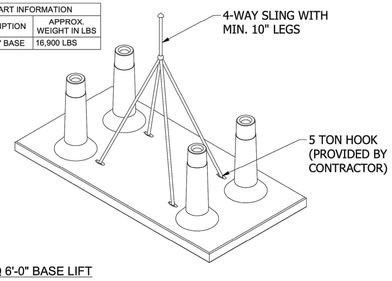
PROFILE VIEW



END VIEW

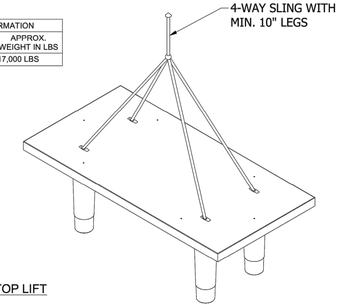
STANDARD LIFTING DETAIL

PART INFORMATION	
DESCRIPTION	APPROX. WEIGHT IN LBS
EQ 10'-0" BASE	16,900 LBS



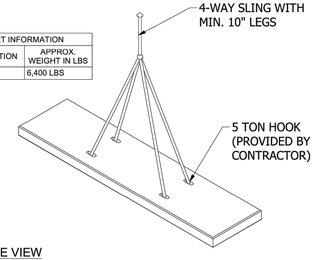
SPEQ 6'-0" BASE LIFT

PART INFORMATION	
DESCRIPTION	APPROX. WEIGHT IN LBS
EQ 10'-0" TOP	17,000 LBS



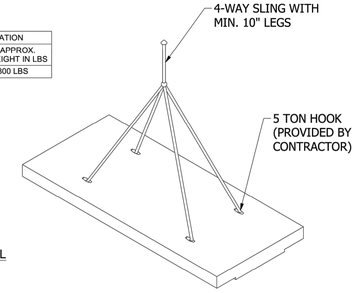
SPEQ 6'-0" TOP LIFT

PART INFORMATION	
DESCRIPTION	APPROX. WEIGHT IN LBS
SPEB	6,400 LBS



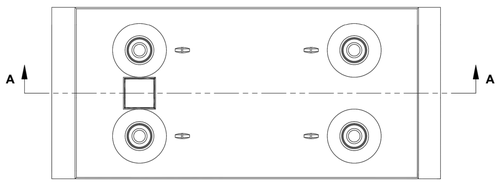
PROFILE VIEW

PART INFORMATION	
DESCRIPTION	APPROX. WEIGHT IN LBS
SPET	15,800 LBS

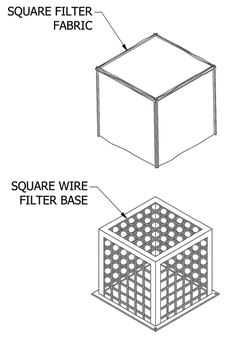


LIFTING DETAIL

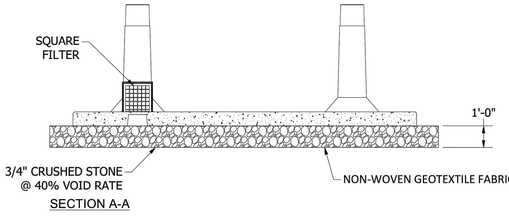
FILTER INFORMATION



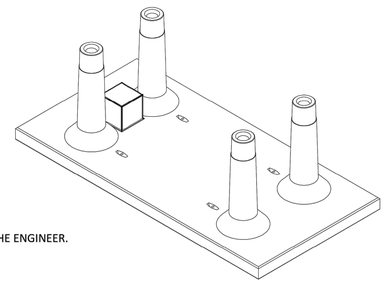
PLAN VIEW OF BASE ONLY

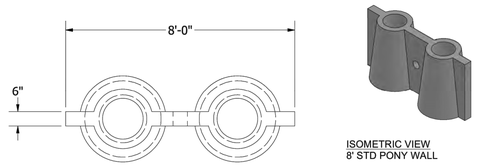


FILTER



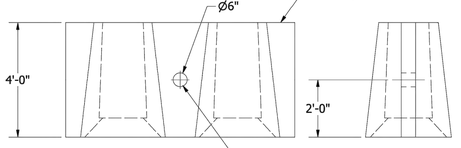
SECTION A-A





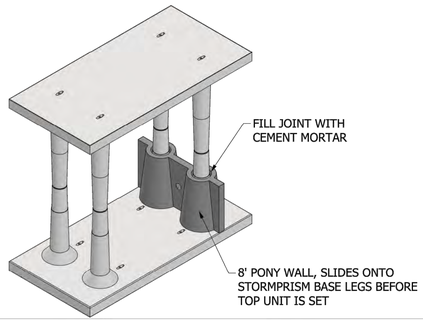
PLAN VIEW
8' STD PONY WALL

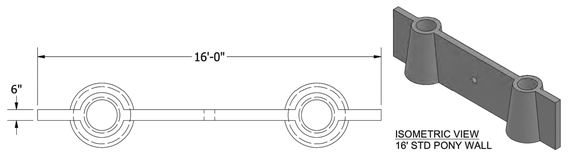
ISOMETRIC VIEW
8' STD PONY WALL



PROFILE VIEW
8' STD PONY WALL

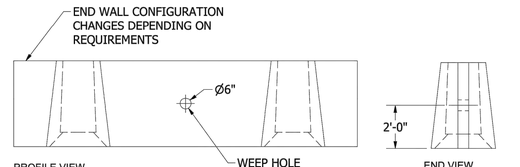
END VIEW
8' STD PONY WALL





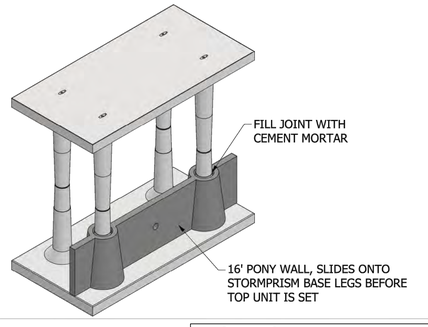
PLAN VIEW
16' STD PONY WALL

ISOMETRIC VIEW
16' STD PONY WALL



PROFILE VIEW
16' STD PONY WALL

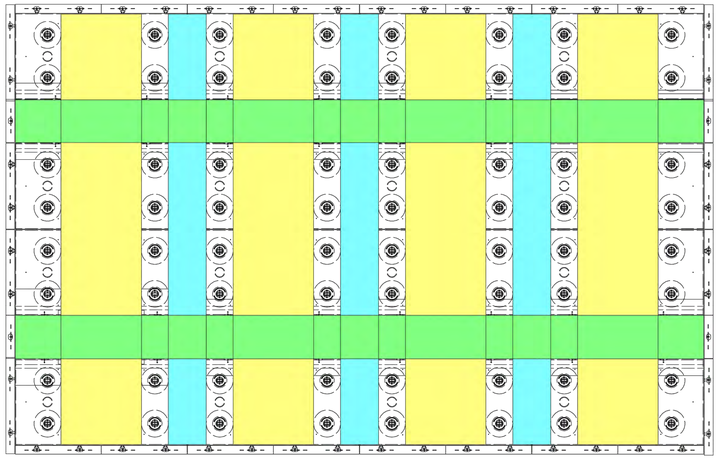
END VIEW
16' STD PONY WALL



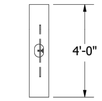
REVISIONS				
No.	DATE	SHEET	APPROVAL	DESCRIPTION

SAMPLE ROW WIDTH INFORMATION

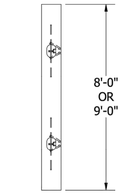
ROW WIDTH = 7'-6"
ROW WIDTH = 3"-6"
ROW WIDTH = 4'-0"



STANDARD 11'-4" WALL

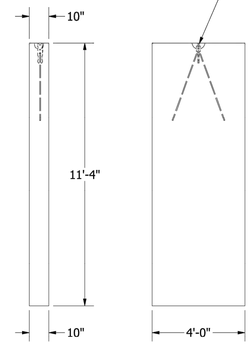


PART INFORMATION	
DESCRIPTION	APPROX. WEIGHT IN LBS
EXTERNAL WALLS 4'Wx 11'-4" T	5,675 LBS

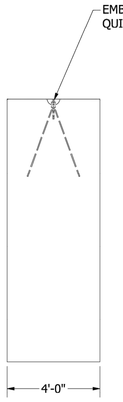


PART INFORMATION	
DESCRIPTION	APPROX. WEIGHT IN LBS
EXTERNAL WALLS 8'Wx 11'-4" T	11,325 LBS
EXTERNAL WALLS 9'Wx 11'-4" T	12,400 LBS

PLAN VIEW

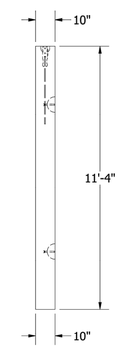


PROFILE VIEW

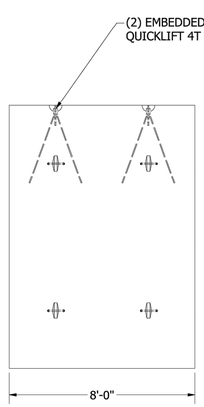


SIDE VIEW

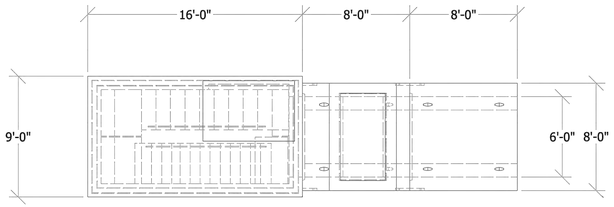
PLAN VIEW



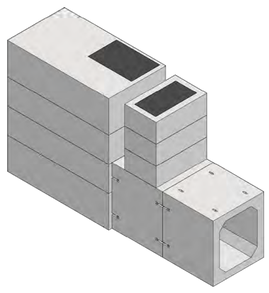
PROFILE VIEW



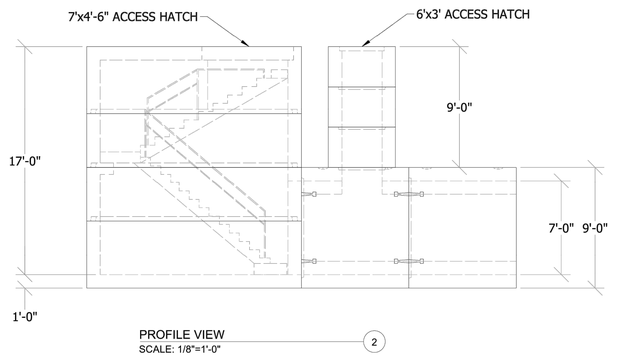
SIDE VIEW



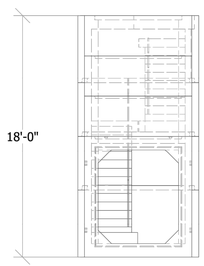
PLAN VIEW
SCALE: 1/8"=1'-0" (1)



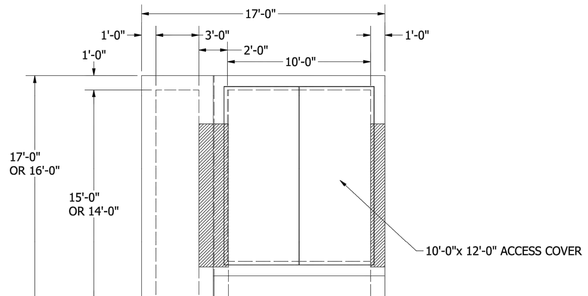
ISOMETRIC VIEW
SCALE: 1/8"=1'-0" (4)



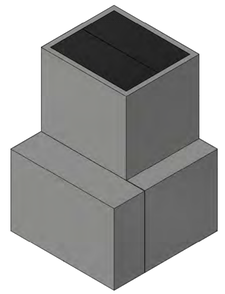
PROFILE VIEW
SCALE: 1/8"=1'-0" (2)



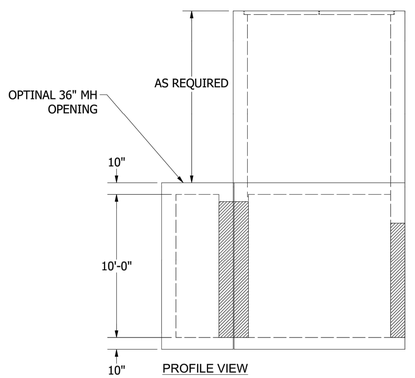
SIDE VIEW
SCALE: 1/8"=1'-0" (3)



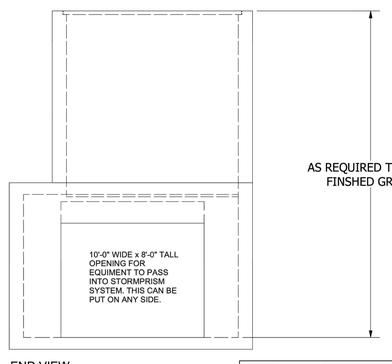
PLAN VIEW



ISOMETRIC VIEW



PROFILE VIEW



END VIEW

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION

AS-BUILT:

REF. DWG. X-XXXX DWG. X-XXXX
DWG. X-XXXX

DESIGNED BY: AMT
DRAWN BY: AMT
DESIGN CHECK BY:
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
ERIC M. TORRESON
NO. 66068
EXP. 6-30-26
CIVIL
STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT BMP DETAILS 4

DRAWING REF. C20

PAGE

FIELD BOOK X.X.X.

MUNIS Project # XXXX-XXXX-XXXX

Phase# XXXX / Rebid: N/A

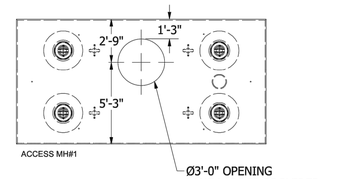
SHEET 22 OF 70

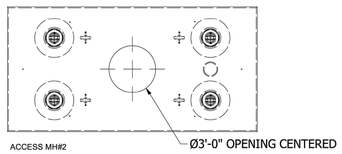
NOTE:

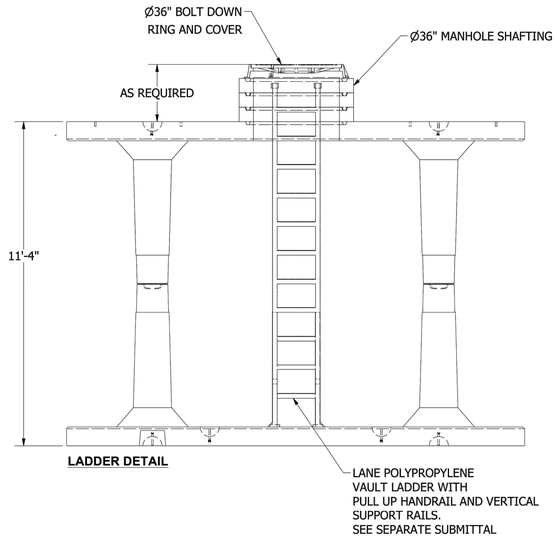
TETRA TECH
www.tetratech.com
17885 VON KARMAN AVE #500,
IRVINE, CA 92614
PHONE: (949) 809-5000

LAST SAVED BY: ryan.cheyne
PLOT DATE: Jun. 17, 25 SAVED PATH: P:\Wat\141970.01 clb skylinks phase 2\05 design\02 Sheets

OPTIONAL MANWAY ACCESS LOCATIONS

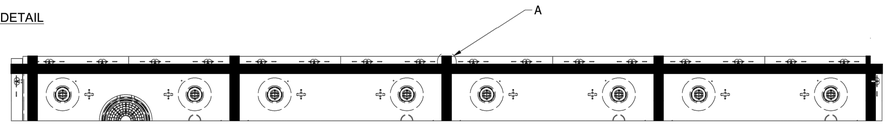




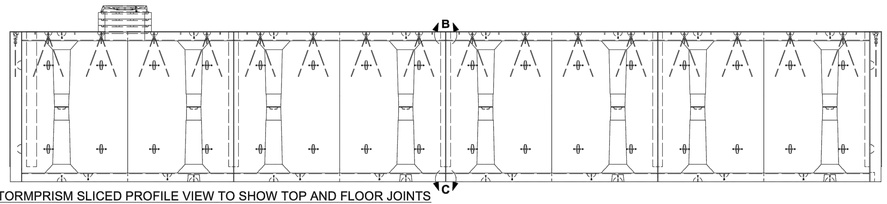


LADDER DETAIL

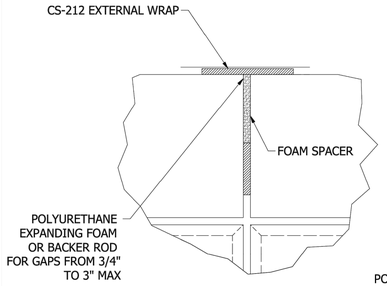
JOINT SEALANT DETAIL



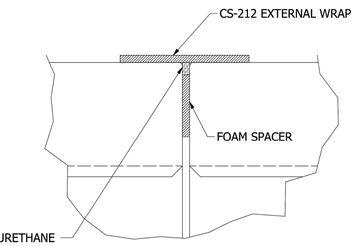
STORMPRISM SLICED PLAN VIEW TO SHOW WALL JOINT



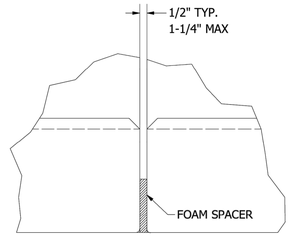
STORMPRISM SLICED PROFILE VIEW TO SHOW TOP AND FLOOR JOINTS



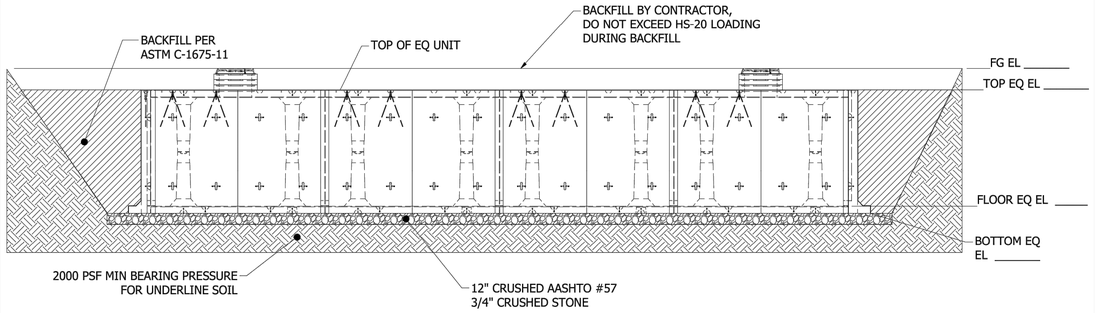
DETAIL A
WALL JOINT
ONLY VERTICAL PART OF WALL IS DETAILED FOR CLARITY



DETAIL B
TOP JOINT
WALL JOINT SEALANT NOT SHOWN FOR CLARITY



DETAIL C
BOTTOM JOINT



INSTALLATION SPECIFICATIONS

Storm Prism shall be installed in accordance with ASTM C-891-11 Standard Practice for Installation of Underground Precast Concrete Utility Structures.
The bearing pressure of the underlying soil must be verified by the geotechnical engineer prior to placing aggregate sub base.
The leveling bed material shall comply with APWA 216-2.4.
The leveling bed shall be graded to a tolerance of ½" of the plan elevation.
The leveling bed shall extend beyond the Storm Prism perimeter by at least 24".
The Storm Prism modules shall be placed on line and grade per the site plans. Space between modules shall be 1/2" plus / minus 1/2"
Storm Prism modules are designed to be soil tight. All exterior joints between adjacent modules shall be sealed using a preformed, cold applied, self-adhering, polymer wrap conforming to: ASTM E-1745, C-877,
C-990 Specifications, and AASHTO M198 Type B.
Wrap shall be applied per manufacture's recommendations.

BACKFILL

Fill placed around the Storm Prism Modules shall be placed evenly around the entire system in 8" lifts,
per APWA 300-3.5.2.
Backfill shall be mechanically compacted (no jetting).
Special care should be taken when compacting adjacent to or near the tape seal not to disrupt the seal.
Fill placement over top of Storm Prism shall be done in accordance with ASTM C1675. Fill material not
to exceed 120 PCF. At no time shall machinery or vehicles exceeding HS-20 travel over the Storm Prism.

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION
				REF. DWG. X-XXXX DWG. X-XXXX
				AS-BUILT: DWG. X-XXXX

DESIGNED BY: AMT
DRAWN BY: AMT
DESIGN CHECK BY:
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
ERIC M. TORRESON
NO. 66068
EXP. 6-30-26
CIVIL
STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT BMP DETAILS 5

DRAWING REF. C21
FIELD BOOK X.X.X.
PAGE

MUNIS Project # XXXX-XXXX-XXXX
Phase# XXXX / Rebid: N/A
SHEET 23 OF 70
NOTE:

TETRA TECH
www.tetratech.com
17885 VON KARMAN AVE #500,
IRVINE, CA 92614
PHONE: (949) 809-5000

LAST SAVED BY: ryan.cheyne
PLOT DATE: Jun. 17, 25 SAVED PATH: P:\Wat\141970.01 clb skylinks phase 2\05 design\02 Sheets

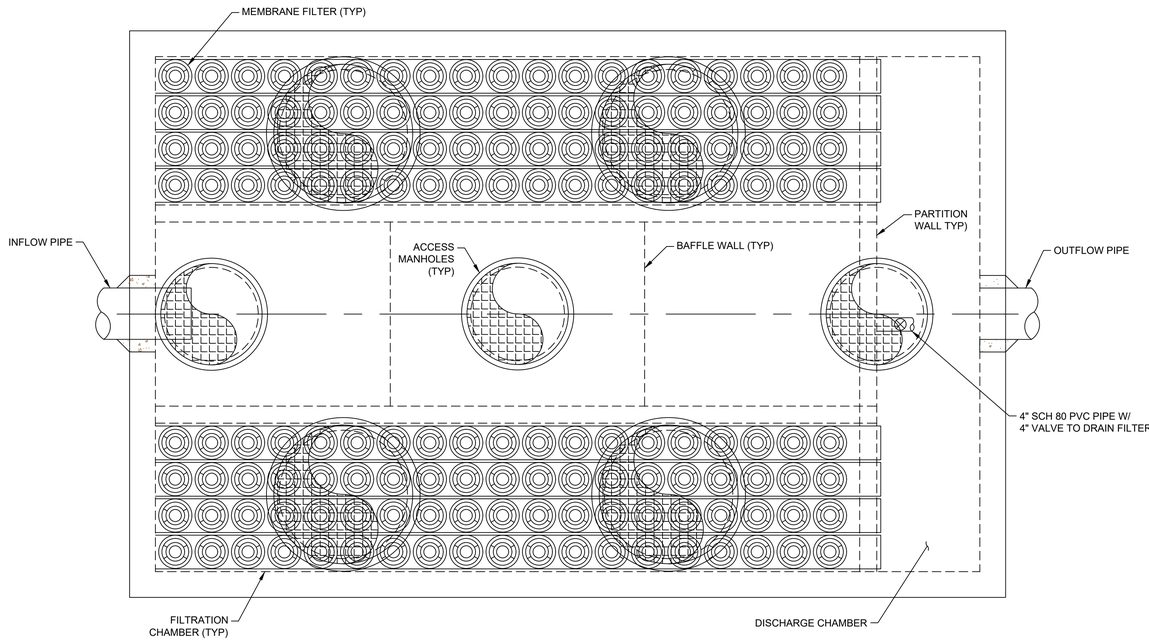
PERFORMANCE REQUIREMENTS:

PERFORMANCE REQUIREMENTS FOR THE FILTRATION UNITS (2@3.89 CFS EACH):

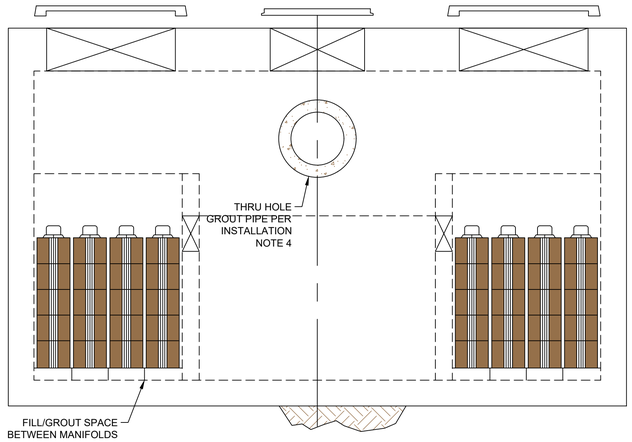
1. THE STORM WATER QUALITY FILTER TREATMENT DEVICE SHALL FUNCTION TO REMOVE POLLUTANTS BY THE FOLLOWING UNIT TREATMENT PROCESSES;
   - SEDIMENTATION
   - FLOATATION
   - MEMBRANE FILTRATION
2. THE STORMWATER QUALITY FILTER TREATMENT DEVICE SHALL BE CAPABLE OF REMOVING OIL, DEBRIS, TRASH, SEDIMENT-BOUND POLLUTANTS, METALS, AND NUTRIENTS FROM STORMWATER OVER A RANGE OF FLOWS.
3. THE STORMWATER QUALITY FILTER TREATMENT DEVICE SHALL TREAT 100% OF THE REQUIRED WATER QUALITY TREATMENT FLOW BASED ON A MAXIMUM COMBINED TREATMENT RATE ACROSS THE MEMBRANE FILTER CARTRIDGES OF 2.88 CFS WITHOUT INTERNAL BYPASS OF UNTREATED STORMWATER.
4. THE STORMWATER QUALITY FILTER TREATMENT DEVICE SHALL BE COMPATIBLE WITH THE EJECTOR PUMPS PROVIDED ON THIS PROJECT TO PROVIDE MAXIMUM TREATMENT AT THE RATE SPECIFIED.
5. THE STORMWATER QUALITY FILTER TREATMENT DEVICE SHALL ACHIEVE A MINIMUM OF 80% TOTAL SUSPENDED SOLIDS REMOVAL AT THE DESIGN FLOW RATE WITH A MAXIMUM D50 PARTICLE SIZE OF 55 MICRONS.

INSTALLATION NOTES:

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE FILTER UNIT AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURERS CONTRACT.
2. MANUFACTURER RECOMMENDS A 6"-12" LEVEL ROCK BASE UNLESS SPECIFIED BY THE ENGINEER. CONTRACTOR IS RESPONSIBLE TO VERIFY PROJECT ENGINEERS RECOMMENDED BASE SPECIFICATIONS.
3. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. (PIPES CANNOT INTRUDE BEYOND FLUSH).
4. ALL GAPS AROUND PIPES SHALL BE SEALED WATER TIGHT WITH A NON-SHRINK GROUT PER MANUFACTURERS STANDARD CONNECTION DETAIL AND SHALL MEET OR EXCEED REGIONAL PIPE CONNECTION STANDARDS.
5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL RISERS, MANHOLES, AND HATCHES. ALL COVERS SHALL BE LOOSE. CONTRACTOR TO GROUT ALL MANHOLES AND HATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
6. CONTRACTOR TO PROVIDE AND INSTALL DOUBLE DOORS WITH SPRING-LOADED HINGES, SECURITY/LOCKING MECHANISM, AND FALL PROTECTION IN ALL HATCHES/VAULTS.



1 — PLAN VIEW
NTS



3 — END VIEW
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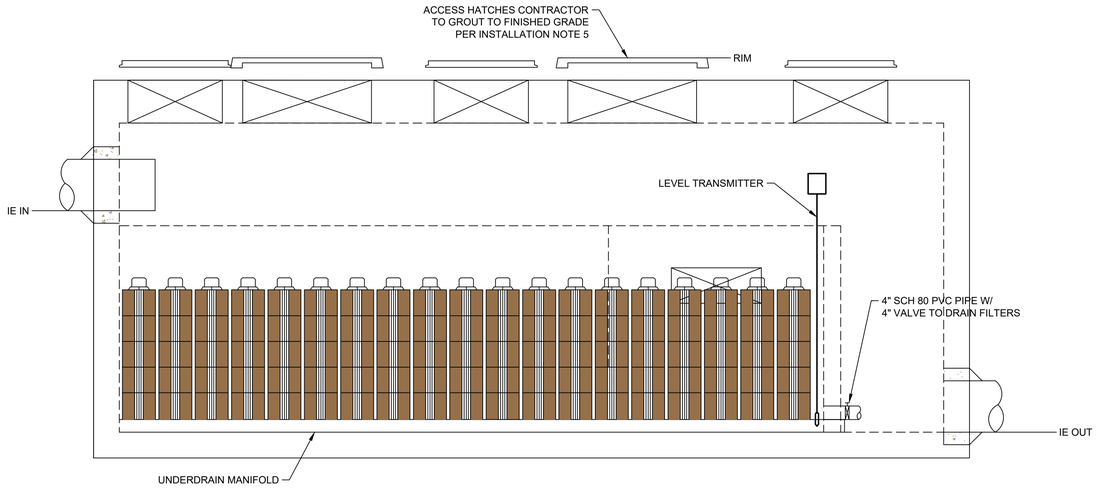

2 — ELEVATION VIEW
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REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION
				REF. DWG. X-XXXX DWG. X-XXXX
				DWG. X-XXXX
				AS-BUILT:

DESIGNED BY: AMT
DRAWN BY: AMT
DESIGN CHECK BY:
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
ARIC M. TORRESON
NO. 66068
EXP. 6-30-26
CIVIL
STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT BMP DETAILS 6

DRAWING REF. C22
PAGE
FIELD BOOK X.X.X.

MUNIS Project # XXXX-XXXX-XXXX
Phase# XXXX / Rebid: N/A
SHEET 24 OF 70
NOTE:

TETRA TECH
www.tetratech.com
17885 VON KARMAN AVE #500,
IRVINE, CA 92614
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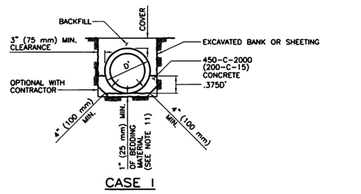
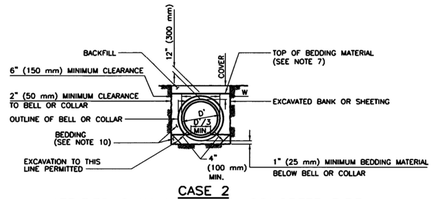


CASE 1

NOTE:
CASE 1 BEDDING (LOAD FACTOR 2.1)
SHALL BE USED WHERE SPECIFIED ON THE PLANS OR WHERE REQUIRED AS AN ALTERNATIVE TO CASE 2 OR CASE 3 BEDDING AS PROVIDED HEREON AND ON SH. 2. CASE 4 BEDDING SHALL BE USED INSTEAD OF CASE 1 AGAINST SHEETING OR UNSTABLE TRENCH SIDES IF SO REQUIRED BY THE ENGINEER.

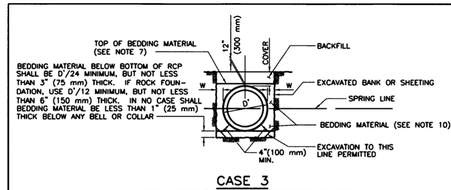


CASE 2
VITRIFIED CLAY AND PLAIN CONCRETE PIPE

NOTES:
CASE 2 BEDDING & BACKFILL AROUND PIPE (LOAD FACTOR 1.8)
(a) W AT SPRING LINE SHALL NOT BE LESS THAN 8" (150 mm) FOR ANY DEPTH OF TRENCH. THIS DIMENSION MAY INCLUDE THE THICKNESS OF ANY SHEETING.
(b) WHERE COVER IS GREATER THAN 8'-0" (2.5 m), W MEASURED AT TOP OF PIPE SHALL NOT BE GREATER THAN 8" (200 mm) UNLESS THE CONTRACTOR AT ITS OWN EXPENSE PROVIDES CASE 1 BEDDING OR STRONGER PIPE. THE STATED 8" (200 mm) INCLUDES THE THICKNESS OF ANY SHEETING.
(c) SCREED BEDDING MATERIAL TO FIT CURVATURE AND GRADE OF PIPE. TYPE OF SCREED AND THE METHOD OF USE TO BE APPROVED BY THE ENGINEER.

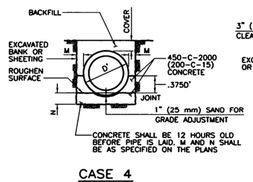
LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS		
PIPE BEDDING IN TRENCHES		STANDARD PLAN 3080-3
APPROVED Thomas G. Gackenbach DIRECTOR OF PUBLIC WORKS — 5/31/1992 DATE	1995, 1999, 2007 REVISIONS	SHEET 1 OF 3

STDPLN\LDPW_3080-3



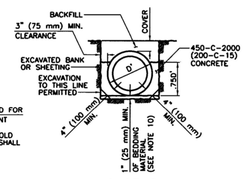
CASE 3
REINFORCED CONCRETE PIPE

NOTES:
CASE 3 BEDDING & BACKFILL AROUND RCP (LOAD FACTOR 2.2 TO 2.5)
(a) W AT SPRING LINE SHALL NOT BE LESS THAN THE FOLLOWING: 6" (150 mm) FOR RCP 60" (1500 mm) OR LESS IN DIAMETER, 10" (250 mm) FOR RCP 63" (1575 mm) TO 108" (2700 mm) INCLUSIVE IN DIAMETER, AND 12" (300 mm) FOR PIPE LARGER THAN 108" (2700 mm) IN DIAMETER. THESE DIMENSIONS MAY INCLUDE THE THICKNESS OF ANY SHEETING.
(b) WHERE COVER IS GREATER THAN 10'-0" (3 m), W MEASURED AT TOP OF PIPE SHALL NOT BE GREATER THAN 10" (250 mm) FOR RCP 108" (2700 mm) IN DIAMETER OR LESS, OR 12" (300 mm) FOR RCP OVER 108" (2700 mm) IN DIAMETER. THESE DIMENSIONS INCLUDE THE THICKNESS OF ANY SHEETING.
(c) SCREED BEDDING MATERIAL TO FIT CURVATURE AND GRADE OF RCP. TYPE OF SCREED AND THE METHOD OF USE TO BE APPROVED BY THE ENGINEER.
(d) BEDDING MATERIAL BELOW THE SPRING LINE FOR RCP 54" (1350 mm) OR LARGER SHALL BE COMPACTED BEFORE PLACING BEDDING MATERIAL ABOVE THE SPRING LINE.



CASE 4

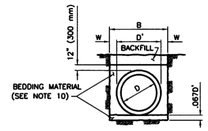
NOTE:
CASE 4 BEDDING (LOAD FACTOR 3.0)
WHERE REQUIRED BY THE ENGINEER AS AN ALTERNATIVE TO CASE 1 OR CASE 5 TO MEET CONDITIONS ARISING DURING CONSTRUCTION.



CASE 5

NOTE:
CASE 5 BEDDING (LOAD FACTOR 2.7)
SHALL BE USED WHERE SPECIFIED ON THE PLANS. CASE 4 BEDDING SHALL BE USED INSTEAD OF CASE 5 AGAINST SHEETING OR UNSTABLE TRENCH WALLS IF SO REQUIRED BY THE ENGINEER.

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS	
PIPE BEDDING IN TRENCHES	STANDARD PLAN 3080-3 SHEET 2 OF 3



CASE 6

NOTES:
CASE 6 BEDDING (LOAD FACTOR 1.5)
(a) NOTES (a), (b), AND (c) FROM CASE 3 SHALL APPLY.
(b) WHERE SUBGRADE IS COMPOSED OF OTHER THAN GRANULAR OR SANDY MATERIAL, THE TRENCH SHALL BE EXCAVATED TO DEPTH OF AT LEAST 3" (75 mm) BELOW THE PIPE AND BACKFILLED WITH BEDDING MATERIAL OR OTHER MATERIALS AS MAY BE SPECIFIED OR OTHERWISE APPROVED BY THE AGENCY.

NOTES
1. USE CASE 3 FOR RCP, CASE 2 FOR VITRIFIED CLAY, AND PLAIN CONCRETE PIPE UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE PLANS. SEE PLANS FOR BEDDING DETAILS FOR PIPE OF OTHER MATERIALS.
2. BEDDING MATERIAL SHALL CONFORM TO TABLE 3080-3.1

TABLE 3080-3.1	
PARTICLE SIZE (MAX.)	3/4"
% PASSING NO. 4 SIEVE (MIN.)	50
% PASSING NO. 16 SIEVE (MIN.)	15
SAND EQUIVALENT (MIN.)	20

3. CONCRETE BACKFILL SHALL BE POURED FROM WALL TO WALL OF THE TRENCH AND FROM THE BOTTOM OF THE TRENCH TO A MINIMUM DEPTH OF 4" (100 mm) OVER THE TOP OF THE PIPE.
4. CONCRETE BACKFILL SHALL BE PROVIDED FOR RCP 21" (525 mm) IN DIAMETER OR LESS WHERE THE COVER IS EQUAL TO OR LESS THAN 24" (600 mm), FOR RCP GREATER THAN 21" (525 mm) IN DIAMETER BUT LESS THAN 39" (975 mm) WHERE THE COVER IS LESS THAN 15" (375 mm) AND FOR RCP 39" (975 mm) OR GREATER WHERE THE COVER IS LESS THAN 12" (300 mm). CONCRETE BACKFILL SHALL CONFORM TO NOTE 3.
5. 3-EDGE BEARING TEST LOAD FACTOR (D-LOAD) = 1.0.
6. DIMENSIONS SHOWN ON THIS STANDARD PLAN FOR ENGLISH AND METRIC UNITS ARE NOT EQUIVALENT. IF METRIC UNITS ARE USED, ALL UNITS SHALL BE METRIC, IF ENGLISH UNITS ARE USED, ALL UNITS SHALL BE ENGLISH.
7. TOP OF BEDDING MATERIAL AS SHOWN, UNLESS OTHERWISE SHOWN ON THE PLANS OR SPECIFIED IN THE SPECIAL PROVISIONS.
8. D-LOADS FOR RCP TO BE PLACED IN ACCORDANCE WITH THIS STANDARD PLAN MUST BE DESIGNED FOR AN EMBANKMENT CONDITION, EVEN WHEN PLACED IN A TRENCH.
9. FOR WORK WITHIN THE JURISDICTION OF THE U.S. ARMY CORPS OF ENGINEERS, REFER TO PERMIT REQUIREMENTS.
10. BEDDING MATERIAL BELOW THE PIPE SHALL BE LOOSELY PLACED TO AVOID STRESS CONCENTRATIONS AT THE BOTTOM OF THE PIPE. BEDDING MATERIAL BELOW THE SPRING LINE, UNLESS CONCRETE, SHALL BE COMPACTED AFTER PLACEMENT OF THE PIPE.

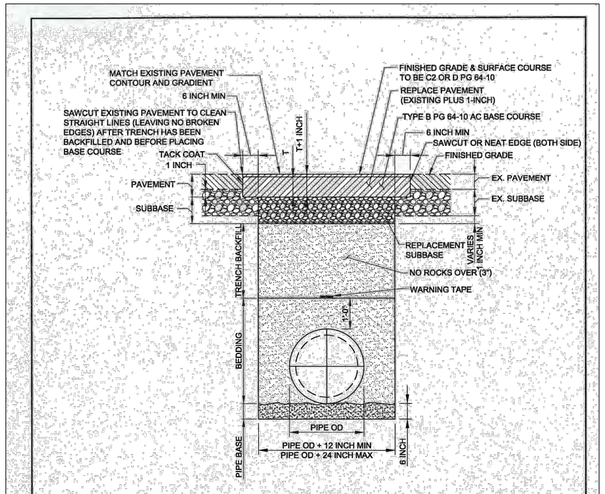
LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS	
PIPE BEDDING IN TRENCHES	STANDARD PLAN 3080-3 SHEET 3 OF 3

REVISIONS				
No.	DATE	SHEET	APPROVAL	DESCRIPTION
				AS-BUILT:

REF. DWG. X-XXXX DWG. X-XXXX
DWG. X-XXXX

DESIGNED BY: AMT
DRAWN BY: AMT
DESIGN CHECK BY:
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
ARIC M. TORRESON
NO. 66068
EXP. 6-30-26
CIVIL
STATE OF CALIFORNIA



TRENCH SECTION

	PAVEMENT	SUBBASE		TRENCH BACKFILL		BEDDING /PIPE * BASE WATER MAIN	BEDDING /PIPE BASE SEWER MAIN
MATERIAL	ASPHALTIC OR CEMENT CONCRETE	CAB OR CMB	1-SACK CEMENT SLURRY	NATIVE / IMPORT ** OR CMB BACKFILL	1-SACK CEMENT SLURRY	IMPORT SAND SE > 30	¾"- INCH CRUSHED ROCK
REQUIREMENTS	EXISTING THICKNESS PLUS ONE INCH	SAME THICKNESS AS EXISTING - 95% COMPACTION	WHEN REQUIRED	90 % COMPACTION	WHEN REQUIRED	90 % COMPACTION	90 % COMPACTION
THICKNESS LIMITS	4-INCH MIN, 8-INCH MAX	6-INCH MIN, 6-INCH IF NONE EXIST 9-INCH MAX					

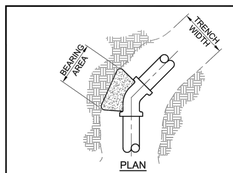
*USE WATER MAIN BEDDING AND PIPE BASE FOR ABS OR PVC SEWER PIPE
** IMPORT BACKFILL SHALL BE SAND EQUIVALENT (SE)>30

TRENCH RESTORATION - WATER AND SEWER	WDS - 406
LONG BEACH WATER DEPARTMENT	RECOMMEND MANAGER OF ENGINEERING — APPROVED CHIEF ENGINEER
	DATE: 3/14/17 — SCALE: N.T.S. — SHEET 1 OF 2

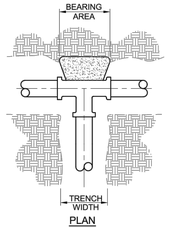
NOTES:

1. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE REQUIREMENTS PROVIDED IN THE LONG BEACH WATER DEPARTMENTS STANDARDS AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, CURRENT EDITION.
2. PERMANENT PAVEMENT RESTORATION SHALL COMMENCE WITHIN 14 WORKING DAYS FROM COMPLETION OF CONSTRUCTION OR AFTER A MAXIMUM OF 500 LINEAR FEET OF TRENCH CONSTRUCTION HAS BEEN COMPLETED, WHICHEVER COMES FIRST.
3. ALL CONCRETE OR CONCRETE OVERLAID STREETS AND ALLEYS SHALL BE SAW CUT TO FULL DEPTH OF PAVEMENT. SAWCUTTING OF ASPHALT PAVEMENT SHALL BE OPTIONAL. OTHER METHODS OF ASPHALT PAVEMENT CUTTING REQUIRES APPROVAL BY THE WATER DEPARTMENT PRIOR TO START OF CONSTRICTION.
4. DURING CONSTRUCTION WHEN TEMPORARY ASPHALT IS USED, IT SHALL BE PLACED 4 INCH MIN THICK AND COMPACTED BY MEANS OF A SELF-PROPELLED STEEL WHEEL ROLLER.
5. WHEN ANY TRENCH PAVEMENT RESTORATION OCCURS WITHIN 3 FEET OF A CONSTRUCTION JOINT, EXPANSION JOINT, COLD JOINT, OR EDGE, THE PAVEMENT BETWEEN THE TRENCH AND THE JOINT, OR EDGE SHALL BE REMOVED AND REPLACED IN KIND WITH THE TRENCH PAVING.
6. COMPACTION TESTS SHALL BE PERFORMED DURING BACKFILL OPERATION AT 100 FOOT INTERVALS AT VARYING DEPTHS AS DETERMINED IN THE FIELD BY WATER DEPARTMENT AUTHORITY.
7. NATIVE SOIL DEEMED UNSUITABLE FOR BACKFILL BY THE WATER DEPARTMENT SHALL BE REPLACED WITH IMPORTED BACKFILL WITH A SAND EQUIVALENT GREATER THAN 30 OR CMB.
8. BACKFILL SHALL BE MECHANICALLY COMPACTED. NO JETTING IS ALLOWED.
9. TRENCH PATCH SHALL NOT BE CROWNED AT CENTER.
10. OUTER DIMENSION DOES NOT APPLY TO SINGLE EXCAVATIONS SMALLER THAN 5'x5'.
11. REPLACE OBLITERATED STRIPING WITHIN 7 DAYS OF PERMANENT PAVING.
12. FINISHED SURFACE PAVING SHALL BE PLACED NO SOONER THAN 5 DAYS NOR LATER THAN 10 DAYS AFTER BASE PAVING.
13. TEMPORARY TRAFFIC PLATING SHALL BE PER WDS-128.
14. BASE PAVING MAY BE ALLOWED TO REMAIN IN PLACE LONGER THEN 10 DAYS WITH APPROVAL OF THE WATER DEPARTMENT CHIEF ENGINEER.
15. TRENCH SUBGRADE SHALL BE INSPECTED BY THE ENGINEER FOR SUITABILITY. MATERIAL DEEMED UNSTABLE SHALL BE EXCAVATED AND REPLACED WITH COARSE CMB TO A DEPTH AS APPROVED BY THE ENGINEER.

TRENCH RESTORATION - WATER AND SEWER	WDS - 406
LONG BEACH WATER DEPARTMENT	RECOMMEND MANAGER OF ENGINEERING — APPROVED CHIEF ENGINEER
	DATE: 3/14/17 — SCALE: N.T.S. — SHEET 2 OF 2



PLAN
HORIZONTAL BEND



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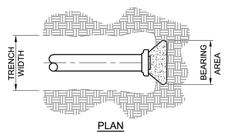

PLAN
DEAD END

THRUST BLOCK-MINIMUM BEARING AREA IN SQUARE FEET AT 188 PSI

FITTINGS (IN)	ALLOWABLE SOIL BEARING VALUE (PSF)				
	1000	1500	2000	2500	3000
4 x 11-1/4° BEND	1.0	1.0	1.0	1.0	1.0
4 x 22 1/2° BEND	1.5	1.0	1.0	1.0	1.0
4 x 45° BEND	2.5	1.5	1.0	1.0	1.0
4 x 90°	4.0	3.0	2.0	1.5	1.5
4 TEE OUTLET	3.0	2.0	1.5	1.5	1.0
4 DEAD END	3.0	2.0	1.5	1.5	1.0
6 x 11-1/4° BEND	1.5	1.0	1.0	1.0	1.0
6 x 22 1/2° BEND	2.5	2.0	1.5	1.0	1.0
6 x 45° BEND	5.0	3.5	2.5	2.0	1.5
6 x 90° BEND	9.0	6.0	4.5	3.5	3.0
6 FIRE HYDRANT BASE ELL	9.0	6.0	4.5	3.5	3.0
6 TEE OUTLET	6.0	4.0	3.0	2.5	2.0
6 TAPPING SLEEVE OUTLET	6.0	4.0	3.0	2.5	2.0
6 DEAD END	6.0	4.0	3.0	2.5	2.0
8 x 11-1/4° BEND	2.5	1.5	1.5	1.0	1.0
8 x 22-1/2° BEND	4.5	3.0	2.5	2.0	1.5
8 x 45° BEND	8.5	5.5	4.5	3.5	3.0
8 x 90° BEND	15.5	10.5	8.0	6.5	5.5
8 TEE OUTLET	11.0	7.5	5.5	4.5	4.0
8 TAPPING SLEEVE OUTLET	11.0	7.5	5.5	4.5	4.0
8 DEAD END	11.0	7.5	5.5	4.5	4.0
10 x 11-1/4° BEND	3.5	2.5	2.0	1.5	1.5
10 x 22-1/4° BEND	6.5	4.5	3.5	3.0	2.5
10 x 45° BEND	13.0	8.5	6.5	5.5	4.5
10 x 90° BEND	23.5	16.0	12.0	9.5	8.0
10 TEE OUTLET	16.5	11.0	8.5	7.0	5.5
10 TAPPING SLEEVE OUTLET	16.5	11.0	8.5	7.0	5.5
10 DEAD END	16.5	11.0	8.5	7.0	5.5
12 x 11-1/4° BEND	5.0	3.5	2.5	2.0	1.5
12 x 22-1/4° BEND	9.5	6.5	5.0	4.0	3.5
12 x 45° BEND	18.5	12.0	9.0	7.5	6.0
12 x 90° BEND	33.5	22.5	17.0	13.5	11.5
12 TEE OUTLET	24.0	16.0	12.0	9.5	8.0
12 TAPPING SLEEVE OUTLET	24.0	16.0	12.0	9.5	8.0
12 DEAD END	24.0	16.0	12.0	9.5	8.0

NOTES:
1. THRUST BLOCK BEARING FACES SHALL BE POURED AGAINST UNDISTURBED SOIL OR APPROVED COMPACTED BACKFILL.
2. THRUST BLOCKS SHALL BE CLASS A2 CONCRETE (600-C-2500).

ANCHOR AND THRUST BLOCKS	WDS - 107
Long Beach Water — Exceptional Water-Exceptional Service	RECOMMENDED DIRECTOR OF ENGINEERING — APPROVED DEPUTY GENERAL MANAGER / CHIEF ENGINEER
	DATE: 02-2020 — SCALE: N.T.S. — SHEET 1 OF 4

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT DETAILS 1

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Phase# XXXX / Rebid: N/A
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www.tetratech.com
17885 VON KARMAN AVE #500,
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PHONE: (949) 809-5000

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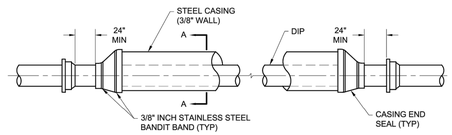

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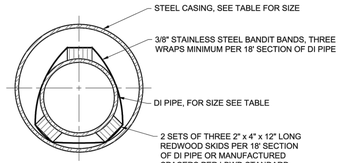


SECTION A-A

DI PIPE SIZE (INCHES)	OUTSIDE DIAMETER OF CASING (INCHES)
4	10-3/4
6	12-3/4
8	16
12	20

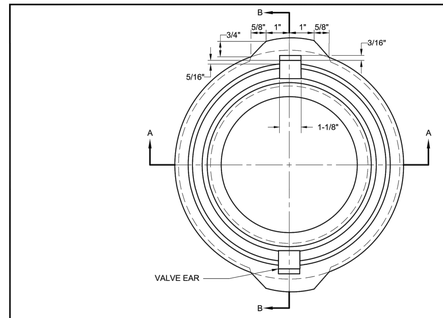
NOTES:

1. FOR CASING LONGER THAN 100' AND PIPE SIZES 8" AND LARGER, LUBRICATE BOTTOM OF CASING WITH LOW GRADE GREASE.
2. ENCASE DI PIPE WITH TWO LAYERS OF 8-MIL POLYETHYLENE WRAP PRIOR TO ATTACHING SKIDS.
3. THIS DETAIL IS APPLICABLE ONLY FOR OPEN TRENCH CONSTRUCTION OF CASING.
4. COAT CASING PER SECTION 09 90 00 OF LBWD STANDARD SPECIFICATIONS.

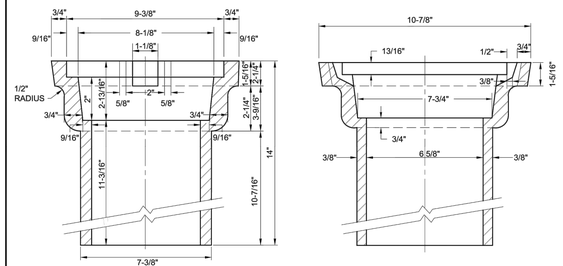
WATER MAIN ENCASEMENT - DUCTILE IRON CARRIER	WDS - 106

Long Beach Water — Exceptional Water • Exceptional Service

RECOMMENDED	APPROVED
DIRECTOR OF ENGINEERING	DEPUTY GENERAL MANAGER / CHIEF ENGINEER
DATE: 02-2020	SCALE: N.T.S.	SHEET 1 OF 2



PLAN VIEW



SECTION A-A SECTION B-B

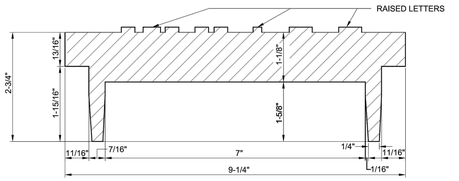
NOTES:

1. LONG BEACH STANDARD HEAVY 8" CAST IRON GATE BOX LID TO BE USED WITH THE GATE BOX (SEE WDS-116).
2. VALVE BOX CONSTRUCTION REQUIRES THE ORIENTATION OF THE VALVE LID EARS TO RUN IN-LINE WITH THE DIRECTION OF THE WATER MAIN OR LATERAL.

ADJUSTABLE GATE BOX - 8-INCH	WDS - 115

Long Beach Water — Exceptional Water • Exceptional Service

RECOMMENDED	APPROVED
DIRECTOR OF ENGINEERING	DEPUTY GENERAL MANAGER / CHIEF ENGINEER
DATE: 02-2020	SCALE: N.T.S.	SHEET 1 OF 1



SECTION A-A

TOP VIEW

NOTES:

1. TO FIT LONG BEACH STANDARD HEAVY 8" CAST IRON GATE BOX. SEE WDS-115

GATE BOX LID - 8-INCH	WDS - 116

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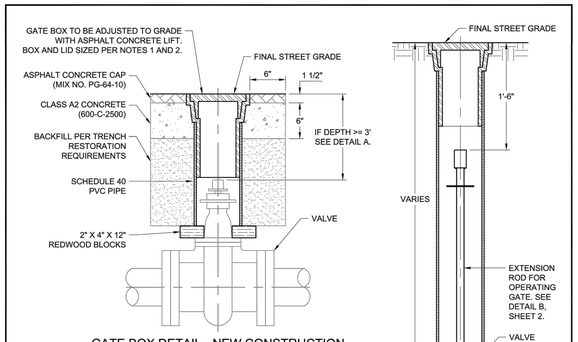
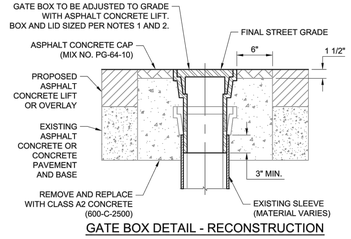
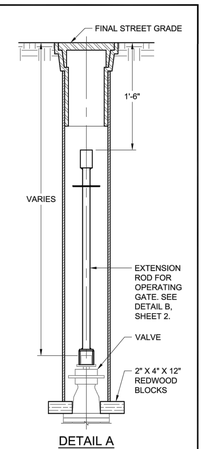
RECOMMENDED	APPROVED
DIRECTOR OF ENGINEERING	DEPUTY GENERAL MANAGER / CHIEF ENGINEER
DATE: 02-2020	SCALE: N.T.S.	SHEET 1 OF 1



GATE BOX DETAIL - NEW CONSTRUCTION



GATE BOX DETAIL - RECONSTRUCTION



DETAIL A

NOTES:

1. FOR BOXING VALVES SMALLER THAN 16", USE 8" CAST IRON GATE BOX AND LID (SEE WDS-115 AND WDS-116), WITH 8" SCHEDULE 40 PVC PIPE FOR RISER.
2. FOR BOXING VALVES 16" AND LARGER, USE 12" CAST IRON GATE BOX AND LID (SEE WDS-117 AND WDS-118), WITH 12" SCHEDULE 40 PVC PIPE FOR RISER.
3. VALVE BOX CONSTRUCTION REQUIRES THE ORIENTATION OF THE VALVE LID EARS TO RUN IN-LINE WITH DIRECTION OF THE WATER MAIN OR LATERAL.

GATE BOX DETAILS	WDS - 119

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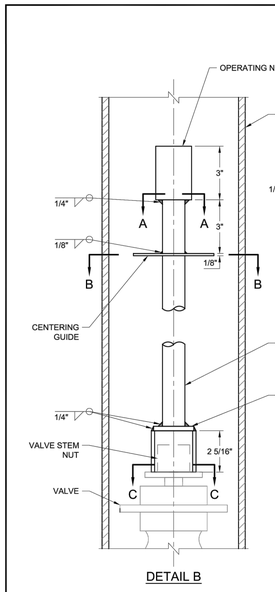
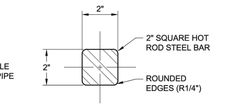
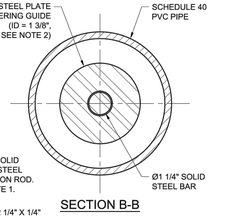


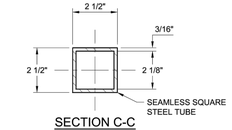
DETAIL B



SECTION A-A



SECTION B-B



SECTION C-C

NOTES:

1. COAT ENTIRE EXTENSION ROD ASSEMBLY WITH NO-OX-ID A SPECIAL COMPOUND.
2. FOR EXTENSION RODS IN 8" PIPE RISER, CENTERING RING OD = 4 1/2". FOR EXTENSION RODS IN 12" PIPE RISER, CENTERING RING OD = 6 3/4".

GATE BOX DETAILS	WDS - 119

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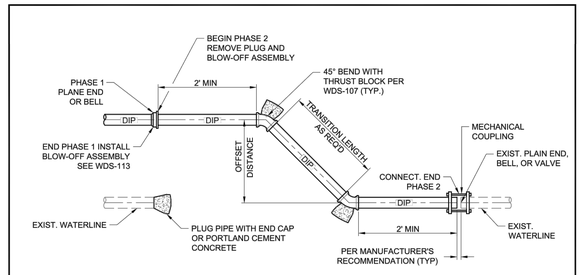

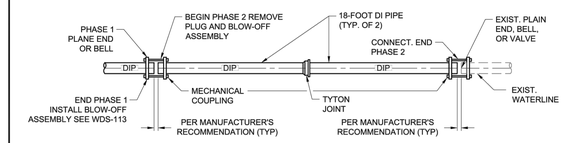

OFFSET LESS THAN 1-FEET

NOTES:

1. SEE CONSTRUCTION PLANS FOR LIMITS AND DETAILS OF PHASE 1 CONSTRUCTION.
2. ENCASE DUCTILE IRON PIPE WITH TWO LAYERS OF 8-MIL POLYETHYLENE WRAP USING ADHESIVE TAPE.
3. COAT ALL FITTINGS, VALVES AND BOLTED COUPLINGS WITH NO-OX-ID WAX AND WRAP. THEN ENCASE WITH TWO LAYERS OF POLYETHYLENE WRAP.
4. CONNECTION SHALL BE WITH BOLTED COUPLING, BELL JOINT, OR TRANSITION COUPLING.

2-PHASE MAIN CONNECTIONS	WDS - 101

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REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION
				REF. DWG. X-XXXX DWG. X-XXXX
				DWG. X-XXXX
				AS-BUILT:

DESIGNED BY: AMT
DRAWN BY: AMT
DESIGN CHECK BY:
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
ANIC M. TORRESON
NO. 66068
EXP. 6-30-26
CIVIL
STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT DETAILS 2

DRAWING REF. C24
PAGE
FIELD BOOK X.X.X.

MUNIS Project # XXXX-XXXX-XXXX
Phase# XXXX / Rebid: N/A
SHEET 26 OF 70
NOTE:

TETRA TECH
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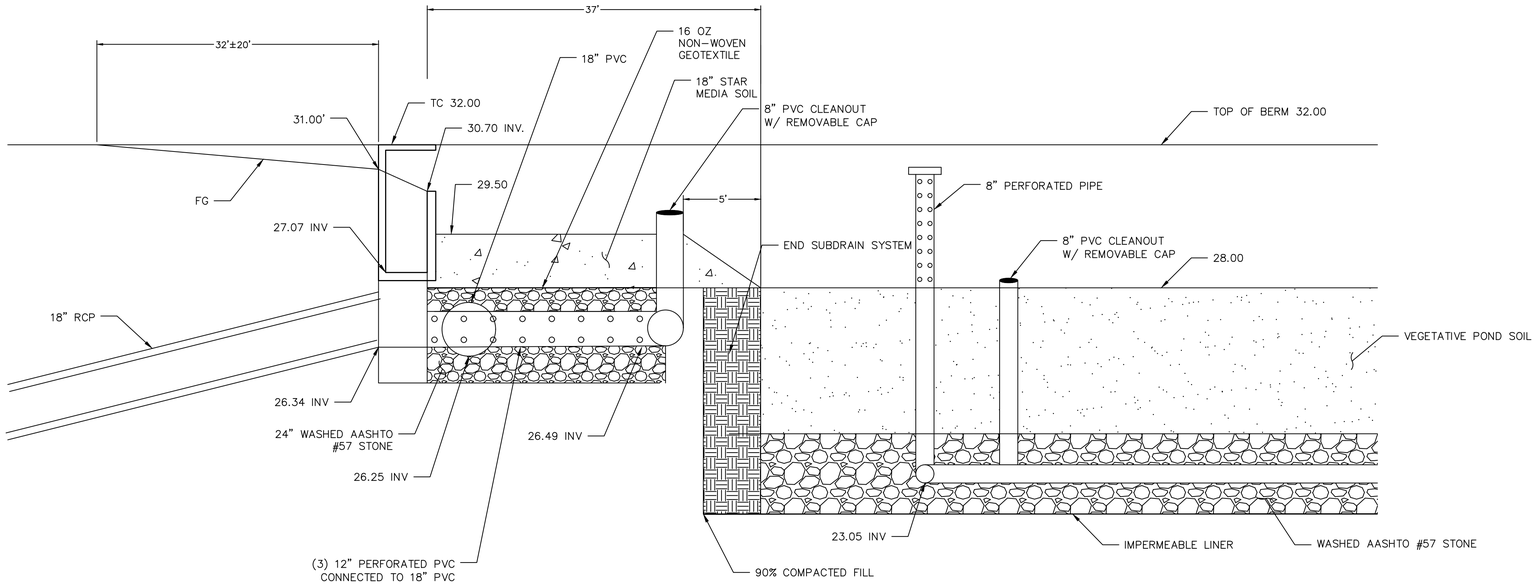
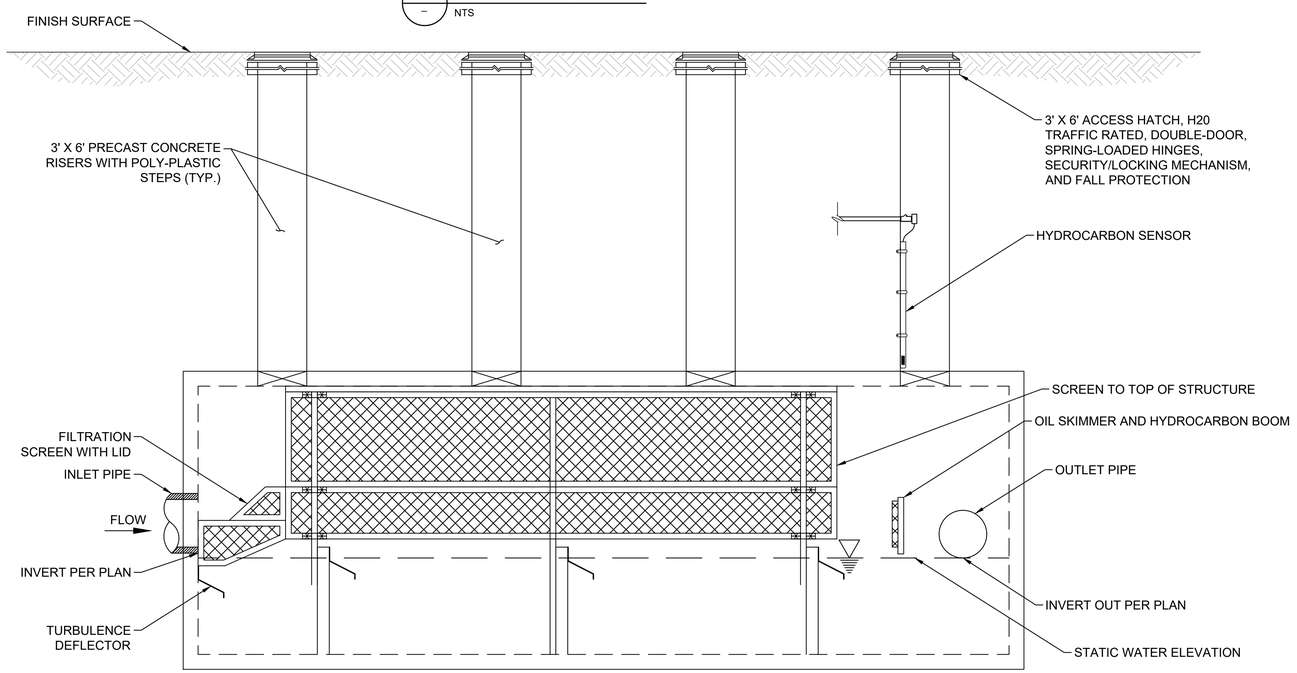


1 – VEGETATIVE STORAGE POND DETAL
NTS



2 – PRETREATMENT DEVICE
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SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT DETAILS 3

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Phase# XXXX / Rebid: N/A
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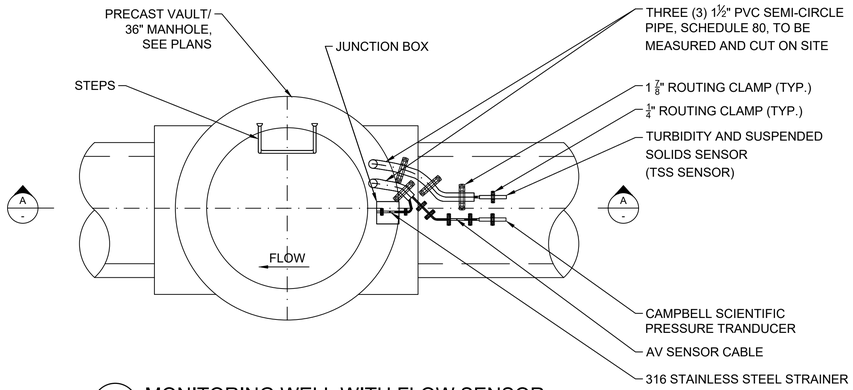
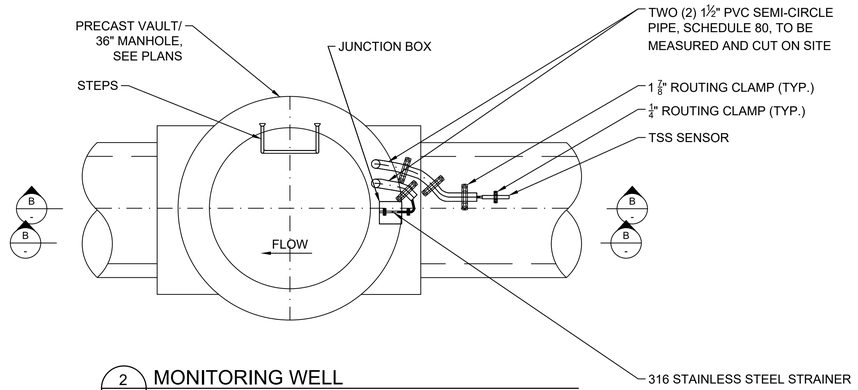
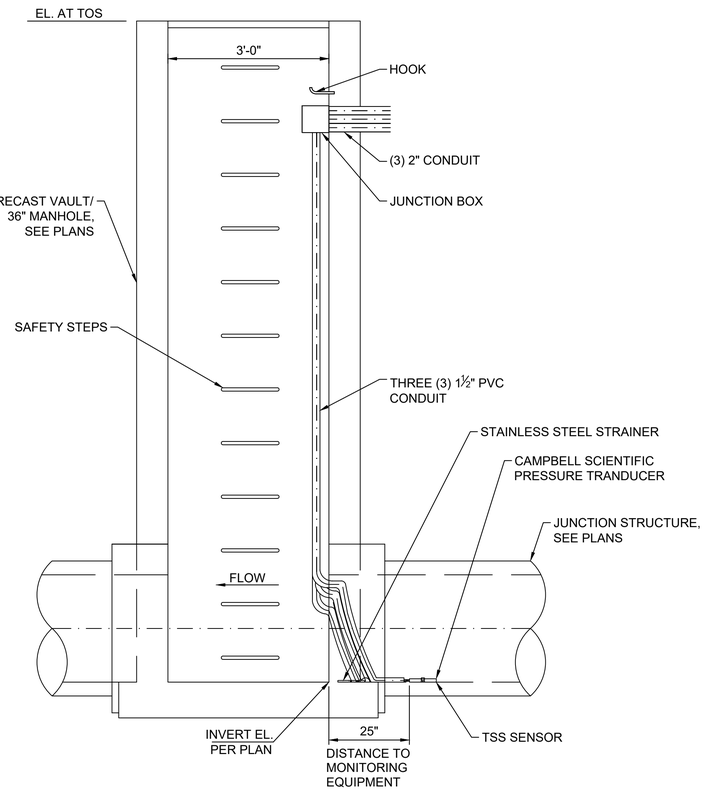


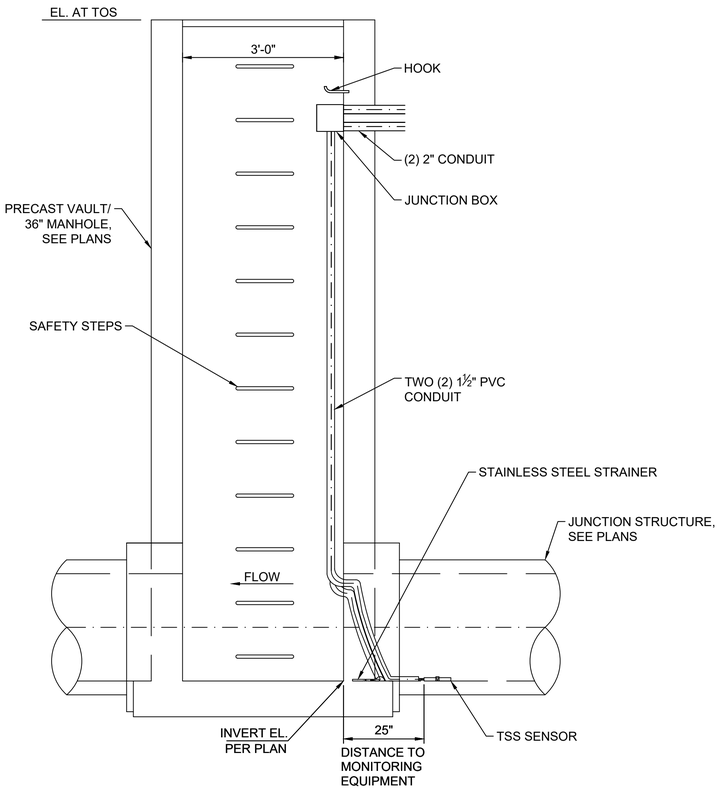
1 — MONITORING WELL WITH FLOW SENSOR
3/4" = 1'-0"



2 — MONITORING WELL
3/4" = 1'-0"



A — SECTION A-A
3/4" = 1'-0"



B — SECTION B-B
3/4" = 1'-0"

No.	DATE	SHEET	APPROVAL	DESCRIPTION
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				AS-BUILT:

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DESIGN CHECK BY:
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
ERIC M. TORRESON
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SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT DETAILS 4

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FIELD BOOK X.X.X.

MUNIS Project # XXXX-XXXX-XXXX
Phase# XXXX / Rebid: N/A
SHEET 28 OF 70
NOTE:

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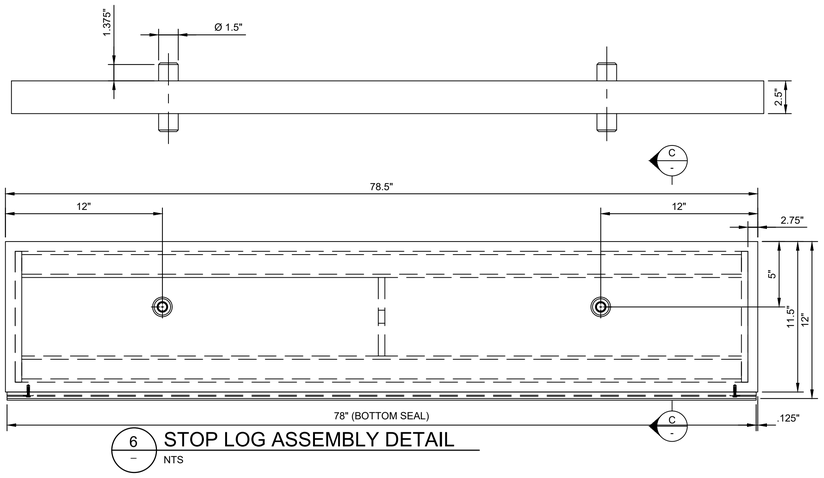
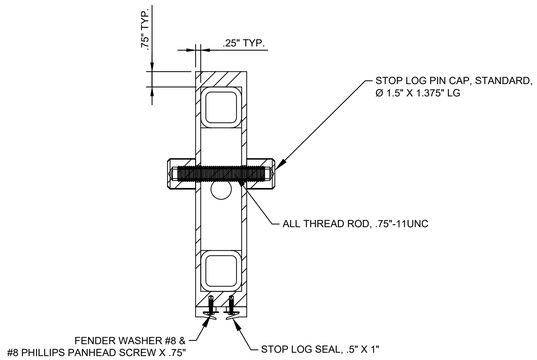


6 STOP LOG ASSEMBLY DETAIL
NTS



C SECTION C-C
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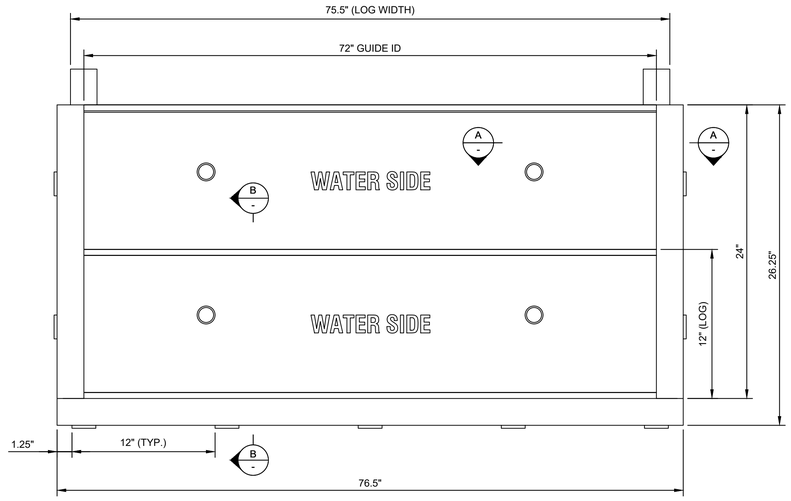
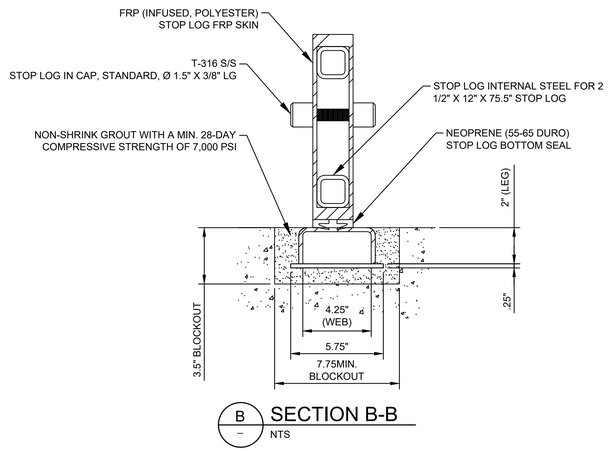


5 STOP LOG & EMBEDDED GUIDE ASSEMBLY DETAIL
NTS



B SECTION B-B
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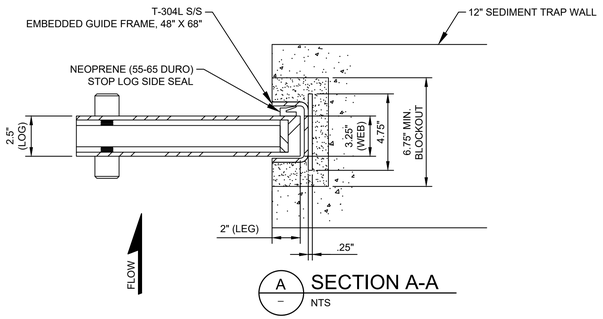

A SECTION A-A
NTS

REVISIONS				DESCRIPTION
No.	DATE	SHEET	APPROVAL	
				REF. DWG. X-XXXX DWG. X-XXXX
				REF. DWG. X-XXXX DWG. X-XXXX
				AS-BUILT:

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DESIGN CHECK BY:
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
ARIC M. TORRESON
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EXP. 6-30-26
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SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT STOP LOG DETAILS

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Phase# XXXX / Rebid: N/A
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NOTE:

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GENERAL STRUCTURAL NOTES
THESE NOTES SHALL APPLY UNLESS SHOWN/INDICATED OTHERWISE ELSEWHERE IN THE STRUCTURAL DRAWINGS.

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE 2020 COUNTY OF LOS ANGELES BUILDING CODE BASED UPON THE 2019 CALIFORNIA BUILDING CODE (C.B.C.) AND THE 2018 INTERNATIONAL BUILDING CODE (I.B.C.)

2. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS BEFORE STARTING WORK. SHOULD CONDITIONS EXIST WHICH ARE CONTRARY TO THOSE SHOWN ON PLANS, THE ENGINEER SHALL BE NOTIFIED IN WRITING BEFORE PROCEEDING WITH WORK.

3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL WALLS, ETC. ARE ADEQUATELY BRACED AND SHORED DURING CONSTRUCTION. ALL BRACING/SHORING SHALL BE DESIGNED BY A REGISTERED ENGINEER HIRED BY THE CONTRACTOR BRACING OF CONCRETE WALLS SHALL REMAIN IN PLACE UNTIL THE CONCRETE REACHES ITS 28 DAYS COMPRESSIVE STRENGTH. THE CONTRACTOR SHALL NOT PLACE SOIL BACKFILL AGAINST WALLS UNLESS THE WALLS ARE ADEQUATELY SUPPORTED BY THE SHORING AND/OR BRACING, OR UNLESS THE CONCRETE HAS REACHED THE MINIMUM SPECIFIED 28 DAY COMPRESSIVE STRENGTH (f'c) AND IS AT LEAST 10 DAYS OLD.

4. UNLESS DETAILED, SPECIFIED, OR INDICATED OTHERWISE, CONSTRUCTION SHALL BE AS INDICATED IN THE APPLICABLE TYPICAL DETAILS AND THESE GENERAL NOTES. TYPICAL DETAILS ARE MEANT TO APPLY EVEN THOUGH NOT REFERENCED AT SPECIFIC LOCATIONS ON PLANS WHERE THE OCCUR.

5. THE PLANS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE, WORKERS AND PEDESTRIANS DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, TEMPORARY STRUCTURES, AND PARTIALLY COMPLETED WORK, ETC. OBSERVATION VISITS TO THE SITE BY THE ENGINEER SHALL NOT BE CONSIDERED AS INSPECTION OF SUCH ITEMS.

6. DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALES SHOWN ON PLANS.

7. ALL ITEMS REMOVED DURING CONSTRUCTION WORK (I.E., DRYWALL, PLYWOOD, CEILING PANELS, ETC.) SHALL BE REPLACED TO MATCH EXISTING.

8. ALL WORK SHALL CONFORM TO THE PLANS AND SPECIFICATIONS IN ALL RESPECTS AND SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER.

9. SOIL PROPERTIES, ALLOWABLE DESIGN VALUES, GRADING AND COMPACTION REQUIREMENTS AS PER SOILS REPORT BY TETRA TECH DATED NOVEMBER 02, 2020 AND ADDENDUM NO. 1 . THIS REPORT SHALL BE CONSIDERED A PART OF THESE PLANS AND SHALL BE KEPT AT THE JOB SITE AT ALL TIMES. THE STRUCTURAL DESIGN WILL BASED UPON THE GEOTECHNICAL REPORT (PROJECT NO. TET 20-179E) WITH THE ADDENDUM NO. 1 DATED JANUARY 18, 2021.

10. ALL ITEMS SHOWN ON THESE PLANS ARE NEW UNLESS NOTED (E), EXIST. OR EXISTING.

REINFORCING NOTES

1. REINFORCEMENT FOR CONCRETE AND MASONRY SHALL BE DEFORMED BARS CONFORMING TO A.S.T.M. SPECIFICATION A615 (A706/A708M FOR WELDED REINFORCING). GRADE 60 STEEL SHALL BE USED

2. ALL REINFORCEMENT, ANCHOR BOLTS, AND OTHER ANCHORAGES PLACED IN CONCRETE SHALL BE ACCURATELY PLACED AND POSITIVELY SECURED AND SUPPORTED BY CONCRETE BLOCKS, METAL CHAIRS, SPACERS, OR METAL HANGERS, AND SHALL BE IN POSITION BEFORE CONCRETE PLACING OR GROUTING IS BEGUN. DETAILING AND PLACING OF BARS SHALL CONFORM TO THE A.C.I. MANUAL OF STANDARD PRACTICES.

3. BARS SPECIFIED AS "CONTINUOUS" SHALL EXTEND THE FULL LENGTH OF THE MEMBER CONTAINING THEM AND MAY BE SPLICED (UNLESS NOTED OR SHOWN WITHOUT SPLICES ON THE PLANS). PROVIDE LAPS PER DETAIL 2 ON SHEET S-09. STAGGER ALL SPLICES.

4. DOWELS SHALL BE PROVIDED AT ALL POUR JOINTS AND SHALL BE THE SAME SIZE AND SPACING AS REINFORCING DIRECTLY BEYOND POUR JOINTS.

5. THE SPECIFIED DIMENSIONS OF THE VERTICAL LEGS OF "L" DOWELS, WHOSE HORIZONTAL LEGS ARE CAST INTO A FOOTING OR SLAB CAST ON TOP OF EARTH, ARE BASED UPON THE SLAB THICKNESS AS SHOWN ON THE DRAWINGS. IF A SLAB IS POURED THICKER THAN SHOWN ON THE DRAWINGS, SUCH AS FOR THE SUBGRADE OCCURRING AT A LOWER ELEVATION THAN SHOWN, THE VERTICAL LEGS MUST BE FABRICATED TO A LONGER LENGTH OR THE HORIZONTAL TAILS MUST BE SUPPORTED ABOVE SUBGRADE HIGH ENOUGH TO PROVIDE THE SAME AMOUNT OF LAP LENGTH BETWEEN THE DOWEL AND THE WALL VERTICAL REINFORCING.

CONCRETE NOTES

1. ALL CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 5000 PSI AT 28 DAYS. AGGREGATES SHALL CONFORM TO A.S.T.M. C33.

2. CEMENT FOR CONCRETE SHALL BE TYPE V PORTLAND CEMENT CONFORMING TO A.S.T.M. C150.

3. CONCRETE COVER FOR REINFORCING BARS SHALL BE:
   CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH = 3"
   EXPOSED TO EARTH OR WEATHER: NO. 6 THROUGH NO. 18 BARS = 3 1/2"
   NO. 5 BARS, W31 OR D31 WIRE, AND SMALLER = 1 1/2"
   NOT EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND:
   SLABS, WALLS, JOISTS: NO. 14 AND NO. 18 BARS = 1 1/2"
   NO. 11 BARS AND SMALLER = 3/4"
   BEAMS, COLUMNS: PRIMARY REINFORCEMENT, TIES, STIRRUPS, SPIRALS = 1 1/2"

4. NO PIPES OR DUCTS SHALL BE PLACED IN STRUCTURAL CONCRETE UNLESS SPECIFICALLY DETAILED. SEE MECHANICAL AND/OR ELECTRICAL DRAWINGS FOR LOCATION OF SLEEVES THROUGH WALLS AND FLOORS.

5. THE LOCATION OF ALL CONSTRUCTION JOINTS NOT SPECIFICALLY NOTED OR SHOWN SHALL BE APPROVED BY THE ENGINEER.

6. "ROUGHENED SURFACES", WHERE SPECIFIED ON THE PLANS, SHALL BE MECHANICALLY ROUGHENED SUCH THAT A 1/4" AMPLITUDE (±) IS ACHIEVED BETWEEN HIGH AND LOW SPOTS OF THE ROUGHENED SURFACE. THE SURFACE SHALL BE CLEAN AND FREE OF LAITANCE

7. BOTH FACES OF CONCRETE WALLS, EDGES OF CONCRETE FOUNDATIONS, AND OTHER FORMED CONCRETE SURFACES WHERE THE CONCRETE COVER IS SPECIFIED AS LESS THAN 3 INCHES, SHALL BE PLACED AGAINST FORMWORK WHICH COMPLIES WITH THE PROJECT SPECIFICATIONS. CONCRETE FOR THESE ELEMENTS SHALL NOT BE CAST AGAINST EARTH.

STEEL NOTES

1. ALL WIDE FLANGE MEMBERS SHALL BE IN ACCORDANCE WITH A.S.T.M. A-992. ALL OTHER STRUCTURAL AND MISCELLANEOUS STEEL SHALL BE ASTM A36 UNLESS NOTED OTHERWISE. STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS. SPECIAL INSPECTION SHALL BE PROVIDED FOR ALL STRUCTURAL STEEL IN ACCORDANCE WITH CBC SECTION 1705.2.1, UNLESS FABRICATION IS PERFORMED ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION, IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND SECTION 1704.2.5.2 OF THE 2019 CBC. AT THE COMPLETION OF FABRICATION, THE APPROVED FABRICATOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE ENGINEER STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

2. STEEL TUBES SHALL CONFORM TO A.S.T.M. A500, GRADE B OR BETTER, UNLESS NOTED OTHERWISE.

3. STEEL PIPES SHALL CONFORM TO A.S.T.M. A53, GRADE B.

4. BOLTS SHALL CONFORM TO A.S.T.M. A307 OR BETTER, UNLESS NOTED OTHERWISE.

5. HOLES FOR BOLTS IN STEEL SHALL BE OF SAME DIAMETER AS BOLT +1/16" MAXIMUM.

6. ALL WELDING SHALL BE SHIELDED ARC TYPE AND SHALL BE PERFORMED BY A CERTIFIED WELDER IN A FABRICATION SHOP REGISTERED AND APPROVED IN ACCORDANCE WITH NOTE 1 ABOVE.CONTINUOUS INSPECTION IS REQUIRED OF ALL FIELD WELDING IN ACCORDANCE WITH AWS D1.1.

7. NO STRUCTURAL STEEL MEMBER SHALL BE CUT FOR PIPES, DUCTS, ETC. UNLESS SPECIFICALLY DETAILED AND APPROVED BY ENGINEER.

8. STAINLESS STEEL SHALL CONFORM TO A.S.T.M. A276/A.I.S.I. 316.
   STAINLESS STEEL BOLTS SHALL CONFORM TO A.S.T.M. F593.
   STAINLESS STEEL NUTS SHALL CONFORM TO A.S.T.M. F594.

9. WELDING OF STAINLESS STEEL SHALL CONFORM TO STRUCTURAL WELDING CODE - STAINLESS STEEL, ANSI/AWS D1.6-07.

10. ALL NON-STAINLESS STEEL EXPOSED TO WEATHER SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123 OR A153, AS APPLICABLE. REPAIR OF DAMAGED GALVANIZED COATING SHALL BE IN ACCORDANCE WITH ASTM A780. ALL OTHER NON-STAINLESS STEEL SHALL BE COATED WITH TWO COATS OF SHOP APPLIED PRIMER.

11. WELDING EQUIPMENT SHALL BE CHECKED PRIOR TO WELDING AS REQUIRED BY AISC 360-16 TABLE N5.4-1.

13. PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED SHALL BE PERFORMED AS REQUIRED BY AISC 360-16 TABLE N5.6-1

ADHESIVE ANCHORS

1. ADHESIVE ANCHORS SHALL BE "HIT RE-500 V3" ADHESIVE ANCHORS, MANUFACTURED BY HILTI, INC. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH I.C.C. EVALUATION REPORT ELC-3814, OR "SET XP" ADHESIVE ANCHORS MANUFACTURED BY SIMPSON STRONG-TIE, INC. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH I.C.C. EVALUATION REPORT No. 2508.

2. AN ALTERNATIVE ADHESIVE ANCHOR PRODUCT MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL, PROVIDED THAT IT HAS A CURRENT I.C.C. EVALUATION REPORT APPROVAL.

3. SPECIAL INSPECTION PER CHAPTER 1705.3.8 OF THE C.B.C SHALL BE PROVIDED DURING ANCHOR INSTALLATION.

4. ALL ABANDONED HOLES SHALL BE FILLED WITH A DRYPACK GROUT A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI. THE FILLED HOLE(S) SHALL BE PREPARED AND CLEANED AS REQUIRED BY THE GROUT MANUFACTURER.

5. LOCATE EXISTING REINFORCING USING A NON-DESTRUCTIVE METHOD (PACHOMETER OR OTHER), PRIOR TO DRILLING HOLES FOR ANCHORS. MAINTAIN A MINIMUM CLEARANCE OF 1" BETWEEN THE REINFORCEMENT AND THE ANCHOR.

DESIGN CRITERIA

DESIGN CODES AND REFERENCES:
- COUNTY OF LOS ANGELES BUILDING CODE, 2020 EDITION
- CALIFORNIA BUILDING CODE, 2019 EDITION
- ASCE 7-16 MINIUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
- ACI 318-14, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
- LOS ANGELES COUNTY FLOOD CONTROL DISTRICT STRUCTURAL DESIGN MANUAL (LACFCD SDM)
- US ARMY CORPS OF ENGINEERS DESIGN MANUAL (EM 1110-2-2104)

LIVE LOAD:
H-20 LOADING w/ IMPACT FACTOR

SEISMIC DESIGN PARAMETERS:
LOCATION: LAT. 33.822749 LONG. -118.134677
SITE CLASS: D
RISK CATEGORY: II

S_{DS} = 1.057g S_{D1} = 0.663g

CHANNEL WALL:
ANALYSIS PROCEDURE USED - EQUIVALENT LATERAL FORCE PROCEDURE

R = 1.25 (ASCE 7 TABLE 15.4-2: GROUND-SUPPORTED CANTILEVER WALL)
I = 1.00 (ASCE 7 TABLE 1.5-2)

WIND LOAD DESIGN PARAMETERS:
BASIC WIND SPEED = 95 MPH
EXPOSURE CATEGORY = C
Kd = 0.85
Kz = 0.85
KE = 1.00
Qz = 16.67 PSF

SOIL DESIGN PARAMETERS:
ALLOWABLE BEARING PRESSURES = 3,400 PSF (UP TO 4-FT X 4-FT SPREAD FOOTING)
= 2,600 PSF (UP TO 8-FT X 8-FT SPREAD FOOTING)
= 2,100 PSF (CONTINUOUS STRIP FOOTING)

(THIS CAN BE INCREASED BY 1/3 SHORT DURATION SUCH AS SEISMIC AND WIND LOADS)

ACTIVE SOIL LATERAL PRESSURE (DRAINED) = 45 PSF/FT
ACTIVE SOIL LATERAL PRESSURE (UNDRAINED) = 85 PSF/FT
ACTIVE SOIL SEISMIC INCREMENT = 22 PSF/FT
VEHICULAR LIVE SURCHARGE = 0.36*(240 PSF/FT) = 86 PSF/FT MINIMUM

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION

AS-BUILT:

REF. DWG. X-XXXX DWG. X-XXXX
DWG. X-XXXX

DESIGNED BY: AMT
DRAWN BY: AMT
DESIGN CHECK BY:
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
ARIC M. TORRESON
NO. 66068
EXP. 6-30-26
CIVIL
STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT GENERAL STRUCTURAL NOTES

GRAPHIC SCALE

PAGE

FIELD BOOK X.X.X.

DRAWING REF.
S1

MUNIS Project #
XXXX-XXXX-XXXX

Phase# XXXX / Rebid: N/A

SHEET
30 OF 70

NOTE:

TETRA TECH
www.tetratech.com
17885 VON KARMAN AVE #500,
IRVINE, CA 92614
PHONE: (949) 809-5000

SPECIAL INSPECTIONS REQUIRED

SPECIAL INSPECTIONS ARE ONLY REQUIRED FOR THE BUILDING STRUCTURES, UNLESS OTHERWISE NOTED, AND SHALL BE PERFORMED IN ACCORDANCE WITH L.A.C.B.C. AND C.B.C. CHAPTER 17. SPECIAL INSPECTIONS SHALL BE PERFORMED BY AN APPROVED INSPECTION AGENCY U.N.O, EMPLOYED BY THE OWNER.

THE SPECIAL INSPECTOR SHALL BE CERTIFIED BY THE INTERNATIONAL CODE COUNCIL (I.C.C.) TO PERFORM INSPECTION FOR THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION PRIOR TO THE COMPLETION OF THAT PHASE OF THE WORK.

THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND/OR THE ENGINEER. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, TO THE STRUCTURAL ENGINEER AND TO THE BUILDING OFFICIAL.

THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THIS CODE.

IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO PROVIDE AT LEAST 48 HOURS ADVANCE NOTICE TO THE OWNER/OWNER'S REPRESENTATIVE WHEN HIS WORK IS READY FOR ANY REQUIRED SPECIAL INSPECTIONS.

SHOP INSPECTION OF STEEL CONSTRUCTION IS NOT REQUIRED WHEN THE WORK IS DONE ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION. APPROVAL SHALL BE BASED UPON REVIEW OF THE FABRICATOR'S WRITTEN PROCEDURAL AND QUALITY CONTROL MANUALS AND PERIODIC AUDITING OF FABRICATION PRACTICES BY AN APPROVED SPECIAL INSPECTION AGENCY. AT COMPLETION OF FABRICATION, THE APPROVED FABRICATOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE BUILDING OFFICIAL STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.

CONTRACTOR RESPONSIBILITY
EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A MAIN WIND- OR SEISMIC-FORCE-RESISTING SYSTEM, DESIGNATED SEISMIC SYSTEM OR A WIND- OR SEISMIC-RESISTING COMPONENT LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND THE OWNER PRIOR TO THE COMMENCEMENT OF WORK ON THE SYSTEM OR COMPONENT. THE CONTRACTOR'S STATEMENT OF RESPONSIBILITY SHALL CONTAIN ACKNOWLEDGMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTION.

THE ENGINEER SHALL BE SYNONYMOUS WITH 'BUILDING OFFICIAL' IN THE FOREGOING IF THE PROJECT IS NOT UNDER THE JURISDICTION OF A BUILDING DEPARTMENT

SPECIAL INSPECTION SHALL BE PROVIDED FOR THE FOLLOWING TYPES OF WORK PERFORMED IN THE FIELD, OR NOT PERFORMED IN AN APPROVED FABRICATION SHOP AS DEFINED ABOVE, UNLESS NOTED AS "N/A".

SPECIAL INSPECTIONS REQUIRED (■ YES ☐ NO)

	CONT	PERIODIC	N/A
REQUIRED VERIFICATION AND INSPECTION OF SOILS (TO BE PERFORMED BY A LICENSED GEOTECHNICAL ENGINEER):			
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	☐	■	☐
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	☐	■	☐
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	☐	■	☐
4. PERFORM CLASSIFICATION AND TESTING OF NATIVE SOILS TO VERIFY ANY SOIL PROPERTIES ASSUMED AS PART OF DESIGN FOR THIS PROJECT IN THE ABSENCE OF A SOILS REPORT (SEE SOIL PROPERTIES ON THIS DRAWING). THIS TESTING SHALL BE PERFORMED IN ADVANCE OF ANY CONSTRUCTION. THE STRUCTURAL ENGINEER SHALL BE NOTIFIED IF THE ASSUMED VALUES ARE NOT VALID.	☐	■	☐
5. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	■	☐	☐
6. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY	☐	■	☐
CONCRETE CONSTRUCTION:			
1. INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, AND PLACEMENT	☐	■	☐
2. INSPECTION OF REINFORCING STEEL WELDING IN ACCORDANCE WITH LACBC TABLE 1705.3, ITEM 2B.	☐	☐	■
3. INSPECTION OF ANCHORS CAST IN CONCRETE	☐	■	☐
4. INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS	☐	■	☐
A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS	■	☐	☐
B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.A.	☐	■	☐
5. VERIFYING USE OF REQUIRED DESIGN MIX	☐	■	☐
6. AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TEST, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	■	☐	☐
7. INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	■	☐	☐
8. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	☐	■	☐
9. INSPECTION OF PRESTRESSED CONCRETE:			
A. APPLICATION OF PRESTRESSING FORCES	☐	☐	■
B. GROUTING OF BONDED PRESTRESSING TENDONS IN THE SEISMIC-FORCE-RESISTING SYSTEM	☐	☐	■
10. ERECTION OF PRECAST CONCRETE MEMBERS	☐	☐	■
11. VERIFICATION OF IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS	☐	☐	■
12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF CONCRETE MEMBER BEING FORMED	☐	■	☐

	CONT	PERIODIC	N/A
ADHESIVE ANCHORS:			
1. VERIFY ANCHOR TYPE:	☐	■	☐
2. VERIFY ADHESIVE IDENTIFICATION AND EXPIRATION DATE	☐	■	☐
3. VERIFY ANCHOR DIMENSIONS:	☐	■	☐
4. VERIFY CONCRETE TYPE:	☐	■	☐
5. VERIFY CONCRETE COMPRESSIVE STRENGTH.	☐	■	☐
6. VERIFY HOLE DRILLING METHOD.	☐	■	☐
7. VERIFY HOLE DIMENSIONS	☐	■	☐
8. VERIFY HOLE CLEANING PROCEDURES.	☐	■	☐
9. VERIFY ANCHOR SPACING.	☐	■	☐
10. VERIFY EDGE DISTANCES	☐	■	☐
11. VERIFY CONCRETE THICKNESS	☐	■	☐
12. VERIFY ANCHOR EMBEDMENT.	☐	■	☐
13. VERIFY TIGHTENING TORQUE	☐	■	☐
14. VERIFY ADHERENCE TO THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS	☐	■	☐

THE SPECIAL INSPECTOR MUST VERIFY THE INITIAL INSTALLATIONS OF EACH TYPE AND SIZE OF ADHESIVE ANCHOR INSTALLED BY THE CONSTRUCTION PERSONNEL ON SITE. SUBSEQUENT INSTALLATIONS OF THE SAME ANCHOR TYPE AND SIZE BY THE SAME CONSTRUCTION PERSONNEL MAY BE PERMITTED, WITH THE APPROVAL OF THE ENGINEER AND THE SPECIAL INSPECTOR, TO BE PERFORMED IN THE ABSENCE OF THE SPECIAL INSPECTOR. ANY CHANGE IN THE ANCHOR PRODUCT BEING INSTALLED OR THE PERSONNEL PERFORMING THE INSTALLATION REQUIRES AN INITIAL INSPECTION. FOR ONGOING INSTALLATIONS OVER AN EXTENDED PERIOD, THE SPECIAL INSPECTOR MUST MAKE REGULAR INSPECTIONS TO CONFIRM CORRECT HANDLING AND INSTALLATION OF THE PRODUCT. THE SPECIAL INSPECTOR SHALL INFORM THE ENGINEER OF THE FREQUENCY OF THE PERIODIC ANCHOR INSPECTIONS. THE ENGINEER MAY REQUEST ADDITIONAL INSPECTIONS AT ANY TIME.

STRUCTURAL OBSERVATION

THE STRUCTURAL ENGINEER, OR ANOTHER ENGINEER DESIGNATED BY THE STRUCTURAL ENGINEER SHALL BE RETAINED BY THE OWNER TO PERFORM STRUCTURAL OBSERVATION AS REQUIRED BY LACBC CHAPTER 17. STRUCTURAL OBSERVATION SHALL BE PROVIDED DURING THE STAGES OF CONSTRUCTION LISTED BELOW. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE AT LEAST 48 HOURS ADVANCE NOTICE TO THE STRUCTURAL ENGINEER WHEN HIS WORK IS READY FOR STRUCTURAL OBSERVATION FOR EACH OF THESE STAGES.

	STRUCTURAL OBSERVATIONS REQUIRED (■ YES ☐ N0)
1. CONCRETE: REINFORCING STEEL AND EMBEDDED STRUCTURAL ANCHORAGES PRIOR TO PLACEMENT OF CONCRETE FOR THE FOLLOWING:	
A. FOUNDATIONS	■
B. SLABS-ON-GRADE (EXCEPT SITE PAVING AND FLATWORK)	■
C. WALLS	■
D. STRUCTURAL FLOOR SLABS AND BEAMS NOT SUPPORTED ON-GRADE	☐
E. ROOF SLABS AND BEAMS	☐
2. MASONRY: REINFORCING STEEL AND EMBEDDED STRUCTURAL ANCHORAGES PRIOR TO GROUTING OF MASONRY WALLS	☐ N/A
3. STRUCTURAL STEEL: ERECTED COLUMN, BEAM AND GIRDERS PRIOR TO INSTALLATION OF ROOF AND FLOOR JOISTS, TRUSSES AND DECKING	☐ N/A

DEFERRED SUBMITTALS/CERTIFICATIONS

	SUBMITTALS REQUIRED (■ YES ☐ N0)
1. OFF-SITE FABRICATION: FABRICATORS SHALL BE CITY, COUNTY AND/OR C.B.C. APPROVED FABRICATORS FOR ALL OFFSITE FABRICATION OF THE ITEMS LISTED BELOW:	
A. PRECAST CONCRETE	■
2. DEFERRED SUBMITTALS: THE DEFERRED SUBMITTAL ITEMS LISTED BELOW SHALL BE DEIGNED BY A LICENSED PE OR SE AND SUBMITTED BY THE CONTRACTOR ENGINEER OF RECORD WHO SHALL REVIEW AND APPROVE THEM, AND FORWARD THEM TO THE BUILDING OFFICIAL WITH A NOTATION INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND APPROVED AND THAT THEY HAVE BEEN FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THEIR DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL. PROVIDE AMPLE TIME FOR THE BUILDING OFFICIAL TO REVIEW THE DOCUMENTS.	
A. ANCHORAGE FOR EQUIPMENT AND PNEUMATIC GATE.	■
B. PREFAB ELECTRICAL ENCLOSURE	■
C. ANCHORAGE FOR PREFAB ELECTRICAL ENCLOSURE.	■

County of Los Angeles
DEPARTMENT OF PUBLIC WORKS BUILDING & SAFETY DIVISION
Los Angeles Regional Uniform Code Program

STRUCTURAL OBSERVATION PROGRAM
AND DESIGNATION OF THE
STRUCTURAL OBSERVER

PERMIT APPL. NO.: _____

Project Address:	
Description of Work:	
Owner:	Architect:
Engineer of Record:	

STRUCTURAL OBSERVATION (ONLY CHECKED ITEMS ARE REQUIRED)

Firm or Individual to be responsible for the Structural Observation:
Name: Phone: Calif. Registration:

FOUNDATION	WALL	FRAME	DIAPHRAGM
☐ Footing, Stem Walls, Piers	☐ Concrete	☐ Steel Moment Frame	☐ Concrete
☐ Mat Foundation	☐ Masonry	☐ Steel Braced Frame	☐ Steel Deck
☐ Caisson, Piles, Grade Beams	☐ Wood	☐ Concrete Moment Frame	☐ Wood
☐ Retaining Foundation Hillside Special Anchors	☐ Others:	☐ Masonry Wall Frame	☐ Others:
☐ Others:		☐ Others:	

DECLARATION BY OWNER
I, the Owner of the project, declare that the above listed firm or individual is hired **by me** to be the Structural Observer.

Signature Date

DECLARATION BY ARCHITECT OR ENGINEER OF RECORD (required if the Structural Observer is different from the Architect or Engineer of Record)

I, the Architect or Engineer of record for the project, declare that the above listed firm or individual is designated by me to be responsible for the Structural Observation.

Signature License No. Date

Version 1.0 (2008 LACBC) Jan. 10 2008

County of Los Angeles
DEPARTMENT OF PUBLIC WORKS BUILDING & SAFETY DIVISION

STRUCTURAL OBSERVATION GENERAL NOTES

1. Structural observation is required for the structural system in accordance with Section 1709 of the Los Angeles County Building Code. Structural observation is the visual observation at the construction stages and the complete structure for general conformance to the approved plans and specifications. Structural observation does not waive the responsibility for the inspections required of the building inspector or the special inspector.

2. The owner shall employ the registered design professional responsible for the structural design, or another registered design professional designated by the registered design professional responsible for the structural design to perform structural observations.

3. The owner or owner's representative shall coordinate and call for a meeting between the engineer or architect responsible for the structural design, structural observer, contractor, affected subcontractors and special inspectors. The purpose of the meeting shall be to identify the major structural elements and connections that affect the vertical and lateral load systems of the structure and to review scheduling of the required observations. A record of the meeting shall be included in the first observation report submitted to the building inspector.

4. The structural observer shall prepare a report of the Structural Observation Report Form for each significant stage of construction observed. The original of the Structural Observation report shall be sent to the building inspector's office and shall be signed and sealed (wet stamp) by the responsible structural observer. Copies of the report shall also be given to the owner, contractor, and deputy inspector. Any deficiency noted on the observation report will become the responsibility of the structural engineer of record to verify its completion by him (her), or by a registered special inspector at the discretion of the Structural Observer.

5. A final observation report and that of the registered special inspector must be submitted which shows that all observed deficiencies were resolved and structural system generally conforms with the approved plans and specifications.

6. When the owner elects to change the structural observer of record, the owner shall:

   a. Notify the building inspector in writing before the next inspection by submitting the completed Structural Observation Program and Designation of the Structural Observer form.
   b. Call an additional preconstruction meeting
   c. Furnish the replacement structural observer with a copy of all previous observation reports.

   The replacement structural observer shall approve the correction of the original observed deficiencies unless otherwise approved by the Building Official.

7. The engineer or architect of record shall develop all changes relating to the structural systems. The Building Official shall review and approved all changes to the approved plans and specifications.

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IRVINE, CA 92614
PHONE: (949) 809-5000

REVISIONS

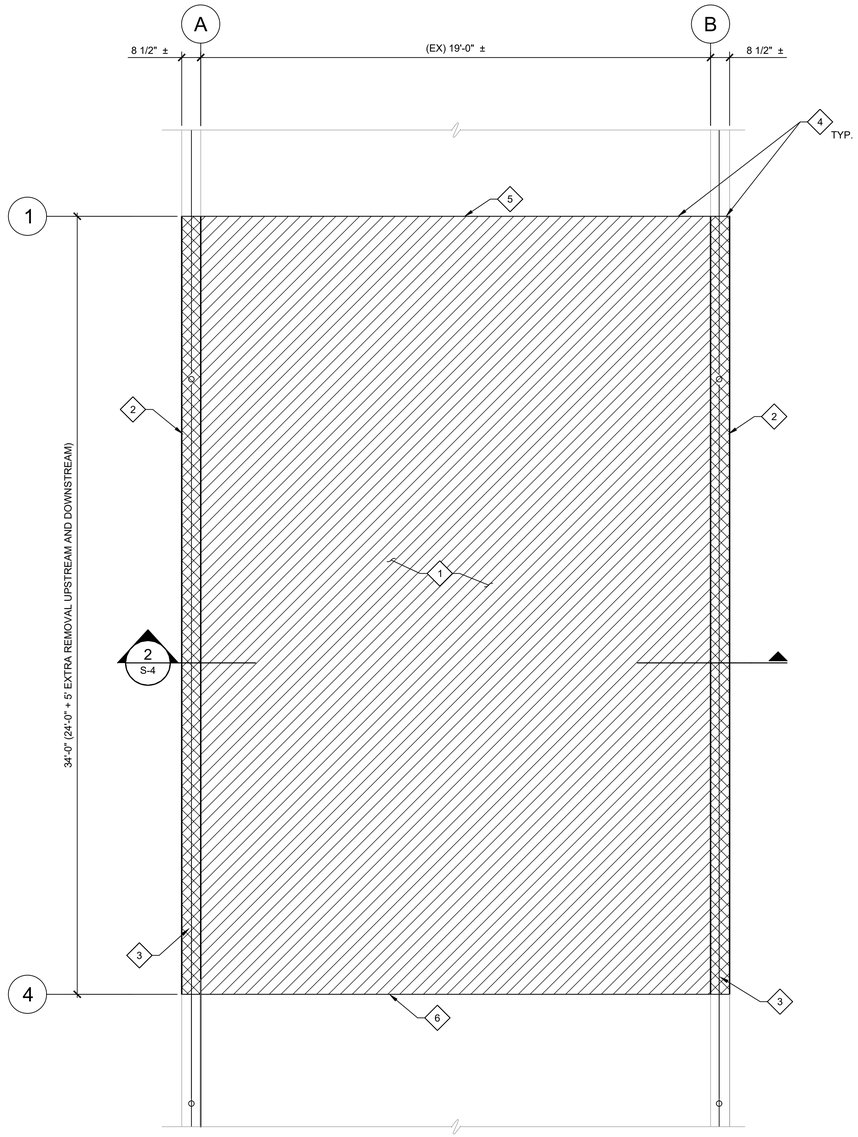
No.	DATE	SHEET	APPROVAL	DESCRIPTION
				REF. DWG. X-XXXX DWG. X-XXXX
				AS-BUILT:

DESIGNED BY: AMT
DRAWN BY: AMT
DESIGN CHECK BY:
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
ERIC M. TORRESON
NO. 66068
EXP. 6-30-26
CIVIL
STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
SPECIAL INSPECTIONS AND STRUCTURAL OBSERVATIONS

GRAPHIC SCALE
PAGE
FIELD BOOK X.X.X.
DRAWING REF. S2
MUNIS Project # XXXX-XXXX-XXXX
Phase# XXXX / Rebid: N/A
SHEET 31 OF 70
NOTE:



1 FOUNDATION DEMO PLAN
SCALE: 1/2" = 1'-0"

KEYNOTES:

1. (EX) 9" - 10 1/2" THICK CONCRETE CHANNEL FLOOR SLAB
2. (EX) 8" - 9 1/2" THICK TAPERED CONCRETE CHANNEL WALL
3. (EX) CHAIN LINK FENCE, DEMO UP TO NEAREST POST OUTSIDE OF DEMO REGION
4. (EX) CONSTRUCTION JOINT IN CHANNEL WALL AND FLOOR SLAB
5. LIMIT OF DEMOLITION - AT (EX) CONSTRUCTION JOINT AT THE NORTH SIDE
6. LIMIT OF DEMOLITION - AT (EX) CONSTRUCTION JOINT AT THE SOUTH SIDE
7. UNDISTURBED SOIL. IF THE SOIL IS DISTURBED DURING DEMOLITION OF THE EXISTING CHANNEL, THIS SOIL SHALL BE OVEREXCAVATED AND RECOMPACTED TO THE TOTAL DEPTH OF THE DISTURBED MATERIAL

CONSTRUCTION NOTES:

1. (EX) CONCRETE CHANNEL REINFORCING IS NOT SHOWN FOR CLARITY. REFER TO FOLLOWING SHEET FOR (EX) REINFORCEMENT TO BE PROTECTED AND REMAIN IN PLACE.
2. CHANNEL WALL EXCAVATION SHALL BE SLOPED OR SHORED DURING ALL PHASES OF CONSTRUCTION. REFER TO SPECIFICATIONS NOTES ON SHEET S-001 AND GEOTECHNICAL REPORT FOR REQUIREMENTS.
3. LOCATION PER CIVIL SHEETS.
4. FIELD VERIFY ALL EXISTING DIMENSIONS.
5. REQUIRE THE CONTRACTOR TO LOCATE THE REBAR PRIOR TO ANY DOWELING ACTIVITY. PROVIDE 2" CLEARANCE FROM EXISTING REBAR.
6. IT IS IMPORTANT TO REVIEW THE SHORING WITH MWD. THE 78-INCH PIPE IS VERY CLOSE TO THE EXCAVATION. THIS SHOULD BE ADDRESSED PRIOR TO BIDDING SO THAT THE BIDDERS HAVE CLEAR UNDERSTANDING OF MWD REQUIREMENTS.
7. CONTRACTOR IS REQUIRED TO OBTAIN A PERMIT FROM MWD FOR THE INSTALLATION OF SHORING ADJACENT TO AND WITHIN MWD'S EASEMENT. SHORING WILL BE DRILLED PILE INSTALLATION AND LIMIT VIBRATION NEAR THE PIPELINE PER THE REQUIREMENT OF THE PROJECT SPECIFICATIONS. THE ACCESS ROAD WILL REMAIN A MINIMUM OF 8' IN WIDTH AND ALLOW FOR THE PASSAGE OF MAINTENANCE VEHICLES.

LEGEND:

REMOVE EXISTING FLOOR SLAB

REMOVE EXISTING CHANNEL WALL

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION

AS-BUILT:

REF. DWG. X-XXXX DWG. X-XXXX
REF. DWG. X-XXXX DWG. X-XXXX

DESIGNED BY: AMT
DRAWN BY: AMT
DESIGN CHECK BY:
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
ERIC M. TORRESON
NO. 66068
EXP. 6-30-26
CIVIL
STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT DEMOLITION PLAN

GRAPHIC SCALE 0 24 48 72

DRAWING REF. S3

PAGE

FIELD BOOK X.X.X.

MUNIS Project # XXXX-XXXX-XXXX

Phase# XXXX / Rebid: N/A

SHEET 32 OF 70

NOTE:

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KEYNOTES:

1. (EX) 9" - 10 1/2" THICK CONCRETE CHANNEL FLOOR SLAB
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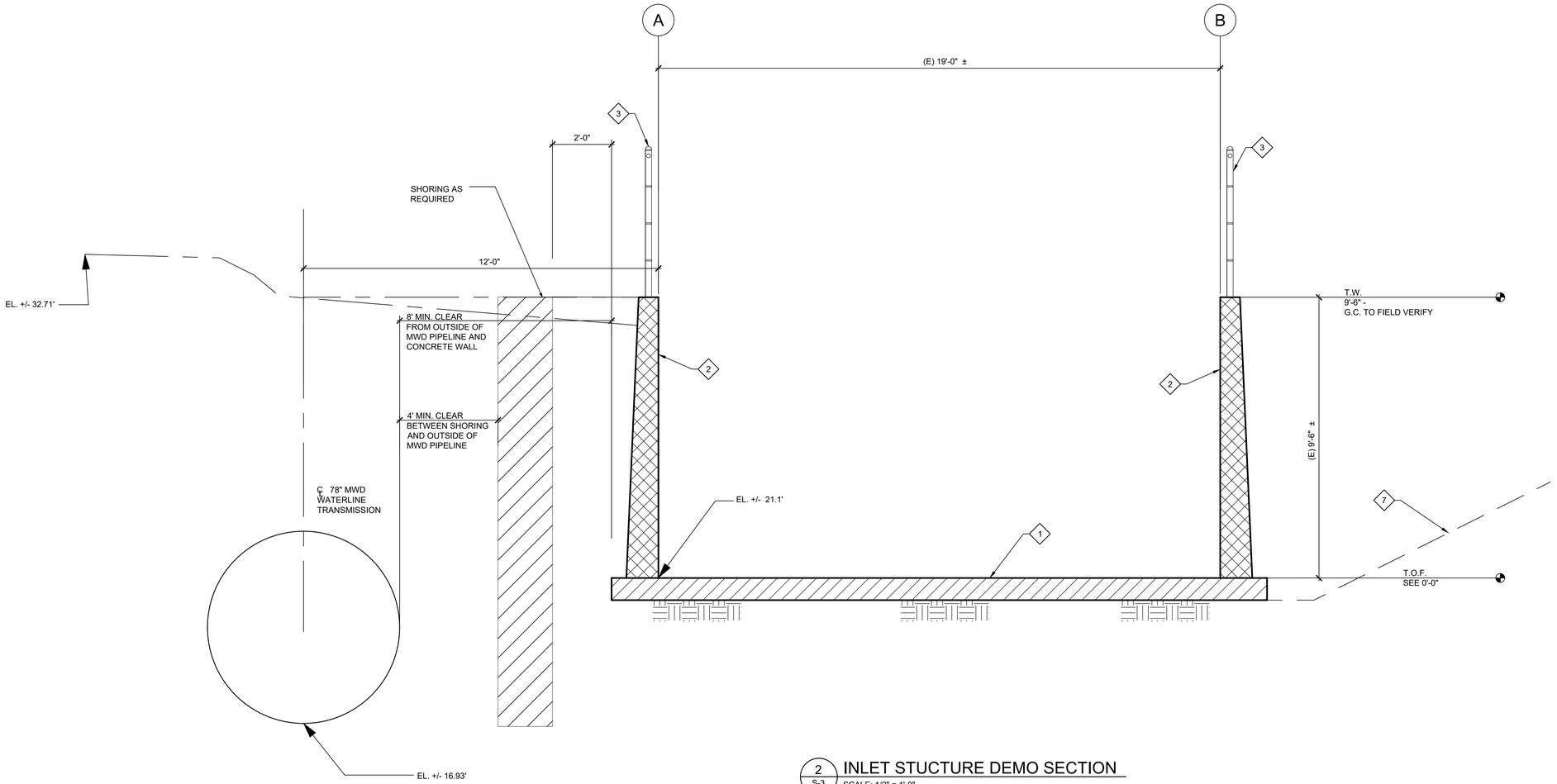

2 / S-3 INLET STUCTURE DEMO SECTION

SCALE: 1/2" = 1'-0"

LEGEND:

- REMOVE EXISTING FLOOR SLAB
- REMOVE EXISTING CHANNEL WALL
- REMOVE EXISTING LOW FLOW CHANNEL

REVISIONS				DESCRIPTION
No.	DATE	SHEET	APPROVAL	
				REF. DWG. X-XXXX DWG. X-XXXX
				AS-BUILT: DWG. X-XXXX

DESIGNED BY: AMT
DRAWN BY: AMT
DESIGN CHECK BY:
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
ERIC M. TORREVSON
NO. 66068
EXP. 6-30-26
CIVIL
STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT DEMOLITION SECTION

GRAPHIC SCALE 0 24 48 72

PAGE

FIELD BOOK X.X.X.

DRAWING REF. S4

MUNIS Project # XXXX-XXXX-XXXX

Phase# XXXX / Rebid: N/A

SHEET 33 OF 70

NOTE:

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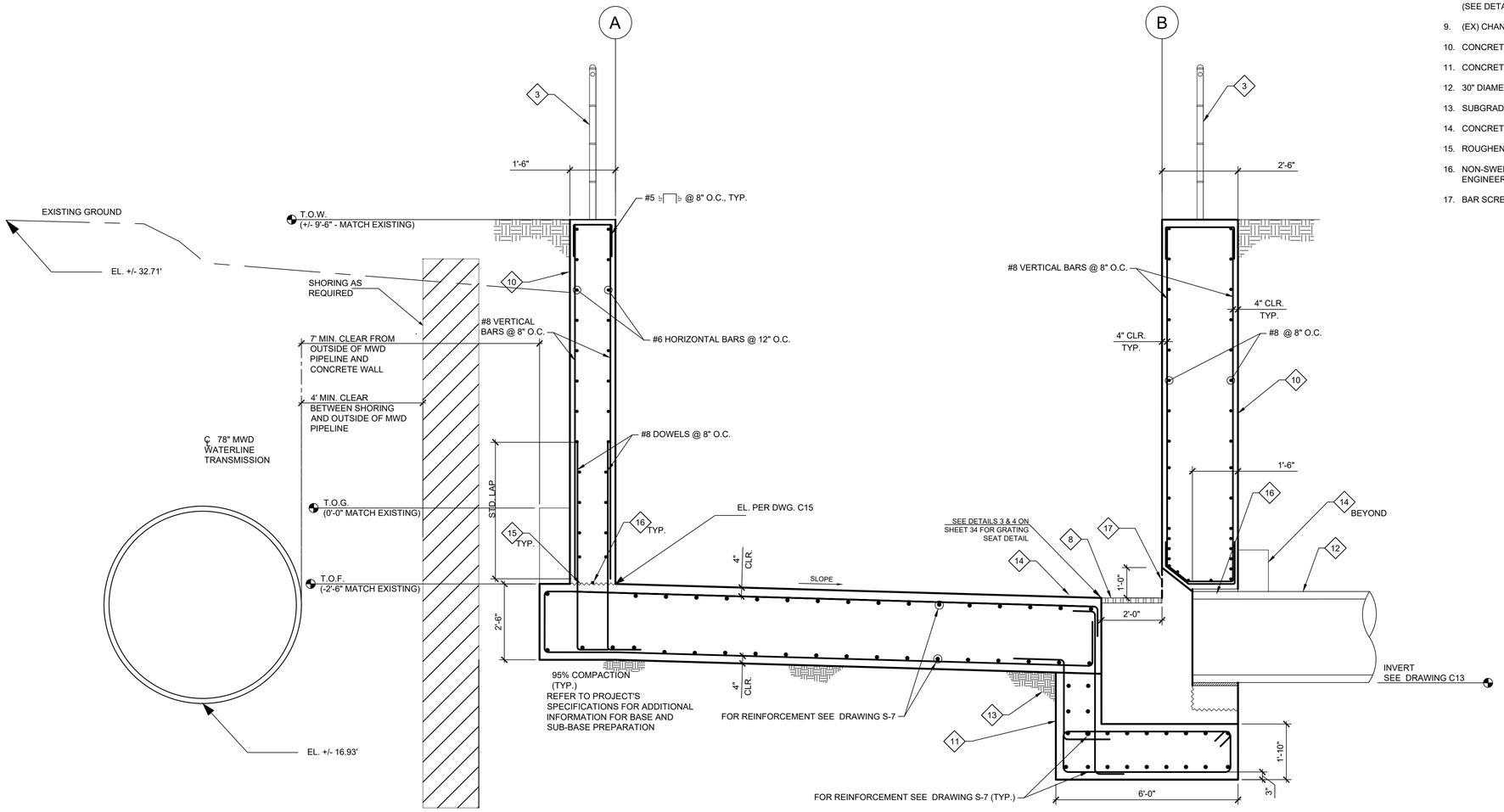

A
-
SECTION
SCALE: 1/2" = 1'-0"

REFERENCE: DRAWING C15 (SHEET 17 OF 68) SECTION B-B

KEYNOTES:

1. (EX) 9" - 10 1/2" THICK CONCRETE CHANNEL FLOOR SLAB
2. (EX) 8" - 9 1/2" THICK TAPERED CONCRETE CHANNEL WALL
3. (EX) CHAIN LINK FENCE, DEMO UP TO NEAREST POST OUTSIDE OF DEMO REGION
4. (EX) CONSTRUCTION JOINT IN CHANNEL WALL AND FLOOR SLAB
5. LIMIT OF DEMOLITION - AT (EX) CONSTRUCTION JOINT AT THE NORTH SIDE
6. LIMIT OF DEMOLITION - AT (EX) CONSTRUCTION JOINT AT THE SOUTH SIDE
7. UNDISTURBED SOIL. IF THE SOIL IS DISTURBED DURING DEMOLITION OF THE EXISTING CHANNEL. THOSE SOIL SHALL BE OVEREXCAVATED AND RECOMPACTED TO THE TOTAL DEPTH OF THE DISTURBED MATERIAL
8. 2' X 4' HEAVY DUTY WELDED GALVANIZED STEEL GRATING PER LACFCD STANDARDS (SEE DETAIL '3' ON SHEET 38 FOR DETAILS)
9. (EX) CHANNEL FLOOR SLAB
10. CONCRETE CHANNEL WALL
11. CONCRETE DROP INLET BOTTOM SLAB
12. 30" DIAMETER RCP PIPE - SEE CIVIL SHEETS
13. SUBGRADE PREPARATION PER CIVIL SHEETS
14. CONCRETE CHANNEL SLAB WITH TURNDOWN AT DROP INLET
15. ROUGHENED CONSTRUCTION JOINT
16. NON-SWELL WATERSTOP HENRY SYNKO-FLEX WATERSTOP, SIKA LOCKSTOP, OR ENGINEER APPROVED EQUAL
17. BAR SCREEN 6" WIDE X 1" HIGH OPENING

CONSTRUCTION NOTES:

1. ALL FILL PLACEMENT ASSOCIATED WITH FINE-GRAINED SOILS USED TO REPLACE OVEREXCAVATED SOILS, FILL PLACED TO ACHIEVE FINISH GRADE SHOULD BE MOISTURE CONDITIONED TO A MINIMUM OF 125 PERCENT OF OPTIMUM MOISTURE CONTENT AND COMPACTED TO AT LEAST 90 PERCENT OF THE MAXIMUM DRY DENSITY AS EVALUATED BY THE LATEST VERSION OF ASTM D1557; SANDY SOILS SHOULD BE MOISTURE CONDITIONED TO A MINIMUM OF 110 PERCENT OF OPTIMUM MOISTURE CONTENT AND COMPACTED TO AT LEAST 90 PERCENT OF THE MAXIMUM DRY DENSITY.
2. EXCAVATED ON-SITE SOILS MAY BE RE-USED AS COMPACTED FILL PROVIDED THEY ARE FREE OF ORGANICS, DELETERIOUS MATERIALS, DEBRIS AND PARTICLES OVER 3 INCHES IN LARGEST DIMENSION. LOCALLY, PARTICLES UP TO 6 INCHES IN LARGEST DIMENSION MAY BE INCORPORATED IN THE FILL SOILS BASED ON SPECIFIC APPROVAL AND PLACEMENT RECOMMENDATIONS PROVIDED BY THE GEOTECHNICAL ENGINEER OF RECORD DURING GRADING.
3. CONTRACTOR IS REQUIRED TO OBTAIN A PERMIT FROM MWD FOR THE INSTALLATION OF SHORING ADJACENT TO AND WITHIN MWD'S EASEMENT. SHORING WILL BE DRILLED PILE INSTALLATION AND LIMIT VIBRATION NEAR THE PIPELINE PER THE REQUIREMENT OF THE PROJECT SPECIFICATIONS. THE ACCESS ROAD WILL REMAIN A MINIMUM OF 8' IN WIDTH AND ALLOW FOR THE PASSAGE OF MAINTENANCE VEHICLES.

FINISH SCHEDULE
CONCRETE SLAB - PER SSPWC SECTION 303-1.9.2 (ORDINARY SURFACE FINISH)
CONCRETE WALLS - PER SSPWC SECTION 303-1.9.2 (ORDINARY SURFACE FINISH)

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION
				AS-BUILT:
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				DWG. X-XXXX

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DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
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SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT DIVERSION VIEW - REINFORCEMENT

GRAPHIC SCALE 0 24 48 72

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MUNIS Project # XXXX-XXXX-XXXX

Phase# XXXX / Rebid: N/A

SHEET 34 OF 70

NOTE:

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KEYNOTES:

1. (EX) 9" - 10 1/2" THICK CONCRETE CHANNEL FLOOR SLAB
2. (EX) 8" - 9 1/2" THICK TAPERED CONCRETE CHANNEL WALL
3. (EX) CHAIN LINK FENCE, DEMO UP TO NEAREST POST OUTSIDE OF DEMO REGION
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8. HEAVY DUTY WELDED STEEL GRATING
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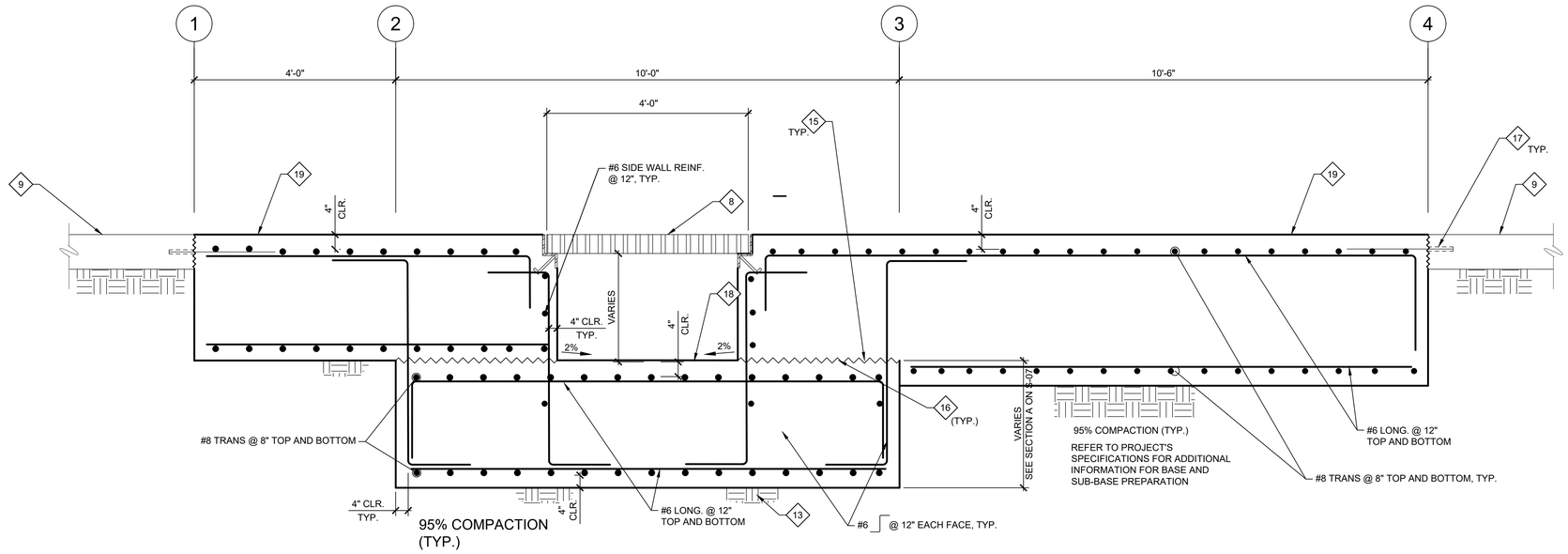
13. SUBGRADE PREPARATION PER CIVIL SHEETS
14. CONCRETE CHANNEL SLAB WITH TURNDOWN AT DROP INLET
15. ROUGHENED CONSTRUCTION JOINT
16. NON-SWELL WATERSTOP HENRY SYNKO-FLEX WATERSTOP, SIKA LOCKSTOP, OR ENGINEER APPROVED EQUAL
17. #5 (x2'-4") REBAR DRILL AND EPOXY DOWELS @ 12" - EMBED 4"
18. CONCRETE DROP INLET BOTTOM SLAB - SEE S-07 FOR REINF.
19. CONCRETE CHANNEL SLAB



C SECTION
SCALE: 3/4" = 1'-0"

REFERENCE: DRAWING C15 (SHEET 17 OF 68) DETAIL 1

FINISH SCHEDULE
CONCRETE SLAB - PER SSPWC SECTION 303-1.9.2 (ORDINARY SURFACE FINISH)
CONCRETE WALLS - PER SSPWC SECTION 303-1.9.2 (ORDINARY SURFACE FINISH)

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION
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SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT DIVERSION VIEW

GRAPHIC SCALE 0 16 32 48
PAGE
FIELD BOOK X.X.X.
DRAWING REF. S6
MUNIS Project # XXXX-XXXX-XXXX
Phase# XXXX / Rebid: N/A
SHEET 35 OF 70
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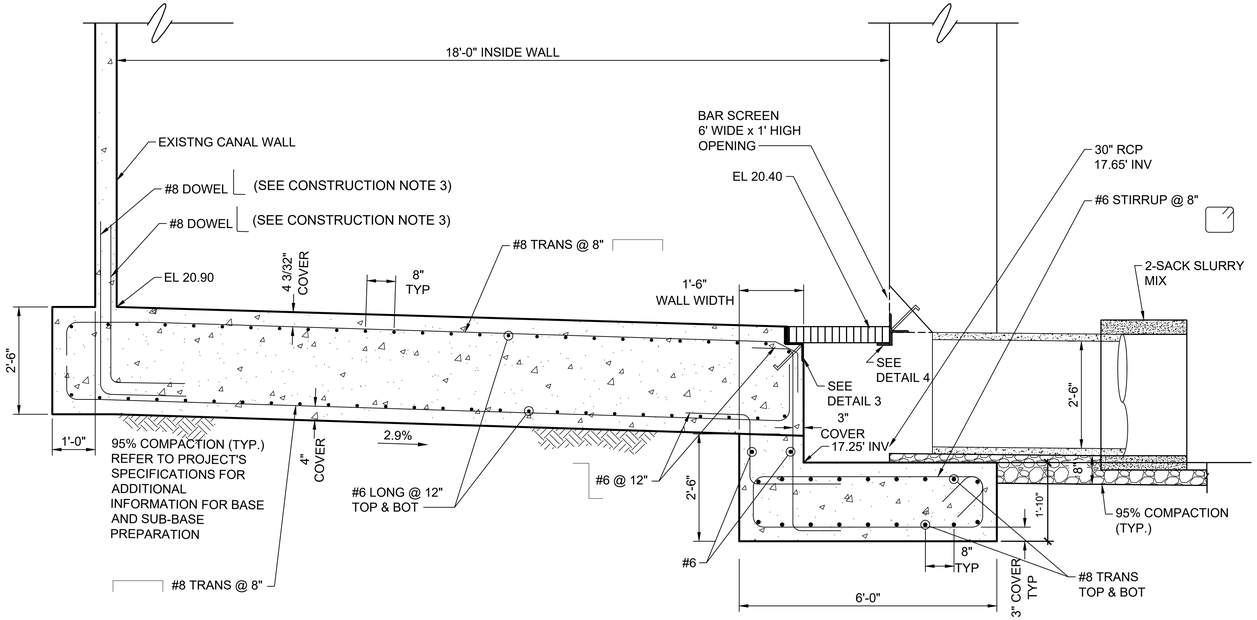
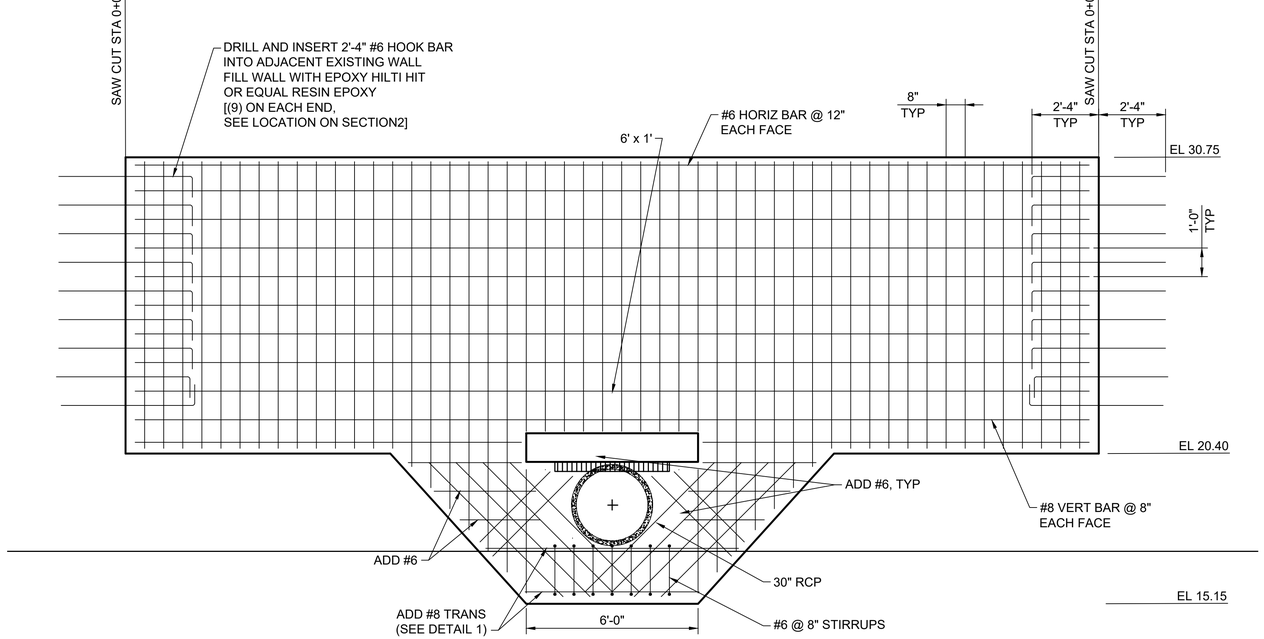


1 — DIVERSION STRUCTURE CROSS SECTION AT CHANNEL

SCALE: 1" = 20"

REFERENCE: DRAWING C15 (SHEET 17 OF 68) SECTION B-B

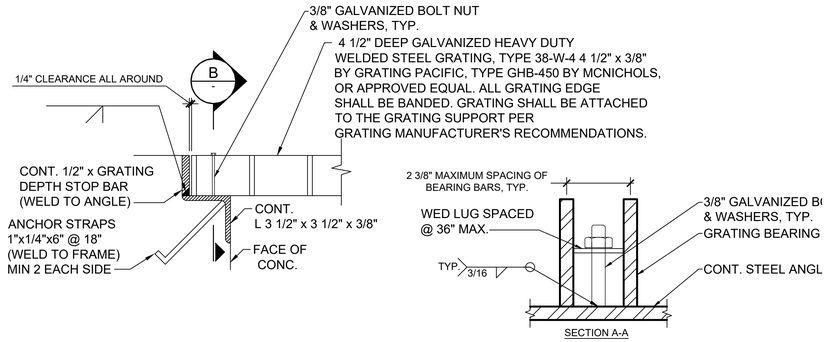


A — SECTION A-A

C24

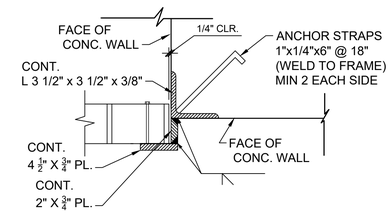
SCALE: 1" = 30"

REFERENCE: DRAWING C15 (SHEET 17 OF 68) SECTION A-A



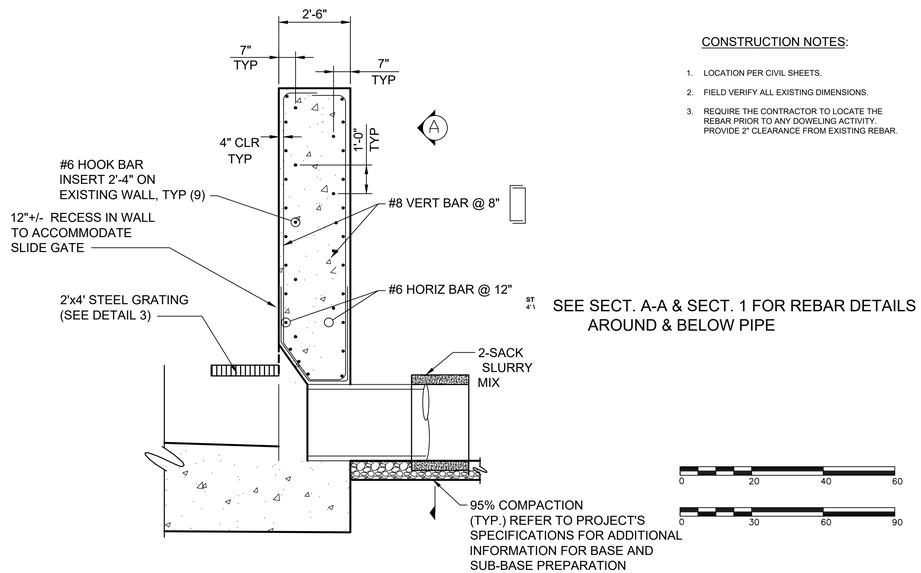
3 — GRATING SEAT AT SLAB END

SCALE: N.T.S



4 — GRATING SEAT AT WALL END

SCALE: N.T.S



CONSTRUCTION NOTES:

1. LOCATION PER CIVIL SHEETS.
2. FIELD VERIFY ALL EXISTING DIMENSIONS.
3. REQUIRE THE CONTRACTOR TO LOCATE THE REBAR PRIOR TO ANY DOWELING ACTIVITY. PROVIDE 2" CLEARANCE FROM EXISTING REBAR.

2 — NEW WALL AT DIVERSION STRUCTURE FROM STA 0+08 TO STA 0+042

SCALE: 1" = 30"

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION
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SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT DIVERSION SECTION

GRAPHIC SCALE: 0 16 32 48

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MUNIS Project # XXXX-XXXX-XXXX

Phase# XXXX / Rebid: N/A

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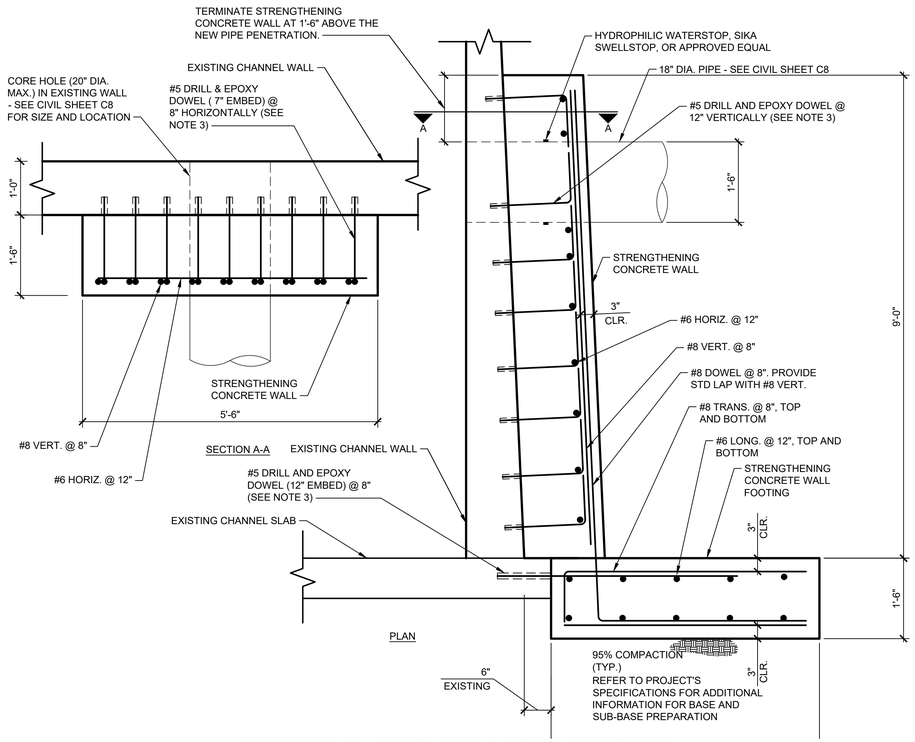
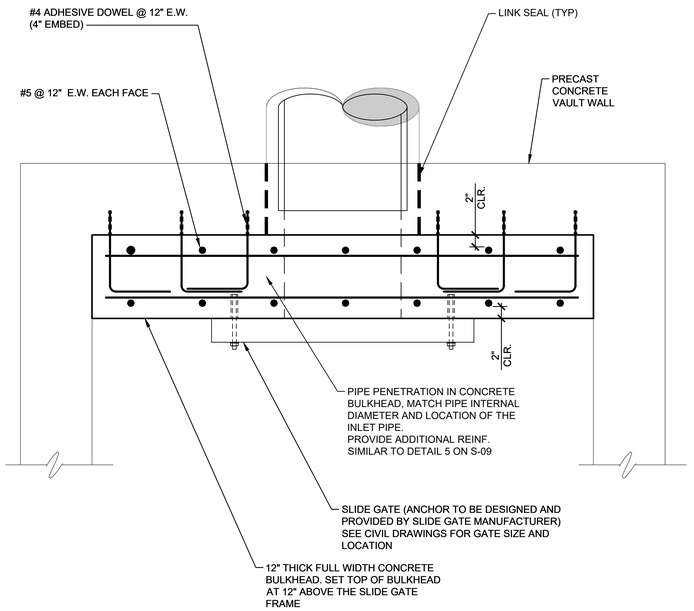


1 / - EXISTING CHANNEL WALL STRENGTHENING AT NEW PIPE PENETRATION

SCALE: 3/4"=1'-0"

NOTE: THIS DETAIL IS LOCATED ON THE RETURN LINE TO THE CHANNEL (SEE SHEET C8)



2 / - SLIDE GATE CONCRETE BULKHEAD SUPPORT

SCALE: 1"=1'-0"

CONSTRUCTION NOTES:

1. LOCATION PER CIVIL SHEETS.
2. FIELD VERIFY ALL EXISTING DIMENSIONS.
3. REQUIRE THE CONTRACTOR TO LOCATE THE REBAR PRIOR TO ANY DOWELING ACTIVITY. PROVIDE 2" CLEARANCE FROM EXISTING REBAR.

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SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT WALL STRENGTHENING

GRAPHIC SCALE 0 16 32 48

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MUNIS Project # XXXX-XXXX-XXXX

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SHEET 37 OF 70

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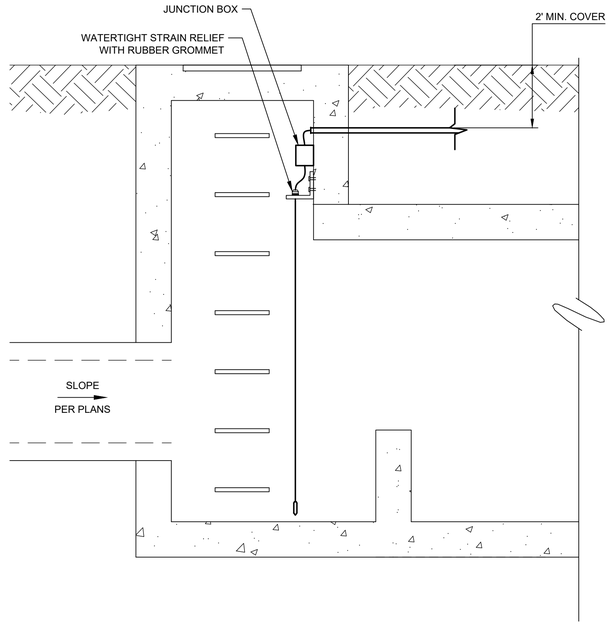
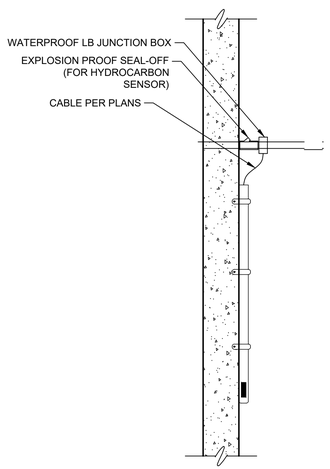


4 — LEVEL TRANSMITTER MOUNTING IN MANHOLE
NTS



NOTES:

1. SEAL OPENING AFTER SENSOR IS INSTALLED.
2. ELECTRICAL INSTALLATION FOR HYDROCARBON SENSOR SHALL BE RATED FOR CLASS 1 DIV 1.
3. HYDROCARBON SENSOR TYPE SHALL BE PER SPECIFICATION.
4. PENETRATIONS INTO ALL EQUIPMENT AND CONNECTIONS WITHIN JUNCTION BOXES MUST BE LIQUID TIGHT. INSTALLATION OF ELECTRICAL COMPONENTS MUST BE IN ACCORDANCE TO SPECIFICATIONS.
5. FRP STEPS SHALL BE PLACED AT 12" SPACING. REFER TO SPPWC 636-2 FOR STEP SIZE AND SPPWC 300-3 NOTE 6 FOR SPACING.
6. UNLESS OTHERWISE SPECIFIED, ALL ANCHOR BOLTS AND MOUNTS SHALL BE STAINLESS STEEL SIMPSON SET-XP ANCHORS (OR APPROVED EQUAL). REFER TO ICC-ES EVALUATION REPORT FOR APPROVED EMBEDMENT LENGTH.
7. HYDROCARBON SENSOR SHALL BE INSTALLED AT THE BOTTOM OF THE PVC STILLING WELL.
8. PERFORATED END CAP SHALL BE INSTALLED 6" BELOW THE OUTLET PIPE INVERT IN THE PRETREATMENT DEVICE.

5 — HYDROCARBON SENSOR MOUNTING IN PRETREATMENT DEVICE
NTS

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SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT SENSOR DETAILS

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MUNIS Project # XXXX-XXXX-XXXX
Phase# XXXX / Rebid: N/A
SHEET 38 OF 70
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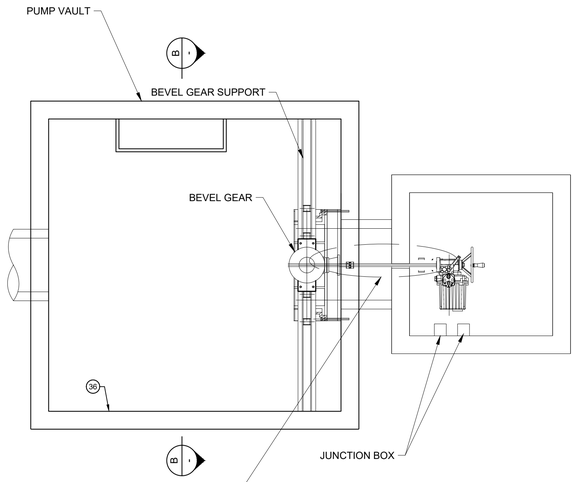
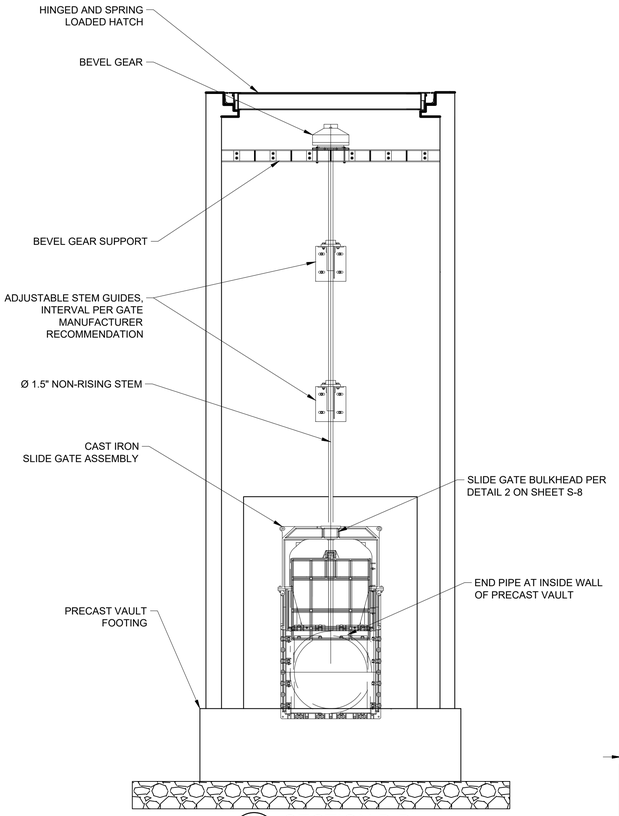
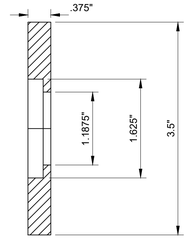


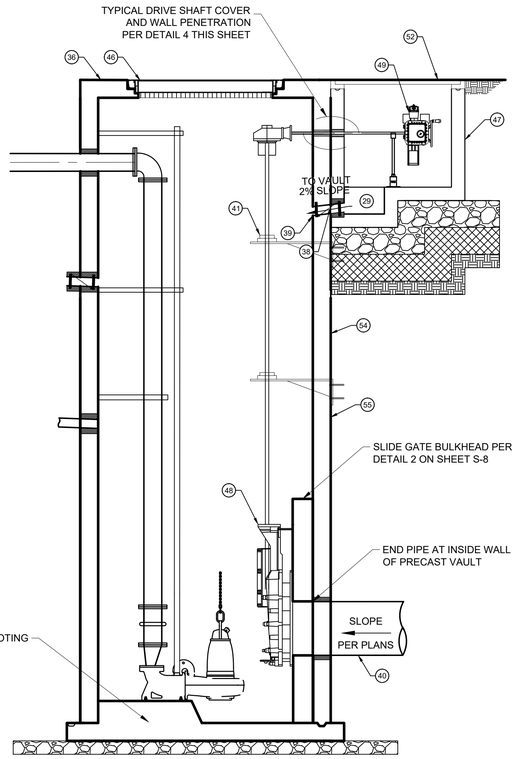
1 – TYPICAL SLIDE GATE
NTS



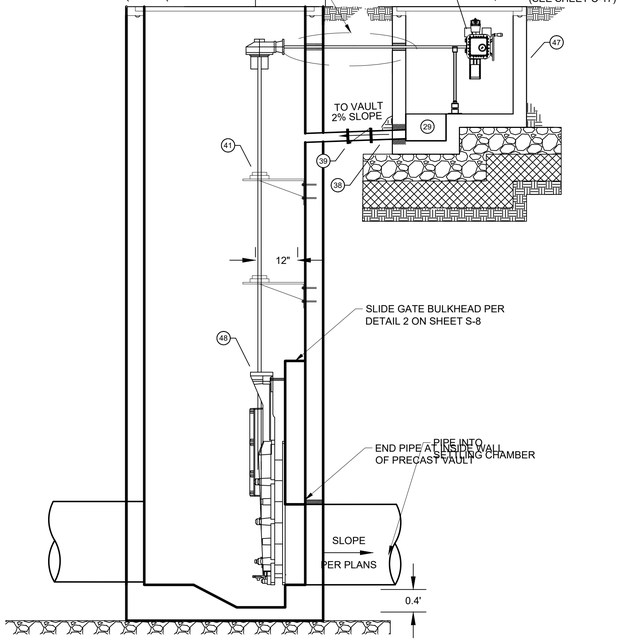
B – SECTION B-B
NTS



5 – DRIVE SHAFT COVER END PLATE
NTS



3 – 36" SLIDE GATE PROFILE
NTS



2 – 30" SLIDE GATE PROFILE
NTS

CONSTRUCTION NOTES FOR DETAILS 1, 2, AND 3

(26) 60" x 60" PRECAST RECTANGULAR VAULT. SEE SPECIFICATIONS.

(29) 18" SQ SUMP WITH ALUMINUM GRATE

(36) 104" X 96" ACCESS HATCH, H20 TRAFFIC RATED, DBL DOOR, SPRING-LOADED HINGES, SECURITY/LOCKING MECHANISM, FALL PROTECTION.

(38) 2" SCH80 PVC DRAIN PIPE. ROUTE TO WETWELL.

(39) 2" SCH80 PVC CHECK VALVE

(40) 36" DIP INFLUENT PIPE

(41) ADJUSTABLE STEM GUIDES. INTERVAL PER GATE MANUFACTURER RECOMMENDATION.

(46) 60" X 60" ACCESS HATCH, H20 TRAFFIC RATED, DBL DOOR, SPRING-LOADED HINGES, SECURITY/LOCKING MECHANISM, FALL PROTECTION.

(47) 48" x 48" PRECAST RECTANGULAR VAULT. SEE SPECIFICATIONS.

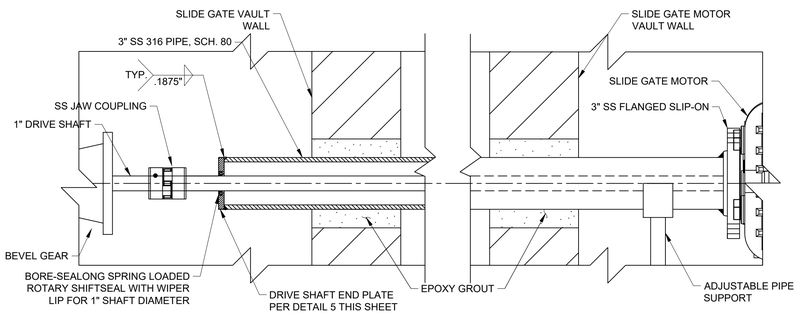
(48) SLIDE GATE. SEE SPECIFICATIONS.

(49) SLIDE GATE MOTOR. SEE SPECIFICATIONS.

(52) 48" X 48" ACCESS HATCH, H20 TRAFFIC RATED, DBL DOOR.

(54) ACCESS LADDER WITH SAF-T-CLIMB FALL PROTECTION SYSTEM. SEE SPECIFICATIONS.

(55) 120" X 96" RECTANGULAR PRECAST WETWELL. SEE SPECIFICATIONS.



4 – TYPICAL DRIVE SHAFT COVER AND WALL PENETRATION DETAIL
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SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT SLIDE GATE DETAILS

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FIELD BOOK X.X.X.

MUNIS Project # XXXX-XXXX-XXXX
Phase# XXXX / Rebid: N/A
SHEET 39 OF 70
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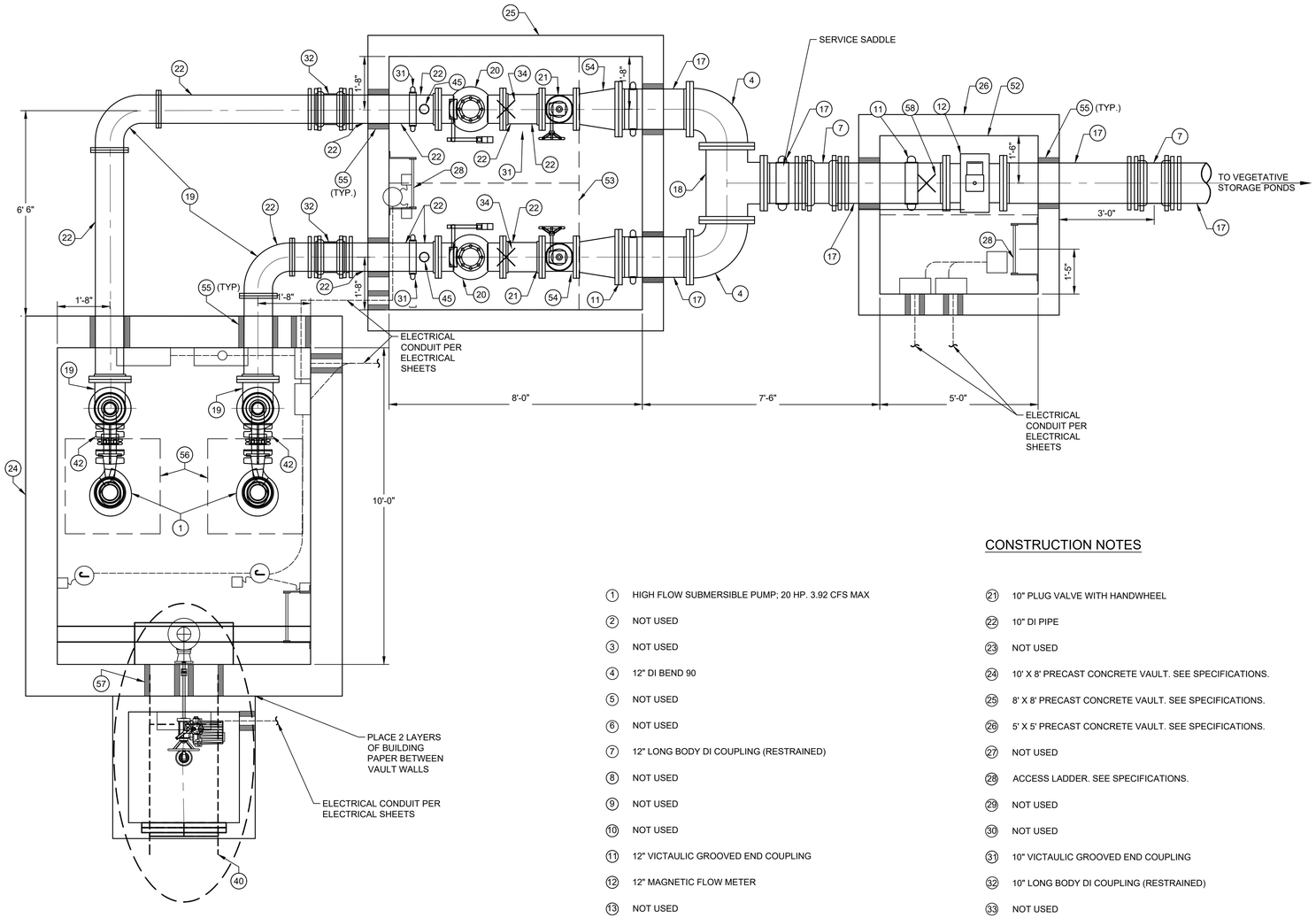

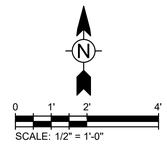

CONSTRUCTION NOTES

1. HIGH FLOW SUBMERSIBLE PUMP; 20 HP. 3.92 CFS MAX
2. NOT USED
3. NOT USED
4. 12" DI BEND 90
5. NOT USED
6. NOT USED
7. 12" LONG BODY DI COUPLING (RESTRAINED)
8. NOT USED
9. NOT USED
10. NOT USED
11. 12" VICTAULIC GROOVED END COUPLING
12. 12" MAGNETIC FLOW METER
13. NOT USED
14. NOT USED
15. NOT USED
16. NOT USED
17. 12" DI PIPE
18. 12" DI TEE
19. 10" DI BEND 90
20. 10" SWING CHECK VALVE WITH LEVER AND WEIGHT
21. 10" PLUG VALVE WITH HANDWHEEL
22. 10" DI PIPE
23. NOT USED
24. 10' X 8' PRECAST CONCRETE VAULT. SEE SPECIFICATIONS.
25. 8' X 8' PRECAST CONCRETE VAULT. SEE SPECIFICATIONS.
26. 5' X 5' PRECAST CONCRETE VAULT. SEE SPECIFICATIONS.
27. NOT USED
28. ACCESS LADDER. SEE SPECIFICATIONS.
29. NOT USED
30. NOT USED
31. 10" VICTAULIC GROOVED END COUPLING
32. 10" LONG BODY DI COUPLING (RESTRAINED)
33. NOT USED
34. FLANGE PIPE SUPPORT (ZINC COATED) GRINNEL OR APPROVED EQUAL
35. NOT USED
36. NOT USED
37. NOT USED
38. 2" SCH80 PVC DRAIN PIPE. ROUTE TO WETWELL.
39. 2" SCH80 PVC CHECK VALVE
40. 36" DIP INFLUENT PIPE
41. ADJUSTABLE SLAM GUIDES. INTERVAL PER GATE MANUFACTURER RECOMMENDATION.
42. DUAL SLIDE RAIL QUICK DISCONNECT ASSEMBLY W/SS WALL SUPPORTS SIZED PER MFR RECOMMENDATIONS.
43. STAINLESS STEEL PIPE SUPPORT. 10' OC TYP.
44. PUMP FLOAT CONTROLS. AS PER PUMP SUPPLIER RECOMMENDATIONS, 5 MIN. INCLUDE SS CABLE TIE BRACKET WITH 2 SPARE TIE CONNECTION POINTS.
45. NOT USED
46. LOW FLOW SUBMERSIBLE PUMP
47. NOT USED
48. NOT USED
49. NOT USED
50. LEVEL TRANSMITTER
51. COMBUSTIBLE GAS SENSOR
52. 48" X 48" ACCESS HATCH, H20 TRAFFIC RATED, DBL DOOR, SPRING-LOADED HINGES, SECURITY/LOCKING MECHANISM, FALL PROTECTION. SEE SPECIFICATIONS.
53. 80" X 96" ACCESS HATCH, H20 TRAFFIC RATED, DBL DOOR, SPRING-LOADED HINGES, SECURITY/LOCKING MECHANISM, FALL PROTECTION. SEE SPECIFICATIONS.
54. 12" X 10" DI ECCENTRIC REDUCER, FLAT ON TOP
55. PIPE PENETRATION PER DETAIL 3 ON SHEET C14
56. 36" X 36" ACCESS HATCH, H20 TRAFFIC RATED, SINGLE DOOR, SPRING-LOADED HINGES, SECURITY/LOCKING MECHANISM, FALL PROTECTION. SEE SPECIFICATIONS.
57. LINK SEAL ELASTOMER SEALING GLAND, TWO SETS (ONE AT INSIDE AND OUTSIDE WALL FACE)
58. ADJUSTABLE PIPE SUPPORT (ZINC COATED), GRINNEL OR APPROVED EQUAL

NOTES:

1. ALL DI FITTINGS ARE FLANGED, EXCEPT THOSE SPECIFICALLY NOTED OTHERWISE
2. ALL PIPE AND EQUIPMENT IN THE VAULTS SHALL BE PAINTER PER PROJECT SPECIFICATIONS
3. ALL DUCTILE IRON PIPE SPOOLS WITH FLANGE SHALL BE CL53
4. ALL DUCTILE IRON PIPE SPOOLS FOR VICTAULICS SHALL BE CL53

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION
				REF. DWG. X-XXXX DWG. X-XXXX
				AS-BUILT: DWG. X-XXXX

DESIGNED BY: AMT
DRAWN BY: AMT
DESIGN CHECK BY:
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
ERIC M. TORRESON
NO. 66068
EXP. 6-30-26
CIVIL
STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT PUMP STATION PLAN TO CHANNEL

DRAWING REF. M3
FIELD BOOK X.X.X.
PAGE
MUNIS Project # XXXX-XXXX-XXXX
Phase# XXXX / Rebid: N/A
SHEET 40 OF 70
NOTE:

TETRA TECH
www.tetratech.com
17885 VON KARMAN AVE #500,
IRVINE, CA 92614
PHONE: (949) 809-5000

LAST SAVED BY: ryan.cheyne
PLOT DATE: Jun. 17, 25 SAVED PATH: P:\Wat\141970.01 cib skylinks phase 2\05 design\02 Sheets

CONSTRUCTION NOTES

1. HIGH FLOW SUBMERSIBLE PUMP; 20 HP. 3.92 CFS MAX
2. NOT USED
3. NOT USED
4. NOT USED
5. NOT USED
6. NOT USED
7. 12" LONG BODY DI COUPLING (RESTRAINED)
8. NOT USED
9. NOT USED
10. NOT USED
11. 12" VICTAULIC GROOVED END COUPLING
12. 12" MAGNETIC FLOW METER
13. NOT USED
14. NOT USED
15. NOT USED
16. NOT USED
17. 14" DI PIPE
18. 14" DI TEE
19. 10" DI BEND 90
20. 10" SWING CHECK VALVE WITH OUTSIDE LEVER AND WEIGHT
21. 10" PLUG VALVE WITH HANDWHEEL.
22. 10" DI PIPE
23. NOT USED
24. 10' X 8' PRECAST CONCRETE VAULT. SEE SPECIFICATIONS.
25. 8' X 8' PRECAST CONCRETE VAULT. SEE SPECIFICATIONS.
26. 5' X 5' PRECAST CONCRETE VAULT. SEE SPECIFICATIONS.
27. NOT USED
28. ACCESS LADDER. SEE SPECIFICATIONS.
29. 18" SQ SUMP WITH ALUMINUM GRATE
30. ROUTE DRAIN PIPING TO PUMP STATION WETWELL. 2% SLOPE.
31. 10" VICTAULIC GROOVED END COUPLING
32. 10" LONG BODY DI COUPLING (RESTRAINED)
33. 6" X 10" REDUCER
34. FLANGE PIPE SUPPORT PER DETAIL
35. NOT USED
36. NOT USED
37. NOT USED
38. 2" SCH80 PVC DRAIN PIPE. ROUTE TO WETWELL.
39. 2" SCH80 PVC CHECK VALVE
40. 36" DIP INFLUENT PIPE
41. ADJUSTABLE SLAM GUIDES. INTERVAL PER GATE MANUFACTURER RECOMMENDATION.
42. DUAL SLIDE RAIL QUICK DISCONNECT ASSEMBLY W/SS WALL SUPPORTS SIZED PER MFR RECOMMENDATIONS.
43. STAINLESS STEEL OFFSET PIPE SUPPORT. 10' OC TYP. TOLLO FIG 7 OR APPROVED EQUAL.
44. PUMP FLOAT CONTROLS. AS PER PUMP SUPPLIER RECOMMENDATIONS, 5 MIN. INCLUDE SS CABLE TIE BRACKET WITH 2 SPARE TIE CONNECTION POINTS.
45. PRESSURE TRANSMITTER FOR PUMP CONTROL SYSTEM. PROVIDE A BOSS TAP (SIZE OF TRANSMITTER INLET + 1/2") AND INSULATED REDUCING BUSHING AND BRONZE BALL VALVE WITH HANDLE.
46. NOT USED
47. NOT USED
48. NOT USED
49. NOT USED
52. 48" X 48" ACCESS HATCH, H20 TRAFFIC RATED, DBL DOOR, SPRING-LOADED HINGES, SECURITY/LOCKING MECHANISM, FALL PROTECTION. SEE SPECIFICATIONS.
53. 80" X 96" ACCESS HATCH, H20 TRAFFIC RATED, DBL DOOR, SPRING-LOADED HINGES, SECURITY/LOCKING MECHANISM, FALL PROTECTION. SEE SPECIFICATIONS.
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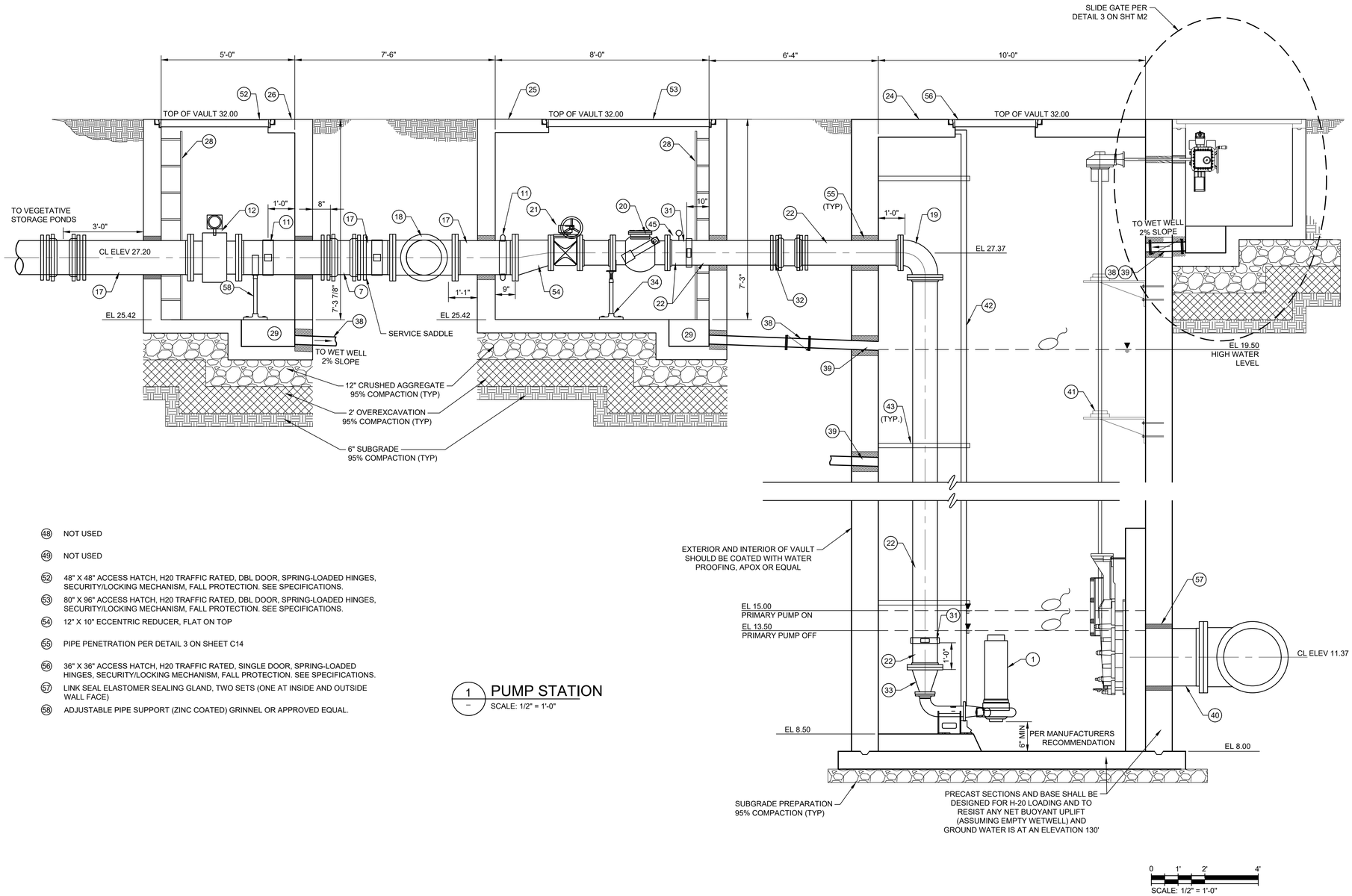
57. LINK SEAL ELASTOMER SEALING GLAND, TWO SETS (ONE AT INSIDE AND OUTSIDE WALL FACE)
58. ADJUSTABLE PIPE SUPPORT (ZINC COATED) GRINNEL OR APPROVED EQUAL.



1 PUMP STATION
SCALE: 1/2" = 1'-0"

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION

AS-BUILT:

REF. DWG. X-XXXX DWG. X-XXXX
DWG. X-XXXX

DESIGNED BY: AMT
DRAWN BY: AMT
DESIGN CHECK BY:
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
ARIC M. TORRESON
NO. 66068
EXP. 6-30-26
CIVIL
STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT PUMP STATION PROFILE TO CHANNEL

DRAWING REF. M4
FIELD BOOK X.X.X.
PAGE

MUNIS Project # XXXX-XXXX-XXXX
Phase# XXXX / Rebid: N/A
SHEET 41 OF 70
NOTE:

TETRA TECH
www.tetratech.com
17885 VON KARMAN AVE #500,
IRVINE, CA 92614
PHONE: (949) 809-5000

LAST SAVED BY: ryan.chevrye
PLOT DATE: Jun. 17, 25 SAVED PATH: P:\Wat\141970.01 clb skylinks phase 2\05 design\02 Sheets

LANDSCAPE IMPROVEMENTS

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT

LONG BEACH, CA

GENERAL NOTES:

1. SEE CIVIL ENGINEERS DRAWINGS FOR GRADING AND DRAINAGE INFORMATION NOT SHOWN IN THESE DRAWINGS.
2. UPON EXECUTION OF THE CONTRACT, PROVIDE THE LANDSCAPE ARCHITECT AND OWNER WITH A CRITICAL PATH SCHEDULE TO INCLUDE EACH ITEM, LEAD TIME, ORDER AND INSTALLATION DATE FOR SUBSTANTIAL COMPLETION.
3. PROVIDE FOR POSITIVE DRAINAGE. NOTIFY LANDSCAPE ARCHITECT IF SITE CONDITIONS ARE OTHERWISE. MAINTAIN FLOWLINES AND DRAINAGE PATTERNS AS INDICATED ON ENGINEER'S GRADING DRAWINGS.
4. VERIFY AND STAKE LOCATION OF UTILITIES PRIOR TO CONSTRUCTION AND IS REQUIRED BY GOVERNING AGENCIES BE HELD LIABLE FOR DAMAGES TO EXISTING UTILITIES INCURRED BY INSTALLATION OF THE WORK.
5. REPAIR AND REPLACE ANY EXISTING IMPROVEMENTS THAT ARE DAMAGED DURING CONSTRUCTION.
6. CHECK DIMENSIONS, FRAMING CONDITIONS AND SITE CONDITIONS BEFORE STARTING WORK. ANY DISCREPANCIES OR POSSIBLE DEFICIENCIES BETWEEN THE DRAWINGS AND THE SPECIFICATIONS WITH FIELD CONDITIONS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE LANDSCAPE ARCHITECT AND THE OWNER.
7. VERIFY PROPERTY LINES PRIOR TO COMMENCING WORK. NO CONSTRUCTION ITEM, INCLUDING FOOTINGS, SHALL EXTEND BEYOND PROPERTY LINE.
8. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUB-CONTRACTORS AS REQUIRED TO ACCOMPLISH THE WORK, PIPING, CONDUIT AND SLEEVES SHALL BE SET IN PRIOR TO INSTALLATION OF CONSTRUCTION ITEMS.
9. THE DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISH STRUCTURE, CONSTRUCTION MEANS AND METHODS, SAFETY PROCEDURES, BRACING, TEMPORARY SUPPORTS, AND SHORING IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. OBSERVATION VISITS TO THE JOB SITE BY THE LANDSCAPE ARCHITECT DO NOT INCLUDE INSPECTION OF CONSTRUCTION METHODS AND SAFETY CONDITIONS AT THE WORK SITE. THESE VISITS SHALL NOT BE CONSTRUED AS CONTINUOUS AND DETAILED INSPECTIONS.
10. GIVE LANDSCAPE ARCHITECT A MINIMUM OF 48 HOURS NOTICE FOR REQUIRED OR REQUESTED JOB SITE VISIT.
11. FORMS AND ALIGNMENT OF PAVING SHALL BE REVIEWED AND APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO POURING.
12. FOR SUBMITTALS, SAMPLES AND SHOP DRAWINGS REQUESTED, SUBMIT IN TRIPLICATE TO LANDSCAPE ARCHITECT WITH ONE COPY TO THE OWNER UNLESS OTHERWISE SPECIFIED.
13. PROPOSED SURFACES SHALL MEET EXISTING SURFACES WITH SMOOTH AND CONTINUOUS TRANSITION AND FLUSH ALONG ENTIRE EDGE.
14. DIMENSIONS ARE FROM OUTSIDE FACE OF THE BUILDING, PAVING AND WALLS UNLESS OTHERWISE NOTED. ANGLES ARE 90 OR 45 UNLESS OTHERWISE NOTED.
15. COORDINATE AND COOPERATE WITH CONTRACTORS OF ATTACHED, ADJOINING AND INTERFACING WORK OF OTHER TRADES.
16. MATERIALS AND WORKMANSHIP, CONFORM TO LATEST UNIFORM BUILDING CODES AND APPLICABLE GOVERNING AGENCY CODES AND ORDINANCES. NO PART OF CONTRACT DOCUMENTS TO BE IN VIOLATION OF CODES. IF DISCREPANCIES EXIST, NOTIFY LANDSCAPE ARCHITECT AND OWNER.

CONSTRUCTION NOTES:

1. CONCRETE, MINIMUM COMPRESSIVE STRENGTH OF 2500 P.S.I. AT TWENTY EIGHT (28) DAYS.
2. CEMENT: CONFORM TO A.S.T.M. C150 AND AGGREGATE SHALL CONFORM TO A.S.T.M. C33.
3. CONCRETE SLUMP: MAXIMUM SLUMP 4 INCHES, EXCEPT FOR FOUNDATIONS WHICH MAY HAVE A 5 INCH MAXIMUM SLUMP.
4. CONSTRUCTION TO BE PLUMB AND TRUE UNLESS OTHERWISE NOTED OR INDICATED.
5. REBAR AND FOOTING SIZES, IF SHOWN, ARE FOR BIDDING PURPOSES ONLY. VERIFY WITH OWNER'S STRUCTURAL OR SOILS ENGINEER THE NEED FOR ALL REINFORCING, BASE MATERIAL, PRE SATURATION AND OTHER STRUCTURAL REQUIREMENTS.
6. PAVING AND CONCRETE CONTRACTORS ARE TO COORDINATE AND COOPERATE WITH THE ELECTRICAL, DRAINAGE AND IRRIGATION SYSTEMS INSTALLATION FOR REQUIRED SLEEVES, PIPES, AND CONDUITS UNDER PAVING.
7. PRIOR TO LAYOUT IF UNDERGROUND IMPROVEMENTS, REFER TO PLANTING PLANS FOR TREE LOCATIONS. STAKE TREES AND OUTLINE SPECIFIED BOX SIZE. ROUT UNDERGROUND DRAINAGE, ELECTRICAL, POOL AND IRRIGATION PIPING OUTSIDE EXCAVATION REQUIRED FOR TREES.
8. ALLOW AT LEAST 6-8 WEEKS TIME FOR PLACEMENT OF ORDER UNTIL DELIVERY ON ANY MANUFACTURED ITEM UNLESS OTHERWISE NOTED.
9. REFER TO FINISH GRADING/DRAINAGE PLANS FOR VERTICAL DIFFERENCES, GRADES AND DRAINAGE SYSTEMS.
10. WRITTEN DIMENSIONS AND DETAILS TAKE PRECEDENCE OVER SCALED DIMENSIONS.
11. VERIFY AND BE RESPONSIBLE FOR DIMENSIONS AND CONDITIONS AT THE JOB SITE. REPORT DISCREPANCIES TO THE IMMEDIATE ATTENTION OF THE OWNER AND THE LANDSCAPE ARCHITECT.
12. CONFORM TO LATEST UNIFORM BUILDING CODE AND APPLICABLE GOVERNING AGENCY CODES AND ORDINANCES. NO PART OF THE CONTRACT DOCUMENTS ARE INTENDED TO BE IN VIOLATION OF CODES. IF DISCREPANCIES EXIST, NOTIFY LANDSCAPE ARCHITECT AND OWNER.
13. COORDINATE AND COOPERATE WITH CONTRACTORS OF ATTACHED, ADJOINING AND INTERFACING WORK OF OTHER TRADES.

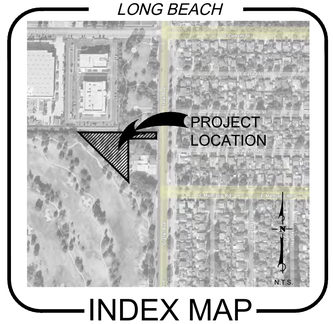
GRADING NOTES:

1. PRIOR TO CONSTRUCTION, VERIFY EXISTING AND PROPOSED GRADES, UTILITY LOCATIONS, EXISTING DRAINAGE STRUCTURES, STREET IMPROVEMENTS, AND FINISH FLOOR ELEVATIONS WITH THE CONTRACT DOCUMENTS. NOTIFY THE LANDSCAPE ARCHITECT IMMEDIATELY UPON DISCREPANCIES.
2. GRADING PLANTING AREAS TO CATCH BASINS AT 2% MINIMUM.
3. PROPOSED PAVING SURFACES SHALL MEET EXISTING PAVING SURFACES WITH SMOOTH AND CONTINUOUS TRANSITION AND FLUSH ALONG ENTIRE EDGE.
4. CONCRETE WALKS TO HAVE A MAXIMUM CROSS SLOPE OF 2% AND SHALL MEET GOVERNING AGENCY REQUIREMENTS.
5. INSTALL DRAIN LINES IN SMOOTH, CONTINUOUS SLOPE AT $\frac{1}{4}$% (3" IN 50') FALL UNLESS NOTED OTHERWISE. INSTALL INLETS IN PAVING POSITIONED IN ALIGNMENT WITH ADJACENT MATERIAL.
6. PROVIDE PVC PIPE AS SHOWN OR IF NOT SHOWN, AS REQUIRED TO CONNECT DRAIN INLETS AND PROVIDE A COMPLETE DRAINAGE SYSTEM.
7. CORE DRILL AND DAYLIGHT DRAIN LINE THROUGH FACE OF EXISTING CURB ABOVE FLOW LINE. VERIFY LOCATION AND INVERT IN THE FIELD.
8. ESTABLISH FINISH GRADES IN SHRUB AREAS 2 INCHES BELOW ADJACENT PAVING SURFACE AND 1 INCH BELOW ADJACENT PAVING SURFACE FOR LAWN AREAS.
9. REFER TO THE CIVIL ENGINEERING DRAWINGS FOR ADDITIONAL DRAINAGE SYSTEMS NOT FULLY SHOWN HERE. COORDINATE INSTALLATION OF ENTIRE DRAINAGE SYSTEM SHOWN ON LANDSCAPE AND CIVIL DRAWINGS.
10. COORDINATE ROUTING OF DRAINAGE PIPE AROUND TREE PIT LOCATIONS INDICATED ON PLANTING PLANS.
11. MAINTAIN "AS-BUILT" DRAWINGS OF DRAINAGE PIPE ROUTING. SUBMIT MYLAR REPRODUCIBLE "AS-BUILT" TO OWNER UPON COMPLETION OF THE WORK.
12. DO NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS, AREA DISCREPANCIES AND/OR GRADE DESIGN. SUCH EXISTING CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT AND/OR OWNER. ASSUME FULL RESPONSIBILITY FOR NECESSARY REVISIONS DUE TO FAILURE TO GIVE SUCH NOTIFICATION.

OWNER / CLIENT
CITY OF LONG BEACH
DEPARTMENT OF PUBLIC WORKS
ENGINEERING BUREAU
411 W. OCEAN BLVD.
LONG BEACH, CA 90802

LANDSCAPE ARCHITECT
Sustainable Landesign
1545 Wild Rye Way
Arroyo Grande, CA 93420
(805) 878-7508
Contact: Mauricio Argente

VICINITY MAP



INDEX MAP

LANDSCAPE SHEET INDEX

SHEET	*DRAWING TITLE*	*SHEET NO.*
L1	COVER SHEET	1
L2	LAYOUT PLAN	2
L3	CONSTRUCTION DETAILS	3
L4	IRRIGATION SCHEDULES	4
L5	IRRIGATION PLAN	5
L6~L7	IRRIGATION DETAILS	6-7
L8	PLANTING SCHEDULE AND NOTES	8
L9	TREE REMOVAL PLAN	9
L10	TREE PLANTING PLAN	10
L11	SHRUB PLANTING PLAN	11
L12	PLANTING DETAILS	12

Sustainable Landesign

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION
	7.1.22	ALL		60% SUBMITTAL – NOT FOR CONSTRUCTION
	10.28.22	ALL		90% SUBMITTAL – NOT FOR CONSTRUCTION
	4.28.23	ALL		100% SUBMITTAL – NOT FOR CONSTRUCTION

AS-BUILT:

REF. DWG. X-XXXX DWG. X-XXXX
DWG. X-XXXX

DESIGNED BY: M.A.
DRAWN BY: P.L.
DESIGN CHECK BY:
DRAFTING CHECK BY:

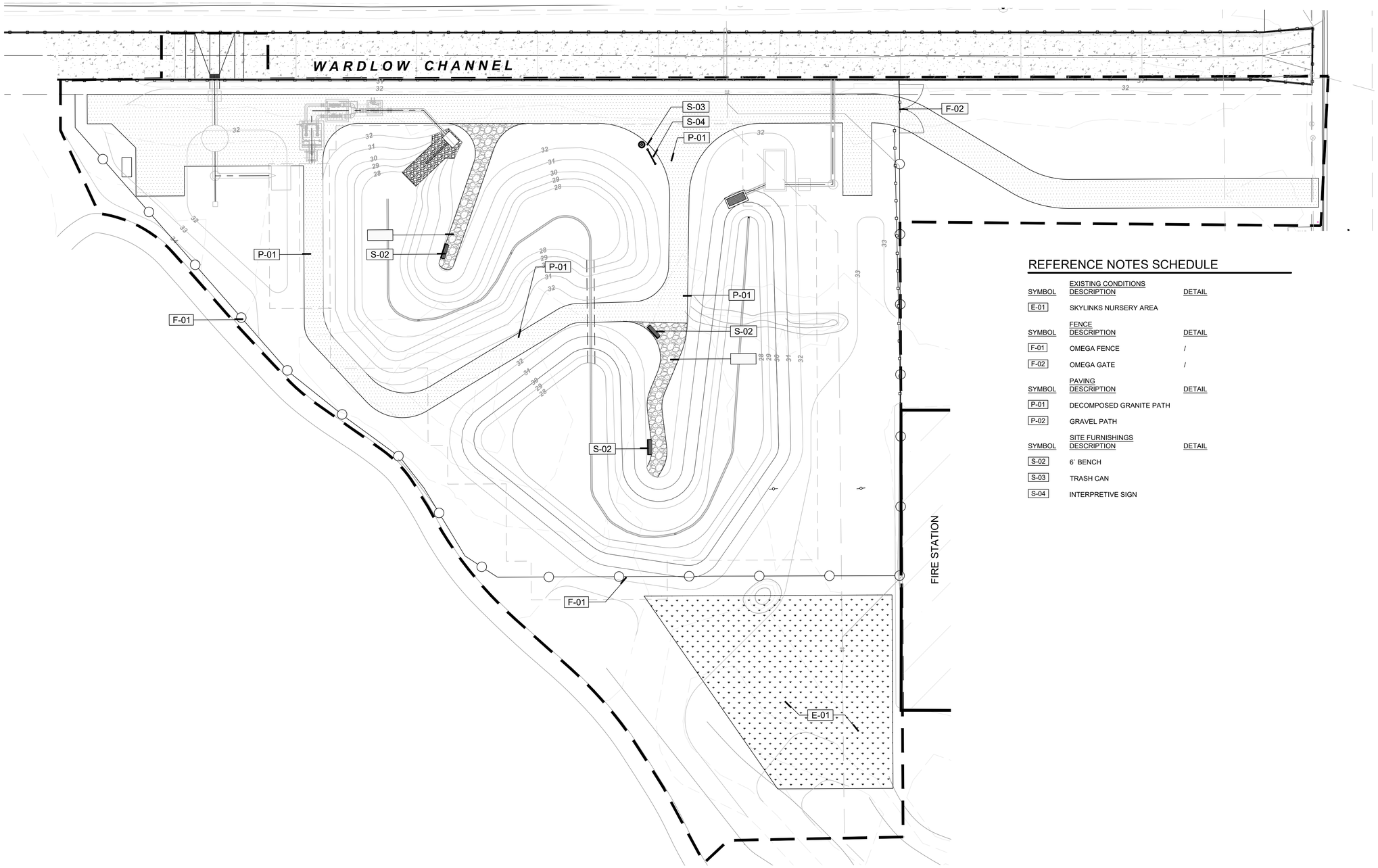
LANDSCAPE ARCHITECT ★ VINCENTIUS ★ CIVIL ENGINEER ★ STATE OF CALIFORNIA
Signature
Print Name
Date

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
COVER SHEET

GRAPHIC SCALE 0 20 40 60
PAGE X.X.X.
FIELD BOOK X.X.X.

JOB NO. PWXXXX XX
NO. R- XXXX
SHEET 42 OF 70
DRAWING NO. L1

LAST SAVED BY: mauri
PLOT DATE: May. 9, 23 SAVED PATH: C:\Users\mauri\OneDrive\Documents\Sustainable Landesign\Projects\Lt - Skylinks Golf Course\CAD\100 Percent 5-9-23\Skylinks_5.9.23



REFERENCE NOTES SCHEDULE

SYMBOL	EXISTING CONDITIONS DESCRIPTION	DETAIL
E-01	SKYLINKS NURSERY AREA	

SYMBOL	FENCE DESCRIPTION	DETAIL
F-01	OMEGA FENCE	/
F-02	OMEGA GATE	/

SYMBOL	PAVING DESCRIPTION	DETAIL
P-01	DECOMPOSED GRANITE PATH	
P-02	GRAVEL PATH	

SYMBOL	SITE FURNISHINGS DESCRIPTION	DETAIL
S-02	6' BENCH	
S-03	TRASH CAN	
S-04	INTERPRETIVE SIGN	

GRAPHIC SCALE
0 20 40 60

SCALE: 1"= 20'

FN:L-2_Landscape Plan
DATE: 4/20/23
XXX
PLOT SCALE: 1=1

Sustainable Landesign

DESIGNED BY: M.A.
DRAWN BY: P.L.
DESIGN CHECK BY:
DRAFTING CHECK BY:

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION
	7.1.22	ALL		60% SUBMITTAL – NOT FOR CONSTRUCTION
	10.28.22	ALL		90% SUBMITTAL – NOT FOR CONSTRUCTION
	4.28.23	ALL		100% SUBMITTAL – NOT FOR CONSTRUCTION

AS-BUILT:

REF. DWG. X-XXXX DWG. X-XXXX
DWG. X-XXXX

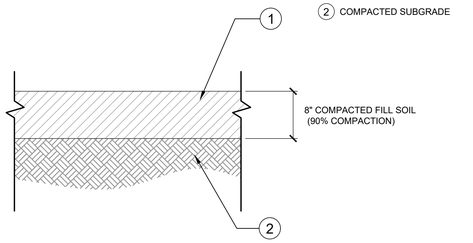
LANDSCAPE ARCHITECT CLIO ANDERSON No. 6131 REGISTERED STATE OF CALIFORNIA
Signature
Approval Date

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
LAYOUT PLAN

GRAPHIC SCALE 0 20 40 60
PAGE X.X.X.
FIELD BOOK X.X.X.

JOB NO. PWXXXX XX
NO. R- XXXX
SHEET 43 OF 70
DRAWING NO. L2

LAST SAVED BY: mauri
PLOT DATE: May. 9, 23 SAVED PATH: C:\Users\mauri\OneDrive\Documents\Sustainable Landesign\Projects\T1 - Skylinks Golf Course\CAD\100 Percent 5-9-23\Skylinks_5.9.23



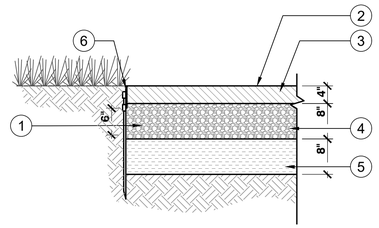
1. COMPACTED SOIL PATH, REFER TO PLAN WITH WIDTH
2. COMPACTED SUBGRADE

D NOT USED

3/4" = 1'-0" P-SL-SK-137

C COMPACTED SOIL PATH

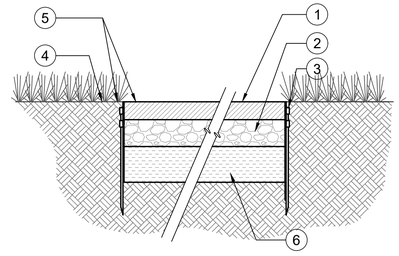
1" = 1'-0" P-SL-SK-15



1. CRUSHED MISCELLANEOUS BASE (95% COMPACTION)
2. PATH WIDTH PER PLAN
3. LAYER STABILIZED CRUSHED STONE
4. CRUSHED MISCELLANEOUS BASE (95% COMPACTION)
5. SUBGRADE, SEE NOTE 1. (95% COMPACTION)
6. 1/4" X 5" DEEP METAL EDGING, STAKES ON PLANTING SIDE, 24"STAKES @ 24" O.C.

B STABILIZED CRUSH STONE PATH

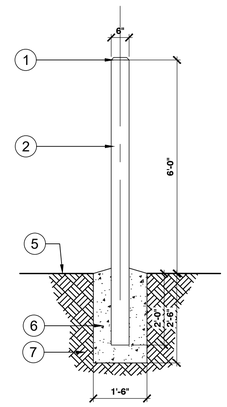
3/4" = 1'-0" P-SL-SK-147



1. 4" THICK DECOMPOSED GRANITE PAVEMENT WITH WATER PERMEABLE ORGANIC BINDER COMPACT IN 2 LAYERS(95% COMPACTION)
2. 6" CRUSHED MISCELLANEOUS BASE (95% COMPACTOIN) PER PLAN
3. 1/4" X 5" DEEP METAL EDGING, STAKES ON PLANTING SIDE, 24"STAKES @ 24" O.C.
4. ADJACENT PLANTING PER PLAN
5. FLUSH
6. 8" SUBGRADE 90% COMPACTED

A DECOMPOSED GRANITE WITH METAL EDGING

3/4" = 1'-0" P-SL-SK-146

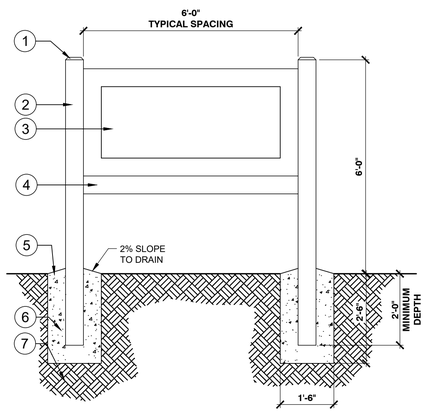


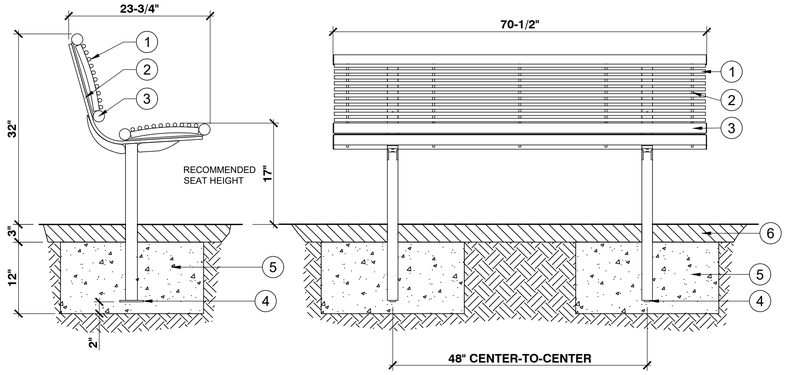
1. 1" X 45 DEGREE CHAMFER ALL 4 SIDES (TYPICAL)
2. 6 x 6 POST
3. LAMINATED INTERPRETIVE / MAP PER CITY STANDARDS
4. 6 X 6 WOOD CROSS BEAM
5. FINISHED GRADE
6. 2500 PSI CONCRETE FOOTING
7. 90% COMPACTED SUBGRADE

NOTE: REDWOOD TO BE CONSTRUCTION HEART GRADE

F INTERPRETIVE SIGN

1/2" = 1'-0" P-SL-SK-05

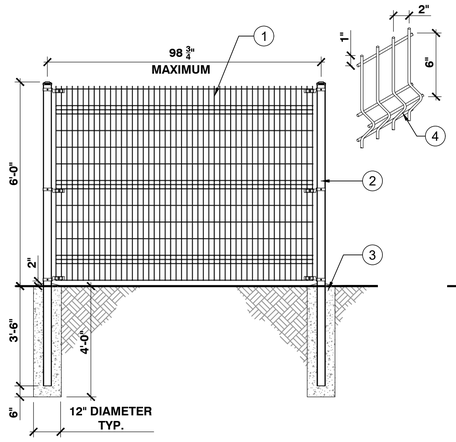




1. (20) 5/8' SOLID STEEL RODS
2. 3/8" X1" SOLID STEEL BRACING
3. INTEGRAL WELDED CROSS-MEMBERS OF 1-7/8" TUBULAR STELL
4. A STEEL ANCHOR TAB IS WELDED TO THE BOTTOM OF THE LEG TO HELP SECURE THE ASSEMBLY IN THE CONRETE FOTTING
5. 24" DIAMETER 2500 PSI CONCRETE FOOTING ON 90% COMPACTED EXISTING SOIL
6. STABILIZED CRUSHED STONE

E VICTOR STANLEY 6' BENCH

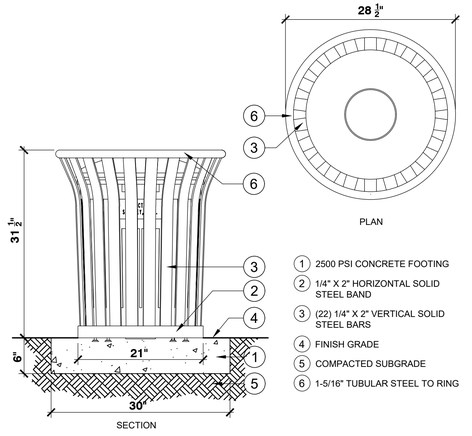
1" = 1'-0" P-SL-SK-138



1. OMEGA FENCE SYSTEM ARCHITECTURAL STEEL PANEL MOUNTED ON SQUARE POST. 2'X6" OPENING WITH 6 GAUGE WIRE. COLOR=STANDARD SIGNAL BLACK.
2. OMEGA FENCE SYSTEM STEEL 3"x3" POST. COLOR=STANDARD SIGNAL BLACK.
3. 2500 PSI CONCRETE FOOTING. TOP OF FOOTING 1" ABOVE FINISH GRADE. CROWN TOP OF FOOTING TO DRAIN AWAY FROM POST.
4. WIRE 6 GA
5. LATCH
6. HINGE
7. DROP BAR FOOTING FOR DOUBLE SWING GATE. PROVIDE 2500 PSI CONCRETE FOOTING. TOP OF FOOTING FLUSH WITH FINISH GRADE. EMBED A SCH. 40 GALVANIZED PIPE TO ACCOMMODATE THE LENGTH OF THE GATE DROP BAR PLUS 2" OF SPACE BELOW BAR. DIAMETER OF PIPE APPROXIMATELY 1" GREATER THAN DROP BAR.

H OMEGA FENCE POST PANEL WITH GATE

1/4" = 1'-0" P-SL-SK-148



1. 2500 PSI CONCRETE FOOTING
2. 1/4" X 2" HORIZONTAL SOLID STEEL BAND
3. (22) 1/4" X 2" VERTICAL SOLID STEEL BARS
4. FINISH GRADE
5. COMPACTED SUBGRADE
6. 1-5/16" TUBULAR STEEL TO RING

G VICTOR STANLEY 32 INCH ROUND TRASH BIN

1" = 1'-0" P-SL-SK-159

Sustainable Landesign

No.	DATE	SHEET	APPROVAL	DESCRIPTION
	7.1.22	ALL		60% SUBMITTAL – NOT FOR CONSTRUCTION
	10.28.22	ALL		90% SUBMITTAL – NOT FOR CONSTRUCTION
	4.28.23	ALL		100% SUBMITTAL – NOT FOR CONSTRUCTION

REVISIONS

AS-BUILT: REF. DWG. X-XXXX DWG. X-XXXX DWG. X-XXXX

DESIGNED BY: M.A.
DRAWN BY: P.L.
DESIGN CHECK BY:
DRAFTING CHECK BY:

LANDSCAPE ARCHITECT ★ CALIFORNIA ★ STATE OF CALIFORNIA
CLIO ANDERSON
No. 6134
Signature
Approval Date

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
CONSTRUCTION DETAILS

GRAPHIC SCALE 0 20 40 60
PAGE X.X.X.
FIELD BOOK X.X.X.

JOB NO. PWXXXX XX
NO. R- XXXX
SHEET 44 OF 70
DRAWING NO. L3

LAST SAVED BY: mauri
PLOT DATE: May 9, 23
SAVED PATH: C:\Users\mauri\OneDrive\Documents\Sustainable Landesign\Projects\Tt - Skylinks Golf Course\CAD\100 Percent 5-9-23\Skylinks_5.9.23

VALVE SCHEDULE

NUMBER	MODEL	SIZE	TYPE	GPM	WIRE	DESIGN PSI	PSI	PSI @ POC	PRECIP
1	RAIN BIRD PESBR-PRS-D	1"	SHRUB ROTOR	8	22.7	30	38.1	51.4	0.91 in/h
2	RAIN BIRD PESBR-PRS-D	1-1/2"	SHRUB ROTARY	38.66	32.4	45	49.6	65.0	0.81 in/h
3	RAIN BIRD PESBR-PRS-D	1"	BUBBLER	9.5	57.9	30	39.4	52.9	0.85 in/h
4	RAIN BIRD PESBR-PRS-D	1-1/2"	SHRUB ROTARY	25.58	145.7	45	52.2	66.8	0.41 in/h
5	RAIN BIRD PESBR-PRS-D	1-1/2"	SHRUB ROTARY	34.6	181.1	45	53.2	69.6	0.83 in/h
6	RAIN BIRD PESBR-PRS-D	1-1/2"	SHRUB ROTOR	41.1	189.3	45	49.6	67.5	0.82 in/h
7	RAIN BIRD PESBR-PRS-D	1-1/2"	SHRUB ROTOR	42.22	202.8	45	49.8	68.1	0.85 in/h
8	RAIN BIRD PESBR-PRS-D	1-1/2"	SHRUB ROTARY	31.32	245.3	45	49.7	66.1	0.49 in/h
9	RAIN BIRD PESBR-PRS-D	1"	DRIP EMITTER	6	349.9	30	34.3	47.8	0.9 in/h
10	RAIN BIRD PESBR-PRS-D	1-1/2"	SHRUB ROTARY	29.69	371.9	45	50.8	67.7	0.5 in/h
11	RAIN BIRD PESBR-PRS-D	1"	SHRUB ROTARY	22.63	378.2	45	52.4	67.7	0.91 in/h
12	RAIN BIRD PESBR-PRS-D	1-1/2"	SHRUB ROTARY	32.73	398.6	45	56.0	74.0	0.79 in/h
13	RAIN BIRD PESBR-PRS-D	1-1/2"	SHRUB ROTOR	36.14	432.2	45	50.4	69.9	0.84 in/h
14	RAIN BIRD PESBR-PRS-D	1-1/2"	SHRUB ROTARY	30.83	439.1	45	55.0	72.9	0.51 in/h
15	RAIN BIRD PESBR-PRS-D	1-1/2"	SHRUB ROTARY	34.67	450.9	45	51.6	70.8	0.56 in/h
16	RAIN BIRD XCZ-100-PRB-R	1"	AREA FOR DRIP EMITTERS		457.1	30	31	44.3	Unknown
	Common Wire				723.6				

CRITICAL ANALYSIS

Generated:	2022-10-19 08:53
P.O.C. NUMBER: 01	
Water Source Information:	STATIC PSI IS AN ASSUMED READING FOR PRELIMINARY PURPOSES. SHALL BE CONFIRMED PRIOR TO CONSTRUCTION DOCUMENTATION.
FLOW AVAILABLE	
Water Meter Size:	2"
Flow Available	77.18 GPM
PRESSURE AVAILABLE	
Static Pressure at POC:	90 PSI
Elevation Change:	5.00 ft
Service Line Size:	2"
Length of Service Line:	20 ft
Pressure Available:	87 PSI
DESIGN ANALYSIS	
Maximum Station Flow:	42.22 GPM
Flow Available at POC:	77.18 GPM
Residual Flow Available:	34.96 GPM
Critical Station:	12
Design Pressure:	45 PSI
Friction Loss:	3.61 PSI
Fittings Loss:	0.36 PSI
Elevation Loss:	0 PSI
Loss through Valve:	7 PSI
Pressure Req. at Critical Station:	55.97 PSI
Loss for Fittings:	0.35 PSI
Loss for Main Line:	3.53 PSI
Loss for POC to Valve Elevation:	0 PSI
Loss for Backflow:	11.66 PSI
Loss for Master Valve:	1.6 PSI
Loss for Water Meter:	0.91 PSI
Critical Station Pressure at POC:	74.02 PSI
Pressure Available:	87 PSI
Residual Pressure Available:	12.98 PSI

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
14 ADJ 14 F	RAIN BIRD R-VAN14 RD-12-SAM-P45-NP SHRUB ROTARY, 8`-14` 45-270 DEGREES AND 360 DEGREES. HAND ADJUSTABLE MULTI-STREAM ROTARY W/RD1800 SHRUB SPRAY BODY ON 12" POP-UP, W/ CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2" NPT FEMALE THREADED INLET. W/ NON-POTABLE PURPLE CAP.	16	45
18 ADJ 18 F	RAIN BIRD R-VAN18 RD-12-SAM-P45-NP SHRUB ROTARY, 13`-18` 45-270 DEGREES AND 360 DEGEES. HAND ADJUSTABLE MULTI-STREAM ROTARY W/RD1800 SHRUB SPRAY BODY ON 12" POP-UP, W/ CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2" NPT FEMALE THREADED INLET. W/ NON-POTABLE PURPLE CAP.	11	45
24 ADJ 24 F	RAIN BIRD R-VAN24 PA-8S-NP SHRUB ROTARY ON FIXED RISER WITH THE PA-8S PURPLE SHRUB ADAPTER, 17`-24` 45-270 DEGREES AND 360 DEGREES. HAND ADJUSTABLE MULTI-STREAM ROTARY. USE WITH 1/2" MPT THREADED RISERS.	3	45
24 ADJ 24 F	RAIN BIRD R-VAN24 RD-12-SAM-P45-NP SHRUB ROTARY, 17`-24` 45-270 DEGREES AND 360 DEGREES HAND ADJUSTABLE MULTI-STREAM ROTARY W/RD1800 SHRUB SPRAY BODY ON 12" POP-UP, W/ CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2" NPT FEMALE THREADED INLET. W/ NON-POTABLE PURPLE CAP.	101	45
1401 1402 1404 1408	RAIN BIRD 1800-1400 FLOOD 1401 FIXED FLOW RATE (0.25-2.0GPM), FULL CIRCLE BUBBLER, 1/2" FIPT.	38	30

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI	GPM	RADIUS
25	RAIN BIRD 5012-PL-PC-SAM-R-NP-MPR 25 SHRUB ROTOR, 12" POP-UP, PLASTIC RISER, WITH FLOW SHUT-OFF DEVICE. MATCHED PRECIPITATION ROTOR (MPR NOZZLE), ARC AND RADIUS AS PER SYMBOL. 25 FT=RED, 30 FT=GREEN, 35FT=BEIGE. WITH CHECK VALVE, NON-POTABLE PURPLE CAP, AND IN-STEM PRESSURE REGULATOR.	8	45		25'
30	RAIN BIRD 5012-PL-PC-SAM-R-NP-MPR 30 SHRUB ROTOR, 12" POP-UP, PLASTIC RISER, WITH FLOW SHUT-OFF DEVICE. MATCHED PRECIPITATION ROTOR (MPR NOZZLE), ARC AND RADIUS AS PER SYMBOL. 25 FT=RED, 30 FT=GREEN, 35FT=BEIGE. WITH CHECK VALVE, NON-POTABLE PURPLE CAP, AND IN-STEM PRESSURE REGULATOR.	12	45		30'
35	RAIN BIRD 5012-PL-PC-SAM-R-NP-MPR 35 SHRUB ROTOR, 12" POP-UP, PLASTIC RISER, WITH FLOW SHUT-OFF DEVICE. MATCHED PRECIPITATION ROTOR (MPR NOZZLE), ARC AND RADIUS AS PER SYMBOL. 25 FT=RED, 30 FT=GREEN, 35FT=BEIGE. WITH CHECK VALVE, NON-POTABLE PURPLE CAP, AND IN-STEM PRESSURE REGULATOR.	18	45		35'

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	RAIN BIRD XCZ-100-PRB-R WIDE FLOW DRIP CONTROL KIT FOR COMMERCIAL APPLICATIONS. PURPLE CAP DESIGNATES FOR RECLAIMED WATER, NON-POTABLE USE. 1" PESBR VALVE AND 1" PRESSURE REGULATING 40PSI BASKET FILTER. 0.3-20 GPM.	1
	PIPE TRANSITION POINT ABOVE GRADE PIPE TRANSITION POINT FROM PVC LATERAL TO DRIP TUBING WITH RISER TO ABOVE GRADE INSTALLATION.	1
0.5 1.0 2.0	RAIN BIRD XBCVT-PC SINGLE OUTLET, PRESSURE COMPENSATING DRIP EMITTERS. FLOW RATES OF 0.5 GPH=BLUE, 1.0 GPH=BLACK, AND 2.0 GPH=RED. COMES WITH A 1/2IN. FPT INLET X BARB OUTLET. W/ CHECK VALVE.	45
	AREA TO RECEIVE DRIP EMITTERS RAIN BIRD XB-PC SINGLE OUTLET, PRESSURE COMPENSATING DRIP EMITTERS. FLOW RATES OF 0.5 GPH=BLUE, 1.0 GPH=BLACK, AND 2.0 GPH=RED. COMES WITH A SELF-PIERCING BARB INLET X BARB OUTLET. Emitter Notes: 0.5 GPH emitters (1 assigned to each 1 gal plant) 1.0 GPH emitters (1 assigned to each 5 gal plant) 1.0 GPH emitters (3 assigned to each 15 GAL plant)	6,007 S.F.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	RAIN BIRD PESBR-PRS-D 1", 1-1/2", 2" DURABLE CHLORINE-RESISTANT VALVES FOR RECLAIMED WATER APPLICATIONS. WITH SCRUBBER MECHANISM TECHNOLOGY. PURPLE FLOW CONTROL HANDLE, AND PRESSURE REGULATOR MODULE.	15
	NELSON SIGNATURE 7645 1" BRASS QUICK-COUPLING VALVE, WITH CORROSION-RESISTANT STAINLESS STEEL SPRING, LOCKING NON-POTABLE PURPLE RUBBER COVER, AND 1-PIECE BODY.	5
	NIBCO T-113 CLASS 125 BRONZE GATE SHUT OFF VALVE WITH WHEEL HANDLE, SAME SIZE AS MAINLINE PIPE DIAMETER AT VALVE LOCATION. SIZE RANGE - 1/4" - 3"	5
MV	GRISWOLD 2000L EPOXY COATED 2" 1"-3" SOLENOID, NORMALLY CLOSED REMOTE CONTROL VALVE WITH PURPLE HANDLE FOR RECLAIMED WATER. CAST IRON AND BRONZE MATERIAL. NPT END CONNECTION.	1

	RAIN BIRD PSI-H40X-100 PRESSURE REGULATION: 40 PSI, FLOW RANGE: 0.5 GPM TO 35 GPM, INLET/OUTLET SIZE: 1" FEMALE NPT X 1" FEMALE NPT	2
BF	FEBCO 825Y 2" REDUCED PRESSURE BACKFLOW PREVENTER	1
C	CALSENSE CS3000 WITH GR STUBBY AND 5-YEAR DATA PLAN	1
FS	CREATIVE SENSOR TECHNOLOGY FSI-T15-001 1.5" (40MM) PVC TEE TYPE FLOW SENSOR W/SOCKET ENDS, CUSTOM MOUNTING TEE AND ULTRA LIGHTWEIGHT IMPELLER ENHANCES LOW FLOW MEASUREMENT. 2 WIRE DIGITAL OUTPUT COMPATIBLE W/ALL IRRIGATION CONTROLLERS. FLOW RANGE 1.8-108 GPM.	1
M	WATER METER 2" STATIC PSI IS AN ASSUMED READING FOR PRELIMINARY PURPOSES. SHALL BE CONFIRMED PRIOR TO CONSTRUCTION DOCUMENTATION.	1
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40-NP	5,010 L.F.
	IRRIGATION MAINLINE: PVC SCHEDULE 40-NP	723.6 L.F.

Sustainable Landesign

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION
	7.1.22	ALL		60% SUBMITTAL – NOT FOR CONSTRUCTION
	10.28.22	ALL		90% SUBMITTAL – NOT FOR CONSTRUCTION
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AS-BUILT:

REF. DWG. X-XXXX DWG. X-XXXX
REF. DWG. X-XXXX

DESIGNED BY: M.A.
DRAWN BY: P.L.
DESIGN CHECK BY:
DRAFTING CHECK BY:

LANDSCAPE ARCHITECT ★ CLIO ANDERSON ★ REGISTERED ★ STATE OF CALIFORNIA ★ Signature Approval Box Date

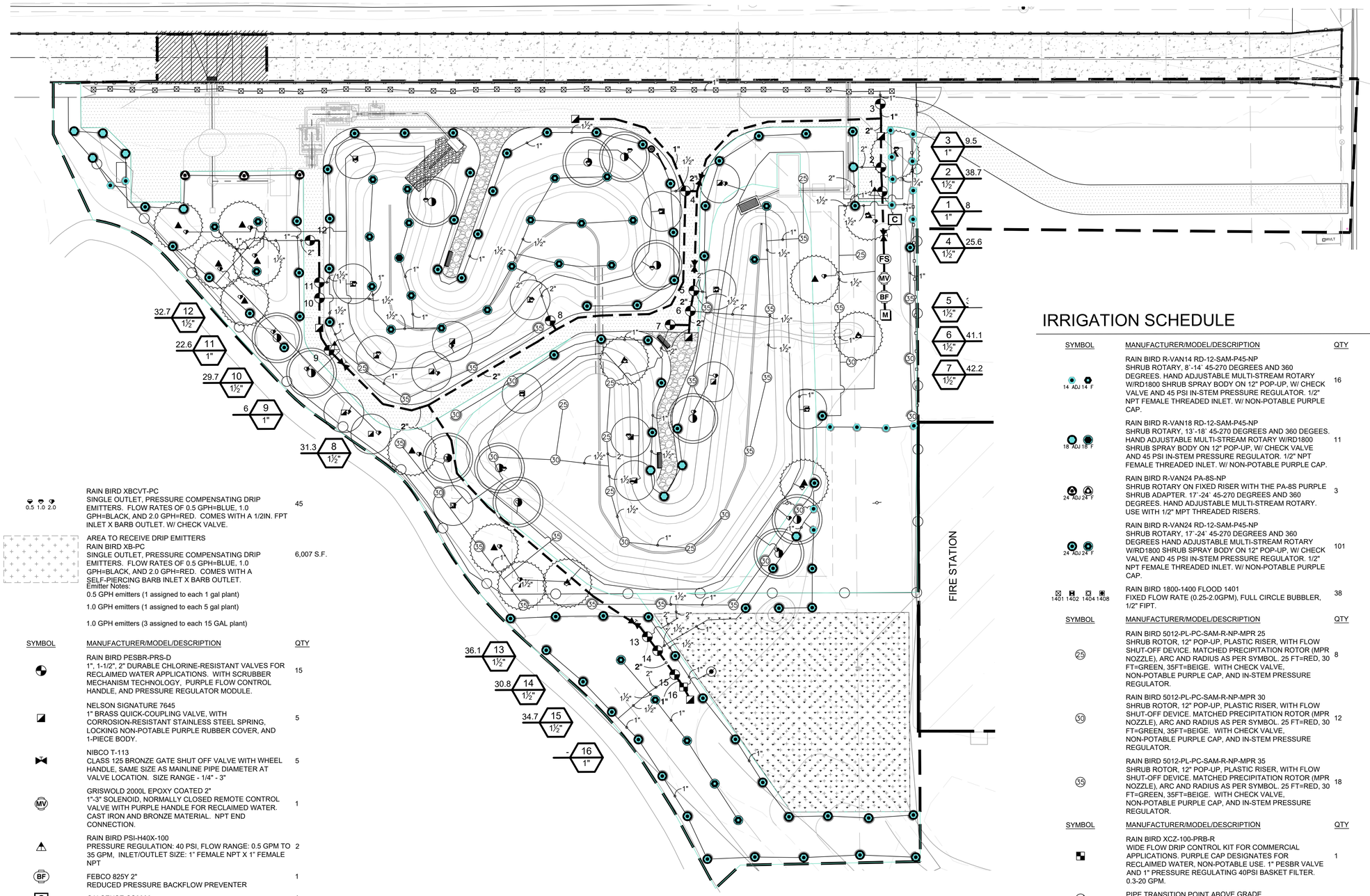
SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
IRRIGATION PLAN

GRAPHIC SCALE 0 20 40 60

PAGE X.X.X.
FIELD BOOK X.X.X.

JOB NO. PWXXXX XX
NO. R- XXXX
SHEET 45 OF 70
DRAWING NO. L4

LAST SAVED BY: mauri
PLOT DATE: May. 10, 23 SAVED PATH: C:\Users\mauri\OneDrive\Documents\Sustainable Landesign\Projects\TI - Skylinks Golf Course\CAD\100 Percent 5-9-23



0.5 1.0 2.0	RAIN BIRD XBCVT-PC SINGLE OUTLET, PRESSURE COMPENSATING DRIP EMITTERS. FLOW RATES OF 0.5 GPH=BLUE, 1.0 GPH=BLACK, AND 2.0 GPH=RED. COMES WITH A 1/2IN. FPT INLET X BARB OUTLET. W/ CHECK VALVE.	45
	AREA TO RECEIVE DRIP EMITTERS RAIN BIRD XB-PC SINGLE OUTLET, PRESSURE COMPENSATING DRIP EMITTERS. FLOW RATES OF 0.5 GPH=BLUE, 1.0 GPH=BLACK, AND 2.0 GPH=RED. COMES WITH A SELF-PIERCING BARB INLET X BARB OUTLET. Emitter Notes: 0.5 GPH emitters (1 assigned to each 1 gal plant) 1.0 GPH emitters (1 assigned to each 5 gal plant) 1.0 GPH emitters (3 assigned to each 15 GAL plant)	6,007 S.F.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	RAIN BIRD PESBR-PRS-D 1", 1-1/2", 2" DURABLE CHLORINE-RESISTANT VALVES FOR RECLAIMED WATER APPLICATIONS. WITH SCRUBBER MECHANISM TECHNOLOGY, PURPLE FLOW CONTROL HANDLE, AND PRESSURE REGULATOR MODULE.	15
	NELSON SIGNATURE 7645 1" BRASS QUICK-COUPLING VALVE, WITH CORROSION-RESISTANT STAINLESS STEEL SPRING, LOCKING NON-POTABLE PURPLE RUBBER COVER, AND 1-PIECE BODY.	5
	NIBCO T-113 CLASS 125 BRONZE GATE SHUT OFF VALVE WITH WHEEL HANDLE, SAME SIZE AS MAINLINE PIPE DIAMETER AT VALVE LOCATION. SIZE RANGE - 1/4" - 3"	5
MV	GRISWOLD 2000L EPOXY COATED 2" 1"-3" SOLENOID, NORMALLY CLOSED REMOTE CONTROL VALVE WITH PURPLE HANDLE FOR RECLAIMED WATER. CAST IRON AND BRONZE MATERIAL. NPT END CONNECTION.	1
	RAIN BIRD PSI-H40X-100 PRESSURE REGULATION: 40 PSI, FLOW RANGE: 0.5 GPM TO 35 GPM, INLET/OUTLET SIZE: 1" FEMALE NPT X 1" FEMALE NPT	2
BF	FEBCO 825Y 2" REDUCED PRESSURE BACKFLOW PREVENTER	1
C	CALSENSE CS3000 WITH GR STUBBY AND 5-YEAR DATA PLAN	1
FS	CREATIVE SENSOR TECHNOLOGY FSI-T15-001 1.5" (40MM) PVC TEE TYPE FLOW SENSOR W/SOCKET ENDS, CUSTOM MOUNTING TEE AND ULTRA LIGHTWEIGHT IMPELLER ENHANCES LOW FLOW MEASUREMENT. 2 WIRE DIGITAL OUTPUT COMPATIBLE W/ALL IRRIGATION CONTROLLERS. FLOW RANGE 1.8-108 GPM.	1
M	WATER METER 2" STATIC PSI IS AN ASSUMED READING FOR PRELIMINARY PURPOSES. SHALL BE CONFIRMED PRIOR TO CONSTRUCTION DOCUMENTATION.	1
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40-NP	5,010 L.F.
	IRRIGATION MAINLINE: PVC SCHEDULE 40-NP	723.6 L.F.

Valve Callout
Valve Number
Valve Flow
Valve Size

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
14 ADJ 14 F	RAIN BIRD R-VAN14 RD-12-SAM-P45-NP SHRUB ROTARY, 8'-14' 45-270 DEGREES AND 360 DEGREES. HAND ADJUSTABLE MULTI-STREAM ROTARY W/RD1800 SHRUB SPRAY BODY ON 12" POP-UP, W/ CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2" NPT FEMALE THREADED INLET. W/ NON-POTABLE PURPLE CAP.	16	45
18 ADJ 18 F	RAIN BIRD R-VAN18 RD-12-SAM-P45-NP SHRUB ROTARY, 13'-18' 45-270 DEGREES AND 360 DEGEES. HAND ADJUSTABLE MULTI-STREAM ROTARY W/RD1800 SHRUB SPRAY BODY ON 12" POP-UP, W/ CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2" NPT FEMALE THREADED INLET. W/ NON-POTABLE PURPLE CAP.	11	45
24 ADJ 24 F	RAIN BIRD R-VAN24 PA-8S-NP SHRUB ROTARY ON FIXED RISER WITH THE PA-8S PURPLE SHRUB ADAPTER. 17'-24' 45-270 DEGREES AND 360 DEGREES. HAND ADJUSTABLE MULTI-STREAM ROTARY. USE WITH 1/2" MPT THREADED RISERS.	3	45
24 ADJ 24 F	RAIN BIRD R-VAN24 RD-12-SAM-P45-NP SHRUB ROTARY, 17'-24' 45-270 DEGREES AND 360 DEGREES HAND ADJUSTABLE MULTI-STREAM ROTARY W/RD1800 SHRUB SPRAY BODY ON 12" POP-UP, W/ CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2" NPT FEMALE THREADED INLET. W/ NON-POTABLE PURPLE CAP.	101	45
1401 1402 1404 1408	RAIN BIRD 1800-1400 FLOOD 1401 FIXED FLOW RATE (0.25-2.0GPM), FULL CIRCLE BUBBLER, 1/2" FIPT.	38	30

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI	GPM	RADIUS
25	RAIN BIRD 5012-PL-PC-SAM-R-NP-MPR 25 SHRUB ROTOR, 12" POP-UP, PLASTIC RISER, WITH FLOW SHUT-OFF DEVICE. MATCHED PRECIPITATION ROTOR (MPR NOZZLE), ARC AND RADIUS AS PER SYMBOL. 25 FT=RED, 30 FT=GREEN, 35FT=BEIGE. WITH CHECK VALVE, NON-POTABLE PURPLE CAP, AND IN-STEM PRESSURE REGULATOR.	8	45		25'
30	RAIN BIRD 5012-PL-PC-SAM-R-NP-MPR 30 SHRUB ROTOR, 12" POP-UP, PLASTIC RISER, WITH FLOW SHUT-OFF DEVICE. MATCHED PRECIPITATION ROTOR (MPR NOZZLE), ARC AND RADIUS AS PER SYMBOL. 25 FT=RED, 30 FT=GREEN, 35FT=BEIGE. WITH CHECK VALVE, NON-POTABLE PURPLE CAP, AND IN-STEM PRESSURE REGULATOR.	12	45		30'
35	RAIN BIRD 5012-PL-PC-SAM-R-NP-MPR 35 SHRUB ROTOR, 12" POP-UP, PLASTIC RISER, WITH FLOW SHUT-OFF DEVICE. MATCHED PRECIPITATION ROTOR (MPR NOZZLE), ARC AND RADIUS AS PER SYMBOL. 25 FT=RED, 30 FT=GREEN, 35FT=BEIGE. WITH CHECK VALVE, NON-POTABLE PURPLE CAP, AND IN-STEM PRESSURE REGULATOR.	18	45		35'

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	RAIN BIRD XCZ-100-PRB-R WIDE FLOW DRIP CONTROL KIT FOR COMMERCIAL APPLICATIONS. PURPLE CAP DESIGNATES FOR RECLAIMED WATER, NON-POTABLE USE. 1" PESBR VALVE AND 1" PRESSURE REGULATING 40PSI BASKET FILTER. 0.3-20 GPM.	1
	PIPE TRANSITION POINT ABOVE GRADE PIPE TRANSITION POINT FROM PVC LATERAL TO DRIP TUBING WITH RISER TO ABOVE GRADE INSTALLATION.	1

SCALE: 1"= 20'

GRAPHIC SCALE 0 20 40 60

FN:L-4~L-5_Irrigation Plan
DATE: 4/20/23
XXX
PLOT SCALE: 1=1

Sustainable Landesign

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION
	7.1.22	ALL		60% SUBMITTAL - NOT FOR CONSTRUCTION
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AS-BUILT:

REF. DWG. X-XXXX DWG. X-XXXX
DWG. X-XXXX

DESIGNED BY: M.A.
DRAWN BY: P.L.
DESIGN CHECK BY:
DRAFTING CHECK BY:

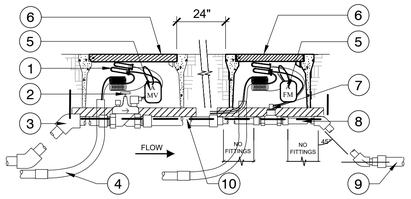
LANDSCAPE ARCHITECT VINCENT CITO AGUILERA 5161 STATE OF CALIFORNIA
Signature Approval Date

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
IRRIGATION PLAN

GRAPHIC SCALE 0 20 40 60
PAGE X.X.X.
FIELD BOOK X.X.X.

JOB NO. PWXXXX XX
NO. R- XXXX
SHEET 46 OF 70
DRAWING NO. L5

LAST SAVED BY: mauri
PLOT DATE: May. 10, 23 SAVED PATH: C:\Users\mauri\OneDrive\Documents\Sustainable Landesign\Projects\Yt - Skylinks Golf Course\CAD\100 Percent 5-9-23

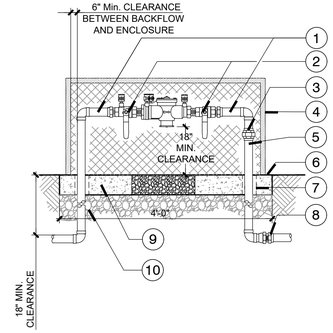


1. WIRE CONNECTORS: SPEARS DS-100 WTIH DS-300 SEALANT
2. EPOXY COATED MASTER VALVE. SIZE PER PAN. INSTALLATION PER DETAIL FOR RCV
3. MAINLINE SIZE PER IRRIGATION PLAN
4. 1.5" SCH. 80 PVC CONDUIT FOR 2-WIRE CABLE AND/OR SENSOR CABLE, TYP.
5. CHRISTY STD. VALVE I.D. TAG: LETTER TO CORRESPOND TO CONTROLLER. AFFIX TO CONTROL WIRE WITH CALBE TIE.
6. VALVE BOX: RAINBIRD MODEL VB-STD-H STANDARD RECTANGLAR VALVE BOX WITH LOCKING HEX BOLT OR APPROVED EQUAL WITH "MV" OR "FM" BRANDED ON LID, TYP.
7. FLOW METER. INSTALL PER MFR'S INSTRUCTIONS IN VALVE BOX SIMILAR TO RCV. SIZE PER PLAN
8. PIPE DIAMETER EQUAL TO FLOW METER SIZE, TYP.
9. SIZE AS SHOWN ON IRRIGATION PLANS
10. PROVIDE 3/4"X3/4"X16 GA VINYL COATED HEXAGONAL WIRE MESH UNDER EACH VALVE BOX, EXTENDING MIN. 4" BEYOND EACH EDGE. WRAP PORTION EXTENDING BEYOND BOX UP 90 DEG. FLUSH WITH BOX ENDGES. CUT HOLES FOR CONDUIT PENETRATIONS AS NEEDED.

NOTES:
1. CONNECT FLOW METER LEADS TO SENSOR DECODER OR SENSOR CABLE PER CONTROLLER MFR'S INSTRUCTIONS.
2. CONNECT MASTER VALVE LEADS TO SENSOR DECODER PER CONTROLLER MFR'S INSTRUCTIONS.
3. ALL WIRE CONNECTIONS SHALL BE MADE WITH A WIRE CONNECTOR PER IRRIGATION NOTES.

C MASTER VALVE FLOW METER

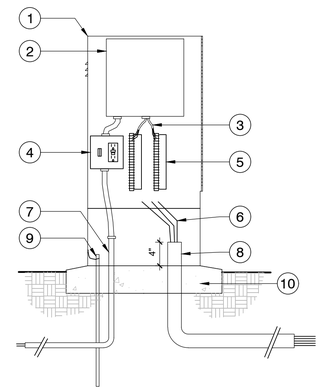
3/4" = 1'-0" P-SL-SK-151



1. NIPPLE
2. BALL VALVES-INCLUDED IN BACKFLOW ASSEMBLY FROM MANUFACTURER
3. RED BRASS UNION (1)
4. ENCLOSURE-STRONG BOX, REFER TO LEGEND
5. RED BRASS RISER
6. FINISH GRADE
7. PROVIDE SCH 80 SLEEVE THROUGH BASE
8. SCH. 80 PVC
9. 6" THICK 2500 PSI CONCRETE 60"x30"
10. 8" THICK 3/4" CRUSHED GRAVEL

B BACKFLOW DEVICE

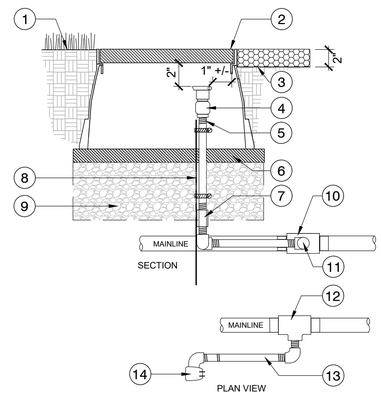
3/4" = 1'-0" P-SL-SK-23



1. ENCLOSURE AS SPECIFIED, SEE IRRIGATION SCHEDULE FOR MAKE AND MODEL
2. IRRIGATION CONTROLLER, SECURELY BOLT TO ENCLOSURE. INSTALL BACKUP BATTERIES AS PER MANUFACTURER'S SPECS.
3. 18 GA. WIRE HARNESS TO CONTROLLER
4. GFI RECEPTACLE AND CONTROLLER SWITCH
5. TERMINAL STRIPS, ARCHER BRAND #274-679. SIZE AS REQUIRED
6. 14 GA. WIRES FROM FIELD
7. 1" SCH. 40 CONDUIT WITH SWEEP ELL FOR 120 VOLT SOURCE
8. 2" DIA. PVC CONDUIT WITH LONG SWEEP ELL
9. 8 ft. COPPER GROUND AS PER LOCAL CODE
10. CONCRETE BASE: 6" MIN. THICKNESS, EXTEND 6" BEYOND OUTSIDE DIMENSIONS OF ENCLOSURE WITH SLOPE FOR DRAINAGE

A CALSENSE CS3000 ENCLOSURE

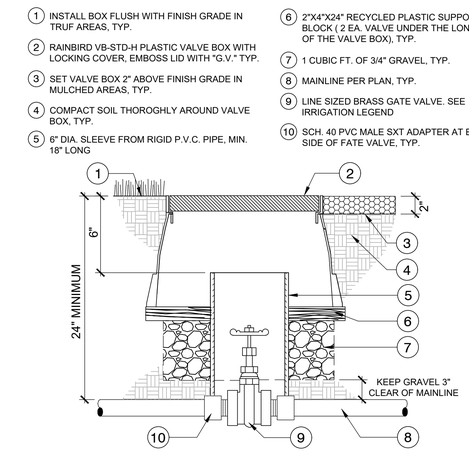
1" = 1'-0" P-SL-SK-09



1. INSTALL BOX FLUSH WITH FINISH GRADE IN TURF AREA, TYP.
2. SIGNATURE MODEL: 7645 STANDARD RECTANGULAR PLASTIC VALVE BOX WITH LOCKING HEX-BOLT COVER, EMBOSSED ON LID WITH "Q.C.V." PER LANDSCAPE CONSTRUCTION NOTES, TYP.
3. SET VALVE BOX 2" ABOVE FINISH GRADE IN MULCHED PLANTING AREAS, TYP.
4. 1" QUICK COUPLER, SEE SPECIFICATIONS.
5. 1" DIA. X 12" LONG SCHEDULE 80 PVC RISER
6. 2"X4"X24" RECYCLED PLASTIC SUPPORT BLOCKS - ON EACH SIDE UNDER LONG AXIS OF VALVE BOX, TYP.
7. 1" SCH.80 PVC THREADED COUPLING
8. #4 REBAR STAKE - LENGTH MIN. 24" SECURE TO QCV RISER WITH (2) 3/4" STAINLESS STEEL HOSE CLAMPS, TYP.
9. 1 CU. FT. OF 3/4" CRUSHED GRAVEL
10. TEE OR ELL AS REQUIRED
11. SWING JOINT - SEE PLAN BELOW
12. SXSXT SCH.40 P.V.C. TEE
13. RAINBIRD TSJ-18 1" PRESSURE TYPE PVC SWING ASSEMBLY OR APPROVED EQUAL
14. 1" QUICK COUPLER

F QUICK COUPLER (PLASTIC VALVE BOX)

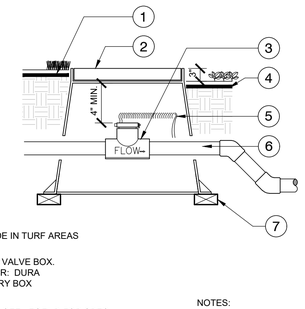
3/4" = 1'-0" P-SL-SK-152



1. INSTALL BOX FLUSH WITH FINISH GRADE IN TRUF AREAS, TYP.
2. RAINBIRD VB-STD-H PLASTIC VALVE BOX WITH LOCKING COVER, EMBOSS LID WITH "G.V." TYP.
3. SET VALVE BOX 2" ABOVE FINISH GRADE IN MULCHED AREAS, TYP.
4. COMPACT SOIL THOROGHLY AROUND VALVE BOX, TYP.
5. 6" DIA. SLEEVE FROM RIGID P.V.C. PIPE, MIN. 18" LONG
6. 2"X4"X24" RECYCLED PLASTIC SUPPORT BLOCK (2 EA. VALVE UNDER THE LONG AXIS OF THE VALVE BOX), TYP.
7. 1 CUBIC FT. OF 3/4" GRAVEL, TYP.
8. MAINLINE PER PLAN, TYP.
9. LINE SIZED BRASS GATE VALVE. SEE IRRIGATION LEGEND
10. SCH. 40 PVC MALE SXT ADAPTER AT EACH SIDE OF FATE VALVE, TYP.

E GATE VALVE

3/4" = 1'-0" P-SL-SK-149

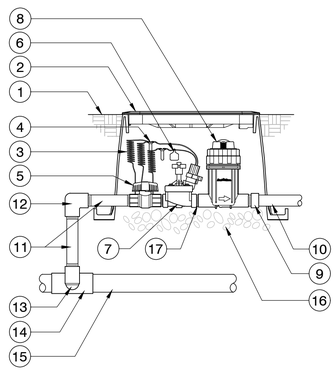


1. FINISHED GRADE IN TURF AREAS
2. RECTANGULAR VALVE BOX. MANUFACTURER: DURA MODEL: THE DRY BOX
3. FLOW SENSOR, SEE LEGEND FOR SPEC.
4. FINISHED GRADE IN SHRUB AREAS
5. 24" WIRE LOOP
6. PVC MAINLINE PIPE PER SPEC.
7. BRICK SUPPORTS

NOTES:
1. INSTALL FLOW SENSOR AS PER THE MANUFACTURER'S RECOMMENDATIONS, WIRE TO IRRIGATION CONTROLLER.
2. US 45° ELLS TO ACHIEVE MAINLINE DEPTH ON THE DOWN-STREAM SIDE OF THE FLOW SENSOR.
3. REFER TO DETAIL

D FLOW SENSOR

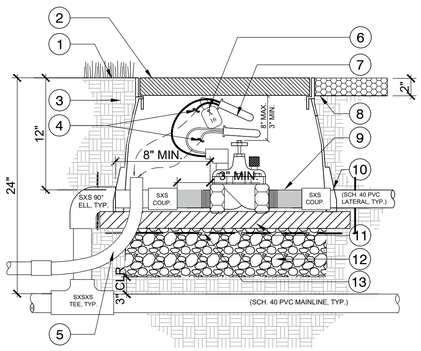
NTS P-SL-SK-33



1. FINISH GRADE/TOP OF MULCH
2. VALVE BOX WITH COVER: RAIN BIRD VB-STD NOTE: OR APPROVED EQUAL
3. 30-INCH LINEAR LENGTH OF WIRE, COILED
4. WATERPROOF CONNECTION: SPEARS DS-100 WITH DS-300 SEALANT
5. 1-INCH BALL VALVE (INCLUDED WITH THE DRIP ZONE KIT)
6. CHRISTIES I.D. TAG
7. RMOTE CONTROL VALVE: RAINBIRD PESB (INCLUDED WITH THE DROP ZONE KIT)
8. PRESSURE REGULATOR QUICK CHECK BASKET FILTER: RAIN BIRD PRB-QKCHK-100 (INCLUDED WITH THE DRIP ZONE KIT)
9. PVC SCH 40 FEMALE ADAPTER
10. LATERAL PIPE
11. SCH 80 NIPPLE (LENGTH AS REQUIRED)
12. PVC SCH 40 ELL
13. PVC SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND PVC SCH 40 ELL
14. PVC SCH 40 TEE OR ELL
15. MAINLINE PIPE
16. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
17. PVC SCH 80 NIPPLE, CLOSE (INCLUDED IN DRIP ZONE KIT)

H DRIP ZONE REMOTE CONTROL VALVE

NTS P-SL-SK-03



1. INSTALL BOX FLUSH WITH FINISH GRADE IN TURF AREAS, TYP
2. RAINBIRD VB-STD-H PLASTIC VALVE BOX WITH LOCKING COVER. BRAND "R.C.V." AND STATION NUMBER ON LID, TYP.
3. COMPACT SOIL THOROGHLY AROUND VALVE BOX, TYP.
4. CONTROL WIRE TO DECODER, TYP. SEE 2-WIRE SYSTEM LAYOUT DETAIL
5. 1/2" SCH. 80 PVC CONDUIT FOR CONTROL WIRE TO DECODER, TYP. PROVIDE INDIVIDUAL CONDUIT FOR EACH VALVE.
6. CHRISTY STD. VALVE I.D. TAG -- NO. AND LETTER TO CORRESPOND TO CONTROLLER AND VALVE NUMBER. AFFIX TO CONTROL WIRE WITH PLASTIC CABLE TIE, TYP.
7. WIRE CONNECTORS: SPEARS DS-100 WITH DS-300 SEALANT
8. SET VALVE BOX 2" ABOVE FINISH GRADE IN MULCHED PLANTING AREAS, TYP.
9. SCH.80 PVC MALE NIPPLE @ EACH SIDE OF VALVE - CUT OFF OPPOSING END AND GLUE TO SLIP COUPLING, TYP.
10. REMOVE BOX KNOCKOUTS, 1" CLR OF PIPE, TYP.
11. 2" x 4" x 24" PLASTIC LUMBER SUPPORT BLOCKS UNDER LONG AXIS OF VALVE BOX - EACH SIDE, TYP.
12. 1 CUBIC FOOT OF 3/4" CRUSHED GRAVEL, TYP. KEEP 3" CLEAR OF MAINLINE, TYP.
13. PROVIDE CONTINUOUS SHEET OF 3/4" X 3/4" X 16 GA VINYL COATED WIRE MESH UNDER ENTIRE MANIFOLD, EXTENDING MIN. 4" BEYOND EDGE OF EACH VALVE BOX. WRAP PORTION EXTENDING BEYOND BOX UP 90 DEG. FLUSH WITH BOX EDGES. CUT HOLES FOR CONDUIT PENETRATIONS AS NEEDED.

NOTES: 1.SEE APPLICABLE DETAILS FOR 2-WIRE DECODER AND CABLE INSTALLATION

G RCV-2WIRE

3/4" = 1'-0" P-SL-SK-153

No.	DATE	SHEET	APPROVAL	DESCRIPTION
	7.1.22	ALL		60% SUBMITTAL – NOT FOR CONSTRUCTION
	10.28.22	ALL		90% SUBMITTAL – NOT FOR CONSTRUCTION
	4.28.23	ALL		100% SUBMITTAL – NOT FOR CONSTRUCTION

AS-BUILT: REF. DWG. X-XXXX DWG. X-XXXX DWG. X-XXXX

DESIGNED BY: M.A.
DRAWN BY: P.L.
DESIGN CHECK BY:
DRAFTING CHECK BY:

LANDSCAPE ARCHITECT CLIO ANDERSON 6131 STATE OF CALIFORNIA Signature Approval Date

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
IRRIGATION DETAILS

GRAPHIC SCALE 0 20 40 60
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FIELD BOOK X.X.X.

JOB NO. PWXXXX XX
NO. R- XXXX
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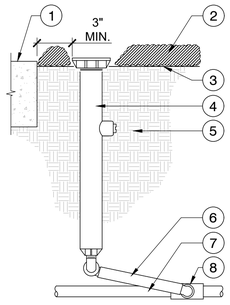
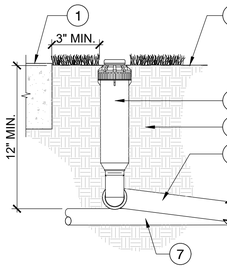


1. ADJACENT PAVING, CUB OR MOW STRIP, TYP.
2. MULCH LAYER (IF PRESENT). CLEAR MULCH AWAY FROM TOP OF HEAD, TYP.
3. FINISH GRADE (TOP OF SOIL), TYP.
4. POP-UP SPRAY HEAD BODY W/NOZZLE AS SPECIFIED, TYP.
5. COMPACT SOIL AROUND EACH HEAD TO PREVENT SETTLING, TYP.
6. RAINBIRD MODEEL SA 6050 6" SWING JOINT ASSEMBLY OR APPROVED EQUAL, TYP.
7. LATERAL LINE PIPE, TYP.
8. SCH. 40 PVC TEE OR ELL, TYP.

NOTES:
1. PLACE ALL HEADS 1/4" ABOVE FINISH GRADE OR AS NEEDED TO ACCOUNT FOR MULCH AT INITIAL INSTALLATION. SET HEADS 3" AWAY FROM WALKS, CURBS, OR MOW STRIPS.
2. INSTALL ALL HEADS PERPENDICULAR TO FINISH GRADE.
3. THOROUGHLY FLUSH ALL LATERAL LINE PIPES TO REMOVE DIRT AND DEBRIS BEFORE INSTALLATION OF NOZZLES.
4. ADJUST ALL HEADS TO PROPER ARC AND RADIUS AS NECESSARY TO ACHIEVE PROPER COVERAGE AND UNIFORMITY. IF PROPER COVERAGE AND UNIFORMITY IS NOT ACHIEVED WITH THE SPECIFIED NOZZLE, CONTRACTOR SHALL CHANGE NOZZLE AS NEEDED UNTIL DESIRED PERFORMANCE IS ACHIEVED.

K SPRAY HEAD

3/4" = 1'-0" P-SL-SK-157

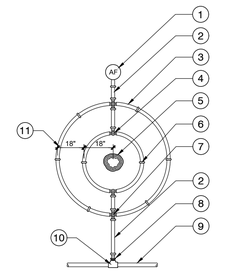


1. ADJACENT PAVING, CURB OR MOW STRIP, TYP.
2. FINISH GRADE, TYP.
3. GEAR-DRIVEN ROTARY HEAD W/NOZZLE AS SPECIFIED, TYP.
4. COMPACT SOIL AROUND EACH HEAD TO STABILIZE ALIGNMENT AND ORIENTATION, TYP.
5. MANUFACTURED SWING JOINT ASSEMBLY AS FOLLOW: 1" INLET HEADS: RAINBIRD TSJ-12 (OR APPROVED EQUAL). 3/4" INLET HEADS: RAINBIRD TSJ-12075 (OR APPROVED EQUAL).
6. SCH. 40 PVC TEE OR ELL, TYP.
7. PVC LATERAL LINE PIPE, TYP.

NOTES:
1. PLACE ALL HEADS 1/4" ABOVE FINISH GRADE OR AS NEEDED TO ACCOUNT FOR MULCH AT INITIAL INSTALLATION. SET HEADS 3" AWAY FROM WALKS, CURBS, OR MOW STRIPS.
2. INSTALL ALL HEADS PERPENDICULAR TO FINISH GRADE.
3. THOROUGHLY FLUSH ALL LATERAL LINE PIPES TO REMOVE DIRT AND DEBRIS BEFORE INSTALLATION OF NOZZLES.
4. ADJUST ALL HEADS TO PROPER ARC AND RADIUS AS NECESSARY TO ACHIEVE PROPER COVERAGE AND UNIFORMITY. IF PROPER COVERAGE AND UNIFORMITY IS NOT ACHIEVED WITH THE SPECIFIED NOZZLE, CONTRACTOR SHALL CHANGE NOZZLE AS NEEDED IN CONSULTATION WITH LANDSCAPE ARCHITECT UNTIL DESIRED PERFORMANCE IS ACHIEVED.

J ROTOR HEAD

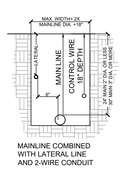
3/4" = 1'-0" P-SL-SK-156



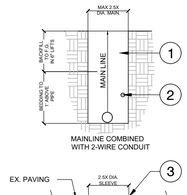
1. FLUSH VALVE, REFER TO SCHEDULE
2. 12MM BLANK TUBING EXHAUST HEADER
3. DRIPLINE, REFER TO SCHEDULE
4. INSERT TEE
5. TREE TRUNK
6. ROUND HEAD SOIL STAPLE
7. INSERT CROSS
8. 1/2" MALE ADAPTER
9. LATERAL PIPE
10. SCH.40 LATERAL LINE SIZE SLIP X 1/2" FEMALE THREADED TEE
11. DRIPLINE SPACING

I DRIPLINE AT TREES

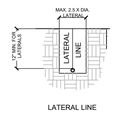
3/4" = 1'-0" P-SL-SK-163



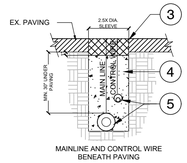
MAINLINE COMBINED WITH LATERAL LINE AND 2-WIRE CONDUIT



MAINLINE COMBINED WITH 2-WIRE CONDUIT



LATERAL LINE



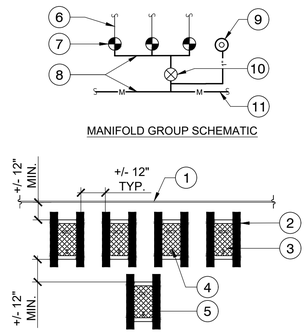
MAINLINE AND CONTROL WIRE BENEATH PAVING

1. BACKFILL PER APPROVED SOILS REPORT AND LANDSCAPE CONSTRUCTION NOTES FOR PIPELINE INSTALLATION, GENERAL
2. POSITION CONTROL WIRE CONDUIT AT 18" DEEP, TYP.
3. FOR EXISTING PAVING: SAW-CUT AND REMOVE. FOR REPAIR MATCH TYPE AND GRADE OF EX. PAVING
4. 2 SACK SLURRY BACKFILL
5. MAINLINE AND CONTROL WIRES, EACH IN SCH.40 PVC SLEEVE: TWO PIPE SIZES LARGER THAN PIPE/CONDUIT SIZE

NOTE:
1. PIPE AND CONTROL WIRE CROSSING UNDER PAVING OR WALKWAY OVER 8' WIDE SHALL BE SLEEVED AS INDICATED ABOVE.
2. PIPE BEDDING AND BACKFILL SHALL BE PER APPROVED SOILS REPORT AND LANDSCAPE CONSTRUCTION NOTES, PIPELINE INSTALLATION GENERAL.

O IRRIGATION TRENCHING-2WIRE

3/4" = 1'-0" P-SL-SK-150



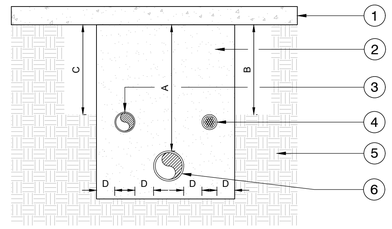
MANIFOLD GROUP SCHEMATIC

1. EDGE OF WALK, CURB, WALL, ECT.
2. 2"X4"X24" RECYCLED PLASTIC SUPPORT BLOCK UNDER THE LONG AXIS OF THE VALVE BOX, EACH SIDE, TYP.
3. QUICK COUPLING VALVE, TYP. SEE DETAIL.
4. REMOTE CONTROL VALVE, TYP. SEE DETAIL.
5. GATE VALVE, TYP. SEE DETAIL.
6. LATERAL LINE, TYP.
7. REMOTE CONTROL VALVE, TYP.
8. PVC VALVE MANIFOLD: SIZE TO MATCH MAINLINE, TYP.
9. QUICK COUPLER PER DETAIL, TYP.
10. LINE SIZE GATE VALVE, TYP.
11. MAINLINE - SIZE PER PLAN

NOTES:
1. ALL VALVES SHALL BE INSTALLED IN A MANIFOLD GROUP SIMILAR TO THAT SHOWN IN ABOVE SCHEMATIC. SEE PLANS FOR NUMBER OF RCV/QCV FOR EACH MANIFOLD, TYP.
2. ALL BOXES SHALL BE SQUARE TO ONE ANOTHER AND TO THE EDGES OF ADJACENT FIXED OBJECTS WHERE PRESENT.

N VALVE BOX LAYOUT

3/4" = 1'-0" P-SL-SK-155

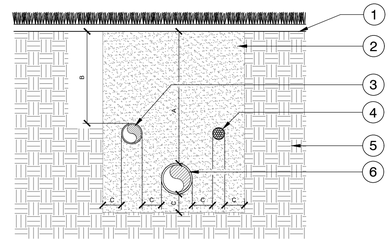


DIMENSION	A	B	C	D
1/4" TO 4" IN SIZE	36"	24"	24"	4"

1. PAVING
2. SAND BACKFILL
3. LATERAL LINES IN PVC SCHEDULE 40 SLEEVE
4. CONTROL WIRE IN PVC SCHEDULE 40 CONDUIT SLEEVE
5. UNDISTURBED SOIL
6. PRESSURE MAINLINE IN SCHEDULE 40 SLEEVE

M SLEEVE INSTALLATION

3/4" = 1'-0" P-SL-SK-117



DIMENSION	A	B	C
1/2" TO 2-1/2" IN SIZE	18"	12"	4"
3" TO 6" IN SIZE	24"		4"

1. FINISH GRADE
2. CLEAN COMPACTED BACKFILL
3. LATERAL PIPE, SEE SPECS.
4. CONTROL WIRES, SEE SPECS. MAINTAIN 6"" MIN. BETWEEN MAINLINE AND WIRE BUNDLE. CONDUIT THROUGHOUT.
5. UNDISTURBED SOIL
6. PRESSURE MAINLINE, SEE SPECS.

L PIPE INSTALLATION

NTS P-SL-SK-116

REVISIONS			
No.	DATE	SHEET	APPROVAL
	7.1.22	ALL	DESCRIPTION: 60% SUBMITTAL – NOT FOR CONSTRUCTION
	10.28.22	ALL	DESCRIPTION: 90% SUBMITTAL – NOT FOR CONSTRUCTION
	4.28.23	ALL	DESCRIPTION: 100% SUBMITTAL – NOT FOR CONSTRUCTION
	AS-BUILT:		REF. DWG. X-XXXX DWG. X-XXXX DWG. X-XXXX

DESIGNED BY: M.A.
DRAWN BY: P.L.
DESIGN CHECK BY:
DRAFTING CHECK BY:

LANDSCAPE ARCHITECT ★ VINCENT O. ALFIERI ★ 4/28/23 ★ REGISTERED ★ SIGNATURE ★ Approval Date ★ STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
IRRIGATION DETAILS

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Sustainable Landesign

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GENERAL PLANTING NOTES

1. FOR ADDITIONAL PLANTING INFORMATION NOT MENTIONED IN THESE GENERAL PLANTING NOTES, REFER TO SPECIFICATIONS.

2. ENSURE THAT FINISH GRADE ELEVATIONS OF PLANTING AREAS ARE SET AT PROPER ELEVATIONS RELATIVE TO PAVING FINISH SURFACE ELEVATIONS, UTILITY COVERS AND CURBS. THE FINAL FINISH GRADE SHALL BE UNIFORM, WITHOUT ABRUPT CHANGES IN GRADE, WITHIN ONE-TENTH OF A FOOT OF THE GRADES SHOWN ON THE PLAN AND APPROVED BY THE OWNER'S REPRESENTATIVE / PROJECT ENGINEER.

3. EXISTING SOIL: EXISTING SITE SOIL MAY BE USED FOR PLANTING AREAS, HOWEVER IT MUST BE AMENDED PER AGRONOMIC SOILS REPORT RECOMMENDATIONS . SOIL SAMPLES SHALL BE TAKEN AT TWO (2) LOCATIONS WITHIN THE SITE APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. TESTING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE CONDUCTED BY A QUALIFIED SOIL TESTING LABORATORY FOR SOIL FERTILITY, BACKFILL, AND SOIL PREPARATION RECOMMENDATIONS.

4. IMPORT SOIL: SHOULD IMPORT SOIL BE NEEDED TO BRING THE SITE TO SPECIFIED FINISH GRADES, SOIL SAMPLES SHALL BE TAKEN AT TWO (2) LOCATIONS WITHIN EACH IMPORT SITE. TESTING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND MUST SUBMIT AGRONOMIC SOIL TEST RESULTS OF IMPORT SOIL AND SOURCE LOCATIONS TO OWNER'S AUTHORIZED REPRESENTATIVE FOR APPROVAL PRIOR TO DELIVERING SOIL TO SITE. ENSURE IMPORT SOIL IS OF SANDY LOAM NATURE, CONTAINING NO TOXIC CHEMICALS OR ELEMENTS THAT MIGHT INHIBIT OR RETARD NORMAL PLANT GROWTH.

5. PLANT MATERIAL, I.E., TREES, SHRUBS, AND GROUND COVERS, MUST BE APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO INSTALLATION. PLANT MATERIALS INSTALLED WITHOUT APPROVAL MAY BE SUBJECT TO REMOVAL AND REPLACEMENT WITH RELATED COSTS INCURRED BY THE CONTRACTOR.

6. FINAL LOCATIONS OF PLANT MATERIALS ARE SUBJECT TO THE APPROVAL OF THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO INSTALLATION. PERFORM THE FOLLOWING PROCEDURES BEFORE BEGINNING PLANT PIT EXCAVATIONS:

   A. SHRUBS - PLACE ACTUAL PLANT CONTAINERS ON-SITE IN PRELIMINARY LOCATIONS.

   B. TREES - CHALK OR STAKE LOCATIONS BEFORE DIGGING HOLES.

7. NOTIFY THE OWNER'S AUTHORIZED REPRESENTATIVE AT LEAST SEVENTY-TWO (72) HOURS IN ADVANCE TO PERFORM A SPECIFIED SITE OBSERVATION TASK. INSUFFICIENT NOTIFICATION TIME GIVEN TO THE OWNER'S AUTHORIZED REPRESENTATIVE MAY REQUIRE THE SITE VISIT TO BE CANCELED, OR POSSIBLY MAKE THE CONTRACTOR RESPONSIBLE TO COMPENSATE THE OWNER FOR OVERTIME.

8. THE CONTRACTOR MUST FURNISH PLANT MATERIAL FREE OF PESTS, POOR CONDITION, OR DISEASE. PLANT MATERIAL MUST BE CERTIFIED PEST AND DISEASE FREE.

9. IF CONFLICTS ARISE BETWEEN THE ACTUAL SIZE OF PLANTING AREAS ON-SITE AND THOSE INDICATED ON DRAWINGS, CONTACT THE OWNER'S AUTHORIZED REPRESENTATIVE FOR RESOLUTION. FAILURE TO MAKE SUCH CONFLICTS KNOWN TO THE OWNER'S AUTHORIZED REPRESENTATIVE IN A TIMELY MANNER MAY RESULT IN THE CONTRACTOR'S LIABILITY TO RELOCATE PLANT MATERIAL OR INSTALL NEW PLANT MATERIAL AT THE CONTRACTOR'S EXPENSE.

10. TRIANGULARLY SPACE GROUND COVERS AND SHRUBS, UNLESS INDICATED OTHERWISE ON DRAWINGS, MAINTAIN HALF ON-CENTER SPACING WHEN ADJACENT TO PAVED AREAS, WALLS, OR OTHER FIXED EDGES.

11. MULCH SHRUB AND GROUND COVER AREAS WITH SHREDDED MULCH, AS PER SPECS.

12. DO NOT PLANT TREES ANY CLOSER THAN 3 FEET TO ANY FIXED EDGE, I.E. SIDEWALKS AND WALLS, UNLESS INDICATED OTHERWISE ON DRAWINGS.

13. PROVIDE A TREE STAKE AND MOCK-UP ON-SITE FOR THE OWNER'S AUTHORIZED REPRESENTATIVE'S REVIEW PRIOR TO PERFORMING TREE STAKING.

14. ENSURE THAT TREES AND SHRUBS ARE NOT PLANTED TOO DEEP RELATIVE TO FINISH GRADE. TREES PLANTED TOO DEEP WILL BE REPLANTED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER - REFER TO SPECIFICATIONS AND DETAILS FOR PROPER GRADE ELEVATIONS. ENSURE THAT NO EXISTING OR NEW PLANT MATERIAL OR ROOTS COME IN CONTACT WITH LIME STABILIZED BACKFILL.

15. INSTALL PLANT MATERIAL WITH ITS BEST SIDE FACING THE PREDOMINANT VIEW OF THE PUBLIC WHERE POSSIBLE.

16. DO NOT PLANT TREES WITHIN 10 FEET OF GAS, WATER OR SEWER LINES. CONTACT OWNER'S REPRESENTATIVE/PROJECT ENGINEER IF MEETING THIS REQUIREMENT DIFFERS FROM LOCATIONS INDICATED ON DRAWINGS.

17. REFER TO DRAWING DETAILS FOR REQUIRED PLANTING AND STAKING METHODS.

18. INSTALL LINEAR ROOT BARRIERS ("DEEP ROOT" OR APPROVED EQUAL) FOR ALL TREES WITHIN 5'-0" OF CONCRETE CURB, CONCRETE PAVING PER OWNER'S REPRESENTATIVE/PROJECT ENGINEER STANDARDS AND SPECS. REFER TO MANUFACTURER'S INSTALLATION SPECIFICATIONS.

19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH PLANTING OPERATIONS.

20. REFER TO THE SPECIFICATIONS FOR PLANTING REQUIREMENTS, MATERIALS AND EXECUTION.

21. ALL TREES SHALL BE TAGGED BY THE LANDSCAPE ARCHITECT AT A NURSERY OR NURSERIES SELECTED BY THE CONTRACTOR OR AT THE DISCRETION OF THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE. IF TAGGING IS REQUIRED AT MORE THAN THREE (3) NURSERIES, THE CONTRACTOR IS RESPONSIBLE FOR ADDITIONAL COST FOR THE LANDSCAPE ARCHITECT'S TIME. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT AT LEAST SEVENTY-TWO (72) HOURS IN ADVANCE OF THE TREE SELECTION DATE. THE OWNER'S AUTHORIZED REPRESENTATIVE MAY ACCOMPANY THE PROJECT LANDSCAPE ARCHITECT FOR THE TREE SELECTION.

22. PRE-SELECTED OR "LANDSCAPE ARCHITECT - TAGGED" PLANT MATERIAL MUST BE INSPECTED BY THE CONTRACTOR AND BE CERTIFIED PEST AND DISEASE FREE. IT IS THE CONTRACTOR'S OBLIGATION TO WARRANTY ANY AND ALL PLANT MATERIAL PER SPECIFICATIONS.

23. PRIOR TO PLANTING, IRRIGATION SYSTEM SHALL BE FULLY OPERATIONAL AND ALL PLANTING AREAS SHALL BE THOROUGHLY WATERED AS PER SPECIFICATIONS.

24. PLANT MATERIAL SHALL BE GROWN AND/OR ACCLIMATED UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE OF THE PROJECT SITE.

25. PLANT MATERIAL MAY BE REJECTED AT ANY TIME BY THE OWNER'S AUTHORIZED REPRESENTATIVE DUE TO HEALTH, FORM OR DAMAGE BEFORE OR AFTER PLANTING. WARRANTY ALL PLANT MATERIAL, SMALLER THAN 15 GALLON CONTAINER SIZE, TO BE IN HEALTHY AND FLOURISHING CONDITION OF ACTIVE GROWTH FOR A PERIOD OF (1) YEAR AFTER DATE OF PROJECT ACCEPTANCE. WARRANTY ALL PLANT MATERIAL 15 GAL. OR LARGER TO BE IN HEALTHY AND FLOURISHING CONDITION OF ACTIVE GROWTH FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF PROJECT ACCEPTANCE.

26. FERTILIZER TABLETS SHALL BE APPLIED PER THE PROJECT SPECIFICATIONS AND AGRONOMIC SOILS REPORT.

27. PLANT CENTERS SHALL NOT BE PLACED WITHIN EIGHTEEN (18") INCHES OF SPRINKLER HEADS.

28. FORM BERMED WATERING BASIN AROUND ALL TREES INSTALLED IN GROUND COVER AND SHRUB AREAS. FILL BASIN WITH MULCH AS SHOWN ON DETAILS AND AS SPECIFIED.

29. PLANT SPACING SHALL TAKE PRECEDENCE OVER IRRIGATION VALVE BOX, PIPE, AND OTHER EQUIPMENT LOCATIONS. VISIBLE IRRIGATION EQUIPMENT SHALL BE INSTALLED IN AN ORGANIZED MANNER PERPENDICULAR TO HARDSCAPE ELEMENTS.

30. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL AREAS IN A WEED AND DEBRIS-FREE CONDITION THROUGHOUT THE NINETY (90) DAY ESTABLISHMENT PERIOD.

31. QUANTITIES ARE PROVIDED AS A CONVENIENCE TO THE CONTRACTOR. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT A SUFFICIENT NUMBER OF PLANTS ARE PROVIDED TO ACHIEVE SPECIFIED SPACING WITHIN EACH PLANTING AREA.

PLANT SCHEDULE

TREES	BOTANICAL NAME	COMMON NAME	CONT	WUCOLS	FORM	QTY	REMARKS
	PLATANUS RACEMOSA	CALIFORNIA SYCAMORE	15 GAL	LOW	STANDARD	8	
	QUERCUS AGRIFOLIA	COAST LIVE OAK	15 GAL			9	
	SAMBUCUS MEXICANA	MEXICAN ELDERBERRY	15 GAL			11	

PALETTE #1: VEGETATIVE POND SPECIES	BOTANICAL NAME	COMMON NAME	CONT	WUCOLS	QTY
	ARTEMISIA DOUGLASIANA	MUGWORT	1 GAL		95
	CAREX PRAEGRACILIS	CALIFORNIA FIELD SEDGE	1 GAL		141
	JUNCUS EFFUSUS	COMMON RUSH	1 GAL		146
	JUNCUS PATENS	CALIFORNIA GRAY RUSH	1 GAL		141
	SOLIDAGO CALIFORNICA	CALIFORNIA GOLDENROD	1 GAL		41

PALETTE #2: UPPER SLOPE SPECIES	BOTANICAL NAME	COMMON NAME	CONT	WUCOLS	QTY
	ARTEMISIA CALIFORNICA	CALIFORNIA SAGEBRUSH	1 GAL		25
	BACCHARIS EMORYI	EMORY'S BACCHARIS	1 GAL		56
	BACCHARIS SALICIFOLIA	MULEFAT	1 GAL		52
	ENCELIA CALIFORNICA	CALIFORNIA ENCELIA	1 GAL		128
	ERIOGONUM FASCICULATUM	CALIFORNIA BUCKWHEAT	1 GAL		111
	LOTUS SCOPARIUS	CALIFORNIA DEER WEED	1 GAL		41
	MUHLENBERGIA RIGENS	DEER GRASS	1 GAL		129

PALETTE #3: MID/LOWER SLOPE SPECIES	BOTANICAL NAME	COMMON NAME	CONT	WUCOLS	QTY
	ROSA CALIFORNICA	CALIFORNIA WILD ROSE	1 GAL		91
	SALIX EXIGUA	COYOTE WILLOW	1 GAL		41

PALETTE #4: TERRACE SPECIES	BOTANICAL NAME	COMMON NAME	CONT	WUCOLS	QTY
	FRANGULA CALIFORNICA	COFFEEBERRY	15 GAL		8
	HETEROMELES ARBUTIFOLIA	TOYON	15 GAL		34
	PRUNUS ILICIFOLIA	HOLLYLEAF CHERRY	15 GAL		26

SHRUB AREAS	BOTANICAL NAME	COMMON NAME	CONT	WUCOLS	SPACING	QTY
	LEYMUS TRITICOIDES	WILD RYE	1 GAL		12" o.c.	21,770

GROUND COVERS	BOTANICAL NAME	COMMON NAME	CONT	WUCOLS	SPACING	QTY
	ANEMOPSIS CALIFORNICA	YERBA MANSA	1 GAL		18" o.c.	1,414

Sustainable Landesign

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION
	7.1.22	ALL		60% SUBMITTAL – NOT FOR CONSTRUCTION
	10.28.22	ALL		90% SUBMITTAL – NOT FOR CONSTRUCTION
	4.28.23	ALL		100% SUBMITTAL – NOT FOR CONSTRUCTION

AS-BUILT:

REF. DWG. X-XXXX DWG. X-XXXX
DWG. X-XXXX

DESIGNED BY: M.A.
DRAWN BY: P.L.
DESIGN CHECK BY:
DRAFTING CHECK BY:

LANDSCAPE ARCHITECT — CLIFFORD A. HOUSE — No. 4345 — Signature — Approval Box — Date — REGISTERED — STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
PLANTING SCHEDULE AND NOTES

GRAPHIC SCALE

PAGE X.X.X.

FIELD BOOK X.X.X.

JOB NO. PWXXXX XX

NO. R- XXXX

SHEET 49 OF 70

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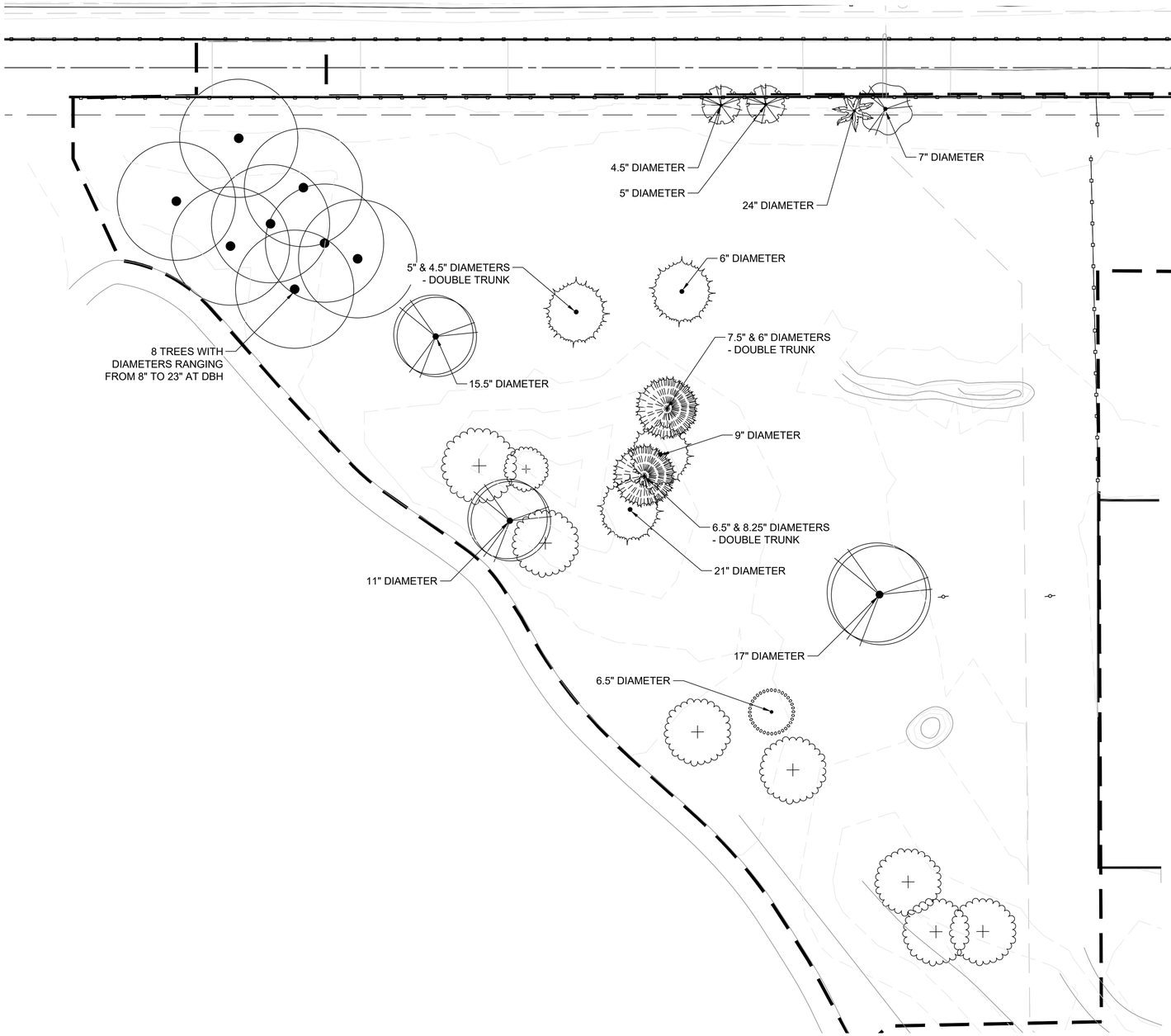

TREE REMOVAL LEGEND

TREES	BOTANICAL NAME	COMMON NAME	REMARKS
	SCHINUS POLYGAMUS	CHILEAN PEPPER TREE	TOTAL 8 TREES - RANGE FROM 8" -23" DIAMETE
	AFROCARPUS GRACILIOR	FERN PINE	1 TREE - 6.5" DIAMETER AT DBH
	EUCALYPTUS SIDEROXYLON 'ROSEA	RED FLOWERING IRONBARK	TOTAL 4 TREES (1 DOUBLE TRUNK) - SEE PLAN
	FICUS NITIDA	INDIAN LAUREL	1 TREE - 7" DIAMETER AT DBH
	JACARANDA MIMOSIFOLIA	JACARANDA	TOTAL 3 TREES - SEE PLAN FOR SIZES
	KOELREUTERIA PANICULATA	GOLDENRAIN TREE	TOTAL 2 TREES - SEE PLAN FOR SIZES
	PINUS HALEPENSIS	ALEPPO PINE	TOTAL 2 TREES - SEE PLAN FOR SIZES
	WASHINGTONIA ROBUSTA	MEXCIAN FAN PALM	1 TREE - 24" DIAMETER AT DBH
	MYOPORUM LAETUM	MYOPORUM	MEDIUM TO LARGE SHRUBS TO BE REMOVED

SCALE: 1"= 20'

GRAPHIC SCALE
0 20 40 60

FN:L-9-L-10_Tree Planting
DATE: 4/20/23
XXX
PLOT SCALE: 1=1

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DRAFTING CHECK BY:

LANDSCAPE ARCHITECT ★ WINOGRON ★ STATE OF CALIFORNIA
REGISTERED
Signature
Approval Date
Date

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
TREE REMOVAL PLAN

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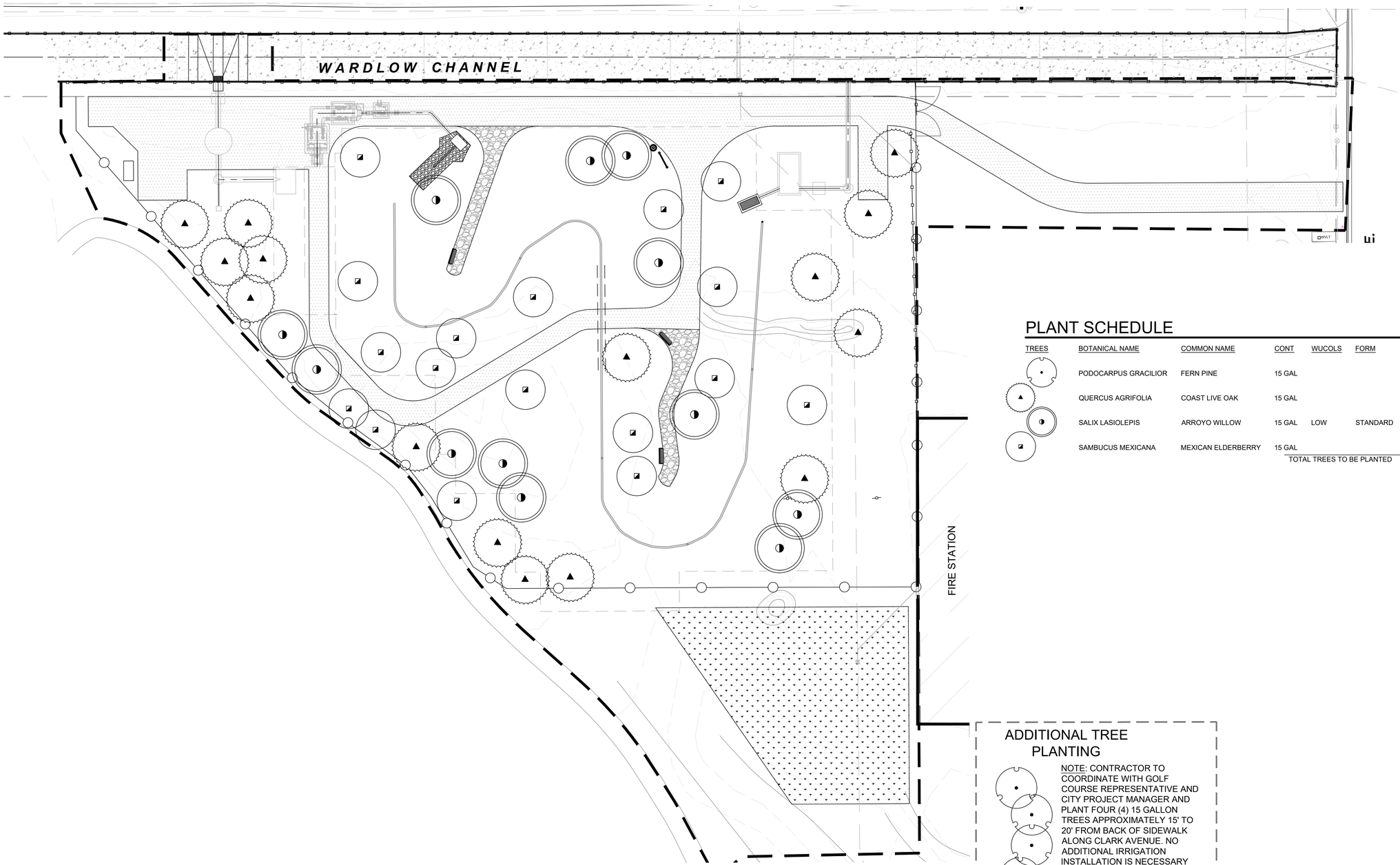

PLANT SCHEDULE

TREES	BOTANICAL NAME	COMMON NAME	CONT	WUCOLS	FORM	QTY
	PODOCARPUS GRACILIOR	FERN PINE	15 GAL			4
	QUERCUS AGRIFOLIA	COAST LIVE OAK	15 GAL			15
	SALIX LASIOLEPIS	ARROYO WILLOW	15 GAL	LOW	STANDARD	12
	SAMBUCUS MEXICANA	MEXICAN ELDERBERRY	15 GAL			17
					TOTAL TREES TO BE PLANTED	48

ADDITIONAL TREE PLANTING

NOTE: CONTRACTOR TO COORDINATE WITH GOLF COURSE REPRESENTATIVE AND CITY PROJECT MANAGER AND PLANT FOUR (4) 15 GALLON TREES APPROXIMATELY 15' TO 20' FROM BACK OF SIDEWALK ALONG CLARK AVENUE. NO ADDITIONAL IRRIGATION INSTALLATION IS NECESSARY FOR THESE TREES.

SCALE: 1"= 20'

GRAPHIC SCALE 0 20 40 60

FN:L-9-L-10_Tree Planting
DATE: 4/20/23
XXX
PLOT SCALE: 1=1

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DWG. X-XXXX

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Signature
Approval Box
Date

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
TREE PLANTING PLAN

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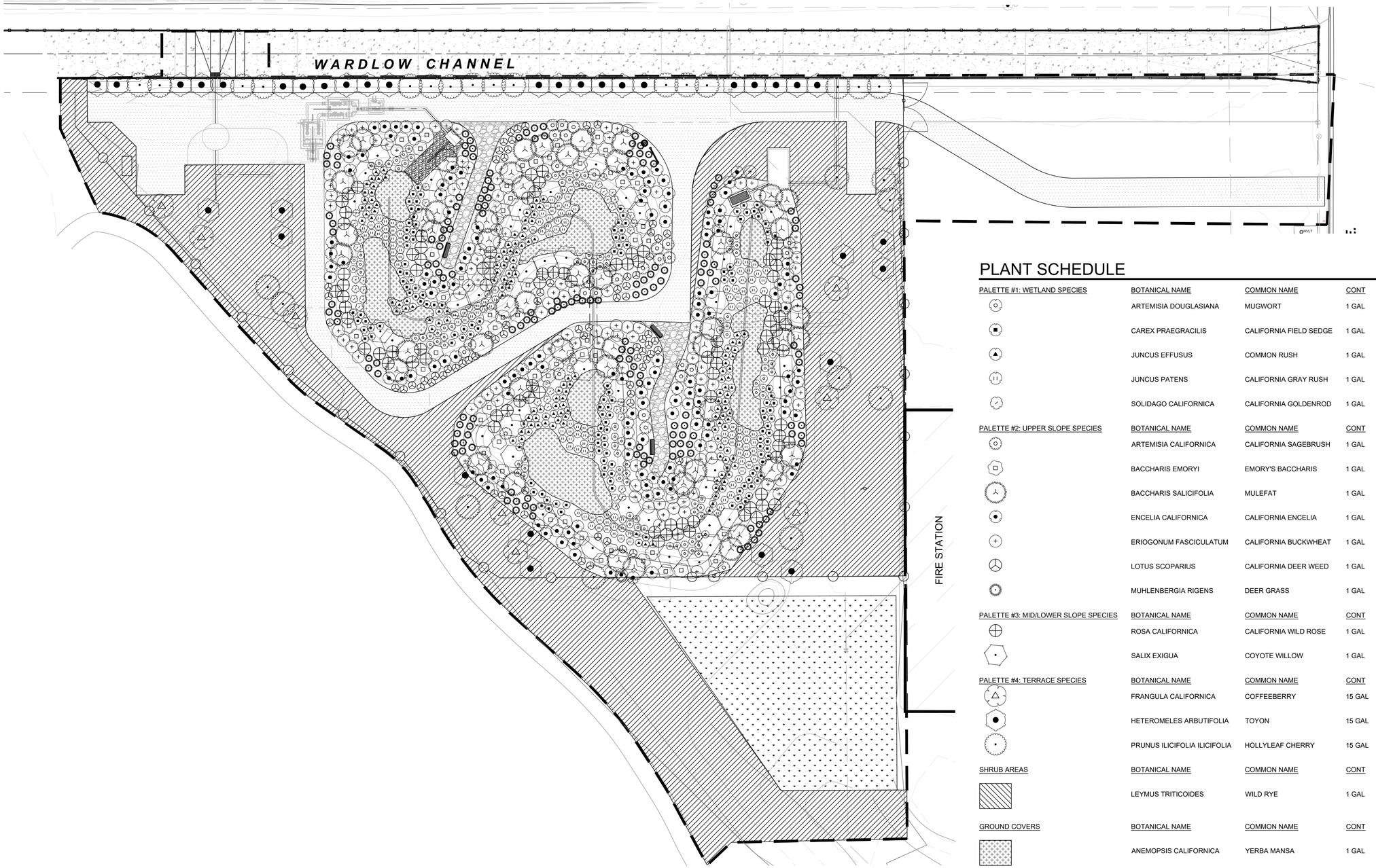

PLANT SCHEDULE

PALETTE #1: WETLAND SPECIES	BOTANICAL NAME	COMMON NAME	CONT	WUCOLS
	ARTEMISIA DOUGLASIANA	MUGWORT	1 GAL	
	CAREX PRAEGRACILIS	CALIFORNIA FIELD SEDGE	1 GAL	
	JUNCUS EFFUSUS	COMMON RUSH	1 GAL	
	JUNCUS PATENS	CALIFORNIA GRAY RUSH	1 GAL	
	SOLIDAGO CALIFORNICA	CALIFORNIA GOLDENROD	1 GAL	

PALETTE #2: UPPER SLOPE SPECIES	BOTANICAL NAME	COMMON NAME	CONT	WUCOLS
	ARTEMISIA CALIFORNICA	CALIFORNIA SAGEBRUSH	1 GAL	
	BACCHARIS EMORYI	EMORY'S BACCHARIS	1 GAL	
	BACCHARIS SALICIFOLIA	MULEFAT	1 GAL	
	ENCELIA CALIFORNICA	CALIFORNIA ENCELIA	1 GAL	
	ERIOGONUM FASCICULATUM	CALIFORNIA BUCKWHEAT	1 GAL	
	LOTUS SCOPARIUS	CALIFORNIA DEER WEED	1 GAL	
	MUHLENBERGIA RIGENS	DEER GRASS	1 GAL	

PALETTE #3: MID/LOWER SLOPE SPECIES	BOTANICAL NAME	COMMON NAME	CONT	WUCOLS
	ROSA CALIFORNICA	CALIFORNIA WILD ROSE	1 GAL	
	SALIX EXIGUA	COYOTE WILLOW	1 GAL	

PALETTE #4: TERRACE SPECIES	BOTANICAL NAME	COMMON NAME	CONT	WUCOLS
	FRANGULA CALIFORNICA	COFFEEBERRY	15 GAL	
	HETEROMELES ARBUTIFOLIA	TOYON	15 GAL	
	PRUNUS ILICIFOLIA ILICIFOLIA	HOLLYLEAF CHERRY	15 GAL	

SHRUB AREAS	BOTANICAL NAME	COMMON NAME	CONT	WUCOLS	SPA
	LEYMUS TRITICOIDES	WILD RYE	1 GAL		12" c

GROUND COVERS	BOTANICAL NAME	COMMON NAME	CONT	WUCOLS	SPA
	ANEMOPSIS CALIFORNICA	YERBA MANSA	1 GAL		18" c

SCALE: 1"= 20'

GRAPHIC SCALE
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FN:L-11_Shrub Planting
DATE: 4/20/23
XXX
PLOT SCALE: 1=1

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LANDSCAPE ARCHITECT CLIO ANDERSON No. 6134 REGISTERED STATE OF CALIFORNIA Signature Approval Box Date

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT

SHRUB PLANTING PLAN

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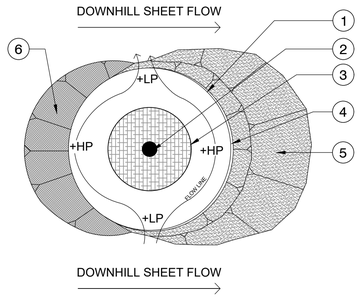
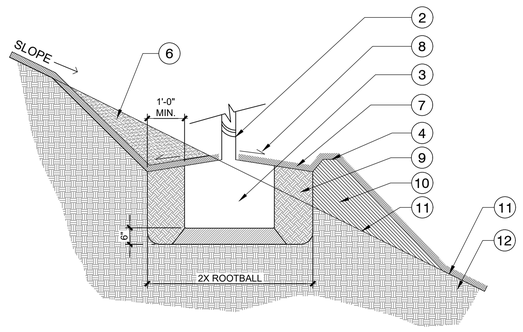


PLAN

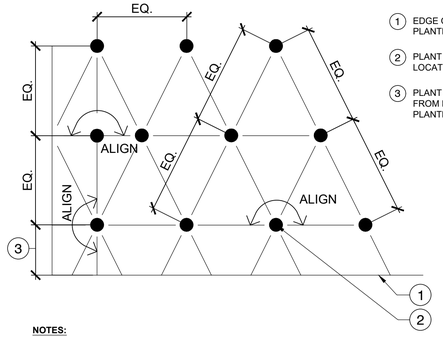
1. TREE PIT: 2X ROOTBALL DIAMETER CENTERED WITH TREE PIT
2. TREE TRUNK
3. ROOTBALL
4. WATER BASIN
5. BERM
6. CUT SLOPE
7. MULCH LAYER PER PLANTING SPECIFICATIONS
8. SLOPE SOIL AWAY FROM ROOT CROWN AT 2% MINIMUM
9. COMPACTED BACKFILL BASE
10. COMPACTED TOPSOIL. REFER TO DETAIL XX/00
11. EXISTING SLOPE
12. UNDISTURBED TOPSOIL



SECTION

NOTES:

1. KEEP MULCH 2" CLEAR OF TRUNK



1. EDGE OF PLANTER
2. PLANT LOCATION
3. PLANT SPACING FROM EDGE OF PLANTER

NOTES:

1. SET FINISH GRADE OF PLANTING AREA 2" BELOW FINISH SURFACE OF PAVING, CURB, OR HEADER
2. PLANTING AREA TO BE TILLED TO DEPTH OF 12" INCLUSIVE OF ALL SOIL AMENDMENTS AS SPECIFIED.
3. SEE PLANTING SCHEDULE FOR SPACING OF ALL SHRUBS AND GROUNDCOVERS
4. ALL SHRUBS/GROUNDCOVER TO BE PLANTED AT EQUAL SPACING (TRIANGULAR) UNLESS OTHERWISE INDICATED ON PLANS.

A TRIANGULAR SHRUB/ G.C. SPACING

1" = 1" P-SK-Ø1

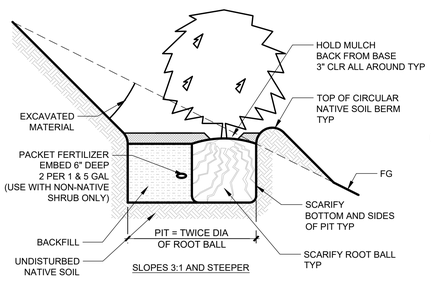
1. CONTAINER PLANT (CENTER IN PIT)
2. 3" MIN. DEPTH WATER BASIN
3. MULCH LAYER PER PLANTING SPECIFICATIONS
4. FINISH GRADE
5. AMENDED BACKFILL SOIL PER AGRONOMIC SOILS REPORT RECOMMENDATIONS
6. PLANT FERTILIZER TABLETS PER AGRONOMIC SOILS REPORT RECOMMENDATIONS
7. UNDISTURBED SOIL

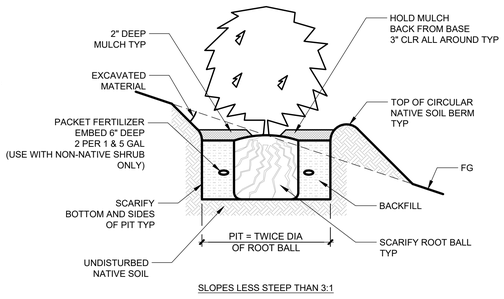
NOTES

1. SET TOP OF ROOTBALL 1/2" ABOVE FINISH GRADE AND SLOPE FOR DRAINAGE

D SHRUB & GROUNDCOVER PLANTING

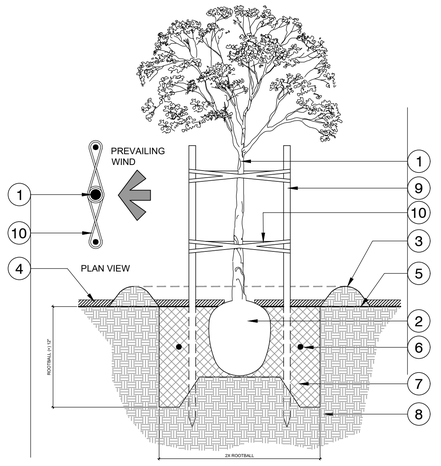
1" = 1'-Ø" P-SK-1Ø9





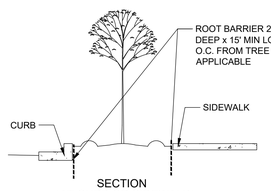
E SLOPE PLANTING

3/4" = 1'-0" P-SK-123



C TREE PLANTING

3/" = 1'-0"d



1. TREE TRUNK, PROTECT IN PLACE
2. TREE ROOTBALL, SET TOP OF ROOTBALL 2" ABOVE FINISH GRADE
3. BERM & WATER WELL, REMOVE BERM AFTER ESTABLISHMENT PERIOD
4. 2-3" LAYER OF BARK MULCH, REFER TO MULCH SPECIFICATION, KEEP MULCH 3" AWAY FROM TRUNK
5. FINISH GRADE
6. PLANT TABS, REFER TO PLANTING SPECIFICATIONS
7. AMENDED SOIL & BACKFILL, REFER TO SOILS REPORT, WATER THE PLANTING PIT PRIOR TO BACKFILL & COMPACT BACKFILL SOIL BELOW THE SHRUB
8. NATIVE SOIL
9. INSTALL 2" DIAMETER TREATED LODGEPOLE PINE TREE STAKES, REMOVE NURSERY STAKES, REMOVE LODGEPOLE STAKES AFTER 2 GROW SEASONS, CUT TOP OF STAKE 6" BELOW TREE CANOPY
10. BLACK RUBBER CINCH TIES, WRAP CINCH TIES @ TREE TRUNK, DO NOT USE NAILS / METAL WIRE @ TREE TRUNK

Sustainable Landesign

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AS-BUILT:

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DRAWN BY: P.L.
DESIGN CHECK BY:
DRAFTING CHECK BY:

LANDSCAPE ARCHITECT CLIO ANDERSON No. 6133 REGISTERED STATE OF CALIFORNIA
Signature
Approved Date

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
PLANTING DETIALS

GRAPHIC SCALE 0 20 40 60
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FIELD BOOK X.X.X.

JOB NO. PWXXXX XX
NO. R- XXXX
SHEET 53 OF 70
DRAWING NO. L12

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ELECTRICAL SYMBOLS - PLANS

SYMBOL	SYMBOL DESCRIPTION
	DUPLEX RECEPTACLE (WP, GFCI AS INDICATED)
	QUAD RECEPTACLE (WP, GFCI AS INDICATED)
J	JUNCTION BOX
$3	SWITCH (3 = 3-WAY SWITCH, 4 = 4-WAY SWITCH, ETC.)
a	LIGHTING LUMINAIRE CONTROLLED BY SWITCH a
a	LIGHTING LUMINAIRE CONTROLLED BY SWITCH a W/ EMERGENCY BATTERY PACK
	EMERGENCY LIGHT
	WALL MOUNTED LUMINAIRE
	EXIT LIGHT
	POLE MOUNTED LUMINAIRE
A / 150 — LUMINAIRE TYPE / LAMP WATTAGE	LUMINAIRE REFERENCE SEE LUMINAIRE SCHEDULE FOR DETAILS
P001	CONDUIT REFERENCE A = ANALOG SIGNAL C = CONTROL D = DATA LINK F = FIBER OPTIC P = POWER T = TELEPHONE
	CONDUIT OR DUCT BANK IN SLAB OR UNDERGROUND
	EXPOSED CONDUIT
GND	GROUNDING CONDUCTOR 30" BELOW GRADE
A-3	HOMERUN TO PANEL "A", CIRCUIT 3
	CONDUIT STUBBED AND CAPPED
	CONDUIT BENDS TOWARD OBSERVER
	CONDUIT BENDS AWAY FROM OBSERVER
J	FLEXIBLE CONDUIT CONNECTION (FROM COUPLING/STUB-UP OR JBOX)
	PANELBOARD
	DISCONNECT SWITCH
	COMBINATION STARTER & DISCONNECT SWITCH
	HANDHOLE OR PULL BOX
DS	DUCT SMOKE DETECTOR
	SMOKE DETECTOR
F	FIRE ALARM MANUAL PULL STATION
F	FIRE ALARM STROBE
	TELEPHONE OUTLET
	DATA OUTLET
	VOIP/DATA OUTLET
	CONDUIT SEAL
— F — F — F —	CONDUIT & WIRE FOR FIRE ALARM SYSTEM
— R — R — R —	CONDUIT & WIRE FOR ELECTRONIC KEY PAD TO PLC
KP	ELECTRONIC KEYPAD
FACP	FIRE ALARM CONTROL PANEL
	LOCAL CONTROL SWITCH
T	THERMOSTAT
IS	INTRUSION SWITCH
40	MOTOR (NUMBER INDICATES HORSEPOWER)
M	WALL MOUNTED OCCUPANCY SENSOR
M	CEILING MOUNTED OCCUPANCY SENSOR
D	WALL MOUNTED DIMMER
	GROUND WELL

ELECTRICAL SYMBOLS - SCHEMATIC DIAGRAMS

NORMALLY OPEN	NORMALLY CLOSED	SYMBOL DESCRIPTION
		CONTACT
		TIMED CONTACT, CONTACT ACTION REVERSES ON ENERGIZATION (ON DELAY)
		TIMED CONTACT, CONTACT ACTION REVERSES ON DE-ENERGIZATION (OFF DELAY)
		LEVEL SWITCH
		PRESSURE SWITCH
		TEMPERATURE SWITCH
		LIMIT SWITCH
		FLOW SWITCH
		PUSH BUTTON SINGLE CIRCUIT MOMENTARY CONTACT
HAND OFF AUTO XOO OXO OOX		SELECTOR SWITCH HOA: HAND-OFF-AUTO (HOA SHOWN IN HAND MODE) HO: HAND-OFF HOR: HAND-OFF-REMOTE R-O: REMOTE-OFF SEE SYMBOLE NOTE 2.
O/L		MOTOR OVERLOAD DEVICE CONTACTS
R		PILOT LIGHT A= AMBER, G= GREEN, R= RED, W= WHITE
CR1	AR1	CONTROL RELAY
TD1		TIME DELAY RELAY
M		MOTOR OR STARTER COIL
		SOLENOID OPERATED VALVE
ETM		ELAPSED TIME METER
		FUSE
		CONTROL POWER TRANSFORMER
		GROUND
		MOTOR SPACE HEATER
		THERMISTOR

SYMBOL NOTES

1. THIS DRAWING CONTAINS INDUSTRY STANDARD SYMBOLS. NOT ALL SYMBOLS SHOWN ARE USED ON THIS PROJECT.
2. FOR HOA SWITCHES, "XOO" INDICATES THAT THE TOP CONTACT IS CLOSED WHEN THE SWITCH IS SET TO HAND MODE, AND ALL OTHER SWITCH CONTACTS ARE OPEN; "OXO" INDICATES THAT THE MIDDLE CONTACT IS CLOSED WHEN THE SWITCH IS SET TO OFF MODE, AND ALL OTHER SWITCH CONTACTS ARE OPEN; "OOX" INDICATES THAT THE BOTTOM CONTACT IS CLOSED WHEN SWITCH IS IN AUTO MODE, ALL OTHER SWITCH CONTACTS ARE OPEN.

ANSI/IEEE C37.2 STANDARD DEVICE NUMBERS

THE FOLLOWING IS A LIST OF TYPICAL DEVICE NUMBERS. SEE ANSI/IEEE C37.2 FOR A COMPLETE LIST OF DEVICES.

11	MULTI-FUNCTION DEVICE
27	UNDERVOLTAGE RELAY
32	DIRECTIONAL POWER RELAY OR REVERSE POWER RELAY
37	UNDERCURRENT OR UNDERPOWER RELAY
42	RUNNING CIRCUIT BREAKER
47	PHASE SEQUENCE OR PHASE-BALANCE VOLTAGE RELAY
50	INSTANTANEOUS OVERCURRENT RELAY
51	AC INVERSE TIME OVERCURRENT RELAY
52	AC CIRCUIT BREAKER
55	POWER FACTOR RELAY
57	SHORT-CIRCUITING OR GROUNDING DEVICE
59	OVERVOLTAGE RELAY
67	AC DIRECTIONAL OVERCURRENT RELAY
86	LOCKOUT RELAY
87	DIFFERENTIAL PROTECTIVE RELAY

ELECTRICAL SYMBOLS - SINGLE LINE DIAGRAM

DEVICE	SYMBOL DESCRIPTION
	DRY TYPE TRANSFORMER
	IRON CORE TRANSFORMER
	POTENTIAL TRANSFORMER
	CURRENT TRANSFORMER
	FUSE
40	MOTOR, 40 HORSEPOWER
	GROUNDING ELECTRODE
600AF / 400AT	LOW VOLTAGE CIRCUIT BREAKER MCCB UON
52	MEDIUM VOLTAGE CIRCUIT BREAKER, DRAW-OUT TYPE SEE ANSI/IEEE C37.2 STANDARD DEVICE NUMBERS LIST THIS SHEET
VFD	VARIABLE FREQUENCY DRIVE
SSS	SOLID STATE STARTER (SOFT STARTER)
SPD	SURGE PROTECTION DEVICE
PQM	POWER QUALITY MONITOR
SST	SOLID STATE TRIP
MPR	MOTOR PROTECTION RELAY
	NON-FUSED DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	MOTOR OVERLOAD HEATER
	MAGNETIC MOTOR STARTER FVNR1 = FULL VOLTAGE NON-REVERSING, NEMA SIZE 1 RV2S2W = REDUCED VOLTAGE 2-SPEED, 2-WINDING
47	PROTECTION RELAY SEE ANSI/IEEE C37.2 STANDARD DEVICE NUMBERS LIST
M	METER, ELECTRIC UTILITY GRADE UON
	ELECTRIC VEHICLE CHARGER

ELECTRICAL ABBREVIATIONS

(D)	DEMOLISH
(E)	EXISTING
(F)	FUTURE
(N)	NEW
(R)	RELOCATE
A	AMPERES, ANALOG SIGNAL
AC	ALTERNATING CURRENT
AF	AMPERES FRAME
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERES INTERRUPTING CAPACITY
AT	AMPERES TRIP
AIT	GAS INDICATING TRANSMITTER
AWG	AMERICAN WIRE GAUGE
BC	BARE COPPER
BFG	BELOW FINISHED GRADE
C	CONDUIT
CB	CIRCUIT BREAKER
CCT	CORRELATED COLOR TEMPERATURE
CO	CONDUIT ONLY
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CRI	COLOR RENDERING INDEX
CT	CURRENT TRANSFORMER
CU	COPPER
DC	DIRECT CURRENT
DSB	DISTRIBUTION SWITCHBOARD
EGC	EQUIPMENT GROUND CONDUCTOR
EF	EXHAUST FAN
ELEV	ELEVATION
ETM	ELAPSED TIME METER
EUSERC	ELECTRIC UTILITY SERVICE EQUIPMENT REQUIREMENTS COMMITTEE
FCB	FEEDER CIRCUIT BREAKER
FIT	FLOW INDICATING TRANSMITTER
FLEX	FLEXIBLE
FLUOR	FLUORESCENT
FPP	FIBER OPTIC PATCH PANEL
FPR	FEEDER PROTECTION RELAY
FVNR	FULL VOLTAGE NON-REVERSING STARTER
G, GND	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
H	HALOGEN
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HMI	HUMAN MACHINE INTERFACE
HOA	HAND / OFF / AUTOMATIC
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HS	HAND SWITCH
H2S	HYDROGEN SULFIDE
INCAND	INCANDESCENT
JB, JBOX	JUNCTION BOX
KAIC	KILOAMPERES INTERRUPTING CAPACITY
KVA	KILOVOLT-AMPERE
KW	KILOWATT
KWH	KILOWATT-HOUR
LE	LEVEL SENSOR
LED	LIGHT EMITTING DIODE
LEL	HYDROCARBON
LCP	LOCAL CONTROL PANEL
LIT	LEVEL INDICATING TRANSMITTER
LT	LEVEL TRANSMITTER
LOS	LOCKOUT STOP SWITCH
LSLL	LEVEL SWITCH LOW-LOW
LV	LOW VOLTAGE
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCCB	MOLDED CASE CIRCUIT BREAKER
MCP	MOTOR CIRCUIT PROTECTOR
MH	METAL HALIDE, MANHOLE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MOV	MOTOR OPERATED VALVE
MPR	MOTOR PROTECTION RELAY
MSB	MAIN SWITCHBOARD
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NO.	NUMBER
NTS	NOT TO SCALE
P	POLE
PB	PUSHBUTTON, PULLBOX
PCS	PVC COATED STEEL
PE	PHOTOELECTRIC
PFR	PHASE FAILURE RELAY
PH	PHASE
PIT	PRESSURE INDICATING TRANSMITTER
PLC	PROGRAMMABLE LOGIC CONTROLLER
PQM	POWER QUALITY MONITOR
PSH	PRESSURE SWITCH HIGH
PT	POTENTIAL TRANSFORMER
REC, RECEPT	RECEPTACLE
RGS	RIGID GALVANIZED STEEL
SCCR	SHORT CIRCUIT CURRENT RATING
SCE	SOUTHERN CALIFORNIA EDISON
SPD	SURGE PROTECTION DEVICE
SSS	SOLID STATE STARTER (SOFT STARTER)
SWBD	SWITCHBOARD
TEMP	TEMPERATURE
TYP	TYPICAL
UGPS	UNDERGROUND PULL SECTION
UON	UNLESS OTHERWISE NOTED
V	VOLT(S)
VA	VOLT-AMPERE
VFD	VARIABLE FREQUENCY DRIVE
W	WATT, WIRE
WP	WEATHERPROOF
XFMR	TRANSFORMER

GENERAL ELECTRICAL NOTES

1. REFER TO ELECTRICAL SPECIFICATIONS FOR FURTHER DETAIL AS TO SCOPE, MATERIALS, AND EXECUTION OF ELECTRICAL WORK.
2. CONTRACTOR TO SIZE ALL WIRING NOT EXPLICITLY SHOWN ON DRAWINGS ACCORDING TO THE REQUIREMENTS OF NATIONAL ELECTRICAL CODE (NEC) FOR THE SPECIFIC APPLICATION AND CONDITIONS.
3. ALL CONDUCTORS SHALL BE COPPER (MINIMUM SIZE #12 AWG UNLESS SPECIFICALLY NOTED OTHERWISE).
4. CONTRACTOR SHALL SUBMIT SEISMIC ANCHORAGE CALCULATIONS IN CONFORMANCE WITH CODE REQUIREMENTS AND PROVIDE SEISMIC ANCHORAGE MEANS FOR EQUIPMENT IN ACCORDANCE WITH THE CALIFORNIA BUILDING CODE.
5. THE CONTRACTOR SHALL CONFORM WITH ALL LOCAL CODES AND ORDINANCES, THE STATE OF CALIFORNIA ELECTRICAL SAFETY ORDERS, THE NATIONAL ELECTRICAL CODE AND ANY ADDITIONAL JURISDICTIONS RELATING TO THE WORK.
6. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUIT, WIRE, SERVICES, SWITCHBOARDS, AND VFD'S REQUIRED FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM.
7. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN ITEMS INDICATED ON THE PLANS AND/OR SPECIFICATIONS, OR WITH CODE REQUIREMENTS, THE NOTE, SPECIFICATION OR CODE WHICH PRESCRIBES AND ESTABLISHES THE MORE COMPLETE JOB OR HIGHER STANDARD SHALL PREVAIL.
8. ALL ELECTRICAL EQUIPMENT EXPOSED TO THE CLIMATE SHALL BE WEATHERPROOF.
9. ALL ELECTRICAL EQUIPMENT IN THIS PROJECT SHALL BE U.L. LISTED.
10. ALL UNDERGROUND CONDUIT SHALL BE INSTALLED AT 24" BELOW FINISHED GRADE MINIMUM.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING EXISTING UNDERGROUND FACILITIES AND PROTECTING THESE FACILITIES FROM DAMAGE.
12. THE CONTRACTOR SHALL ROUTE CONDUITS AS REQUIRED BY FIELD CONDITIONS, PIPING, SITE INFRASTRUCTURE AND PER N.E.C.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING UNDERGROUND FACILITIES.
14. CONTRACTOR SHALL PROVIDE ALL NEEDED CHANNELS, ANGLES, AND ANY OTHER MATERIALS REQUIRED TO SUPPORT LUMINARIES, CONDUIT, AND ELECTRICAL EQUIPMENT IN THE LOCATIONS SHOWN ON THE DRAWINGS.
15. CONTRACTOR SHALL NOT CUT ANY STRUCTURAL MEMBERS OR USE ANY ATTACHMENTS THAT WOULD IMPAIR THEIR STRENGTH.
16. CONTRACTOR SHALL DESIGN SUPPORTS IN BETWEEN THE STRUCTURAL SUPPORT MEMBERS AND SUBMIT THE DESIGN AS A SHOP DRAWING SUBMITTAL.
17. INSTRUMENTATION IS SHOWN IN THE GENERAL VICINITY OF THE INTENDED LOCATION AND MAY NOT NECESSARILY MATCH LOCATIONS ON THE PLANS. VERIFY ACTUAL LOCATIONS OF INSTRUMENTS AND RUN ASSOCIATED CONDUITS AS REQUIRED.
18. ELECTRICAL EQUIPMENT AND MATERIAL TO BE LISTED, LABELED, AND INSTALLED PER THE CALIFORNIA ELECTRICAL CODE, THE INSTALLATION STANDARDS/MANUFACTURER'S RECOMMENDATIONS AND, IF REQUIRED, A RECOGNIZED ELECTRICAL TESTING LABORATORY.
19. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT LOS ANGELES COUNTY ELECTRICAL CODE, THE CALIFORNIA ELECTRICAL CODE, AND THE NATIONAL ELECTRICAL CODE IN EFFECT AT THE TIME OF CONTRACT AWARD.
20. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED, LISTED, OR CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY ACCREDITED BY THE UNITED STATES OCCUPATIONAL SAFETY HEALTH ADMINISTRATION.
21. THE MAXIMUM COMBINED VOLTAGE DROP ON BOTH INSTALLED FEEDER CONDUCTORS AND BRANCH CIRCUIT CONDUCTORS TO THE FARTHEST CONNECTED LOAD OR OUTLET SHALL NO EXCEED 5 PERCENT.
22. UNDERGROUND CONDUITS TO BE SCHEDULE 40 PVC. ABOVEGROUND CONDUITS TO BE GRC IN DRY LOCATIONS AND PVC COATED RGS IN WET LOCATIONS. REFER TO ELECTRICAL SPECIFICATIONS FOR DETAILS

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION

AS-BUILT:

REF. DWG. X-XXXX DWG X-XXXX
REF. DWG. X-XXXX

DESIGNED BY: AR
DRAWN BY: VK
DESIGN CHECK BY: AJB
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
ALMA REANTASO
NO. E17285
06-30-2026
ELECTRICAL
STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
ELECTRICAL LEGEND

GRAPHIC SCALE
PAGE X.X.X.
FIELD BOOK X.X.X.

DRAWING REF. E1

MUNIS Project # XXXX-XXXX-XXXX
Phase# XXXX / Rebid: N/A
SHEET 54 OF 70
NOTE:

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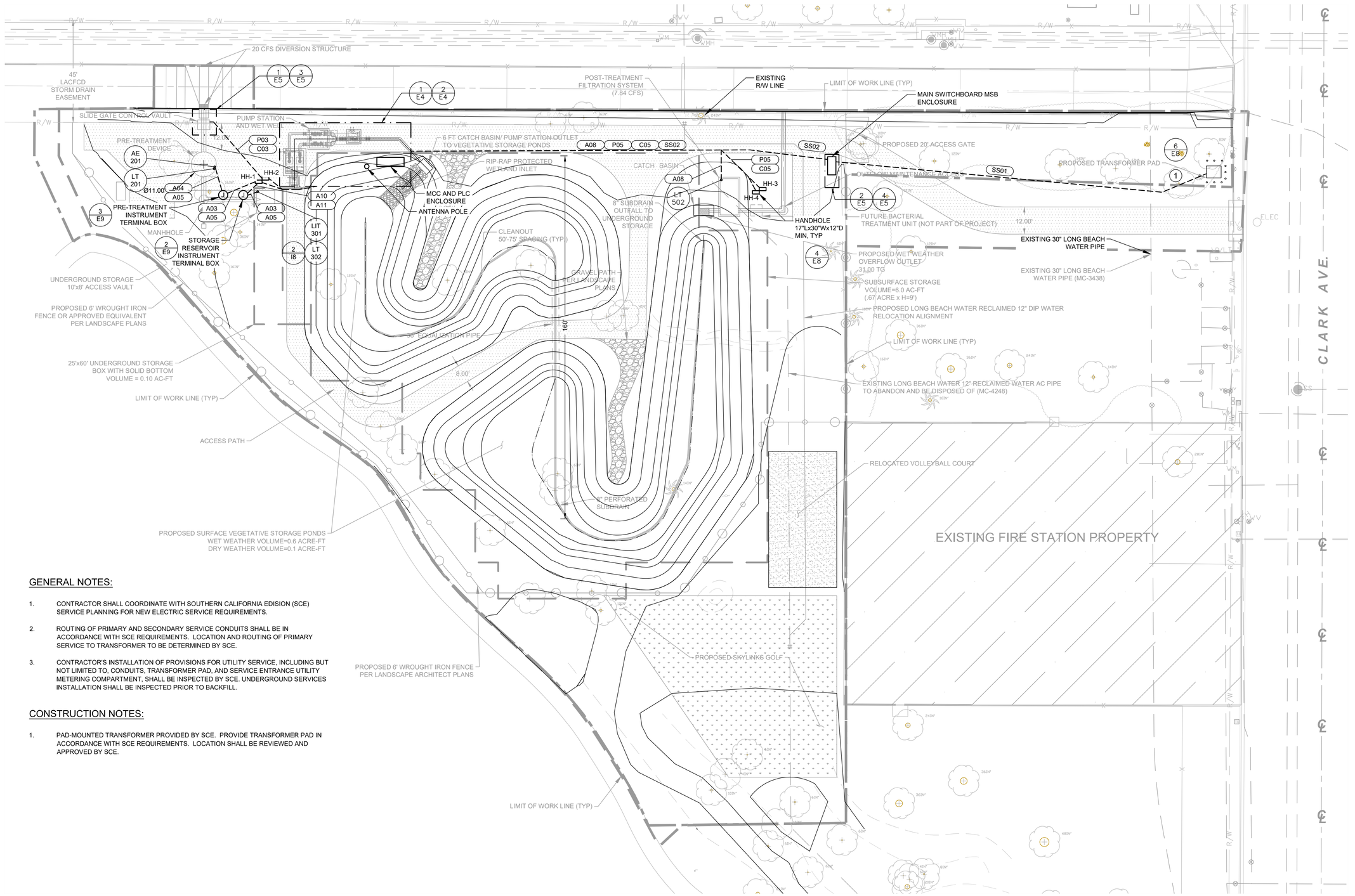

GENERAL NOTES:

1. CONTRACTOR SHALL COORDINATE WITH SOUTHERN CALIFORNIA EDISION (SCE) SERVICE PLANNING FOR NEW ELECTRIC SERVICE REQUIREMENTS.
2. ROUTING OF PRIMARY AND SECONDARY SERVICE CONDUITS SHALL BE IN ACCORDANCE WITH SCE REQUIREMENTS. LOCATION AND ROUTING OF PRIMARY SERVICE TO TRANSFORMER TO BE DETERMINED BY SCE.
3. CONTRACTOR'S INSTALLATION OF PROVISIONS FOR UTILITY SERVICE, INCLUDING BUT NOT LIMITED TO, CONDUITS, TRANSFORMER PAD, AND SERVICE ENTRANCE UTILITY METERING COMPARTMENT, SHALL BE INSPECTED BY SCE. UNDERGROUND SERVICES INSTALLATION SHALL BE INSPECTED PRIOR TO BACKFILL.

CONSTRUCTION NOTES:

1. PAD-MOUNTED TRANSFORMER PROVIDED BY SCE. PROVIDE TRANSFORMER PAD IN ACCORDANCE WITH SCE REQUIREMENTS. LOCATION SHALL BE REVIEWED AND APPROVED BY SCE.

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION
				REF. DWG: X-XXXX DWG: X-XXXX
				DWG: X-XXXX
				AS-BUILT:

DESIGNED BY: AR
DRAWN BY: CCC
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DRAFTING CHECK BY:

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ELECTRICAL
STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
ELECTRICAL SITE PLAN

GRAPHIC SCALE 0 20 40 60

DRAWING REF. E2
PAGE X.X.X.
FIELD BOOK X.X.X.

MUNIS Project # XXXX-XXXX-XXXX
Phase# XXXX / Rebid: N/A
SHEET 55 OF 70
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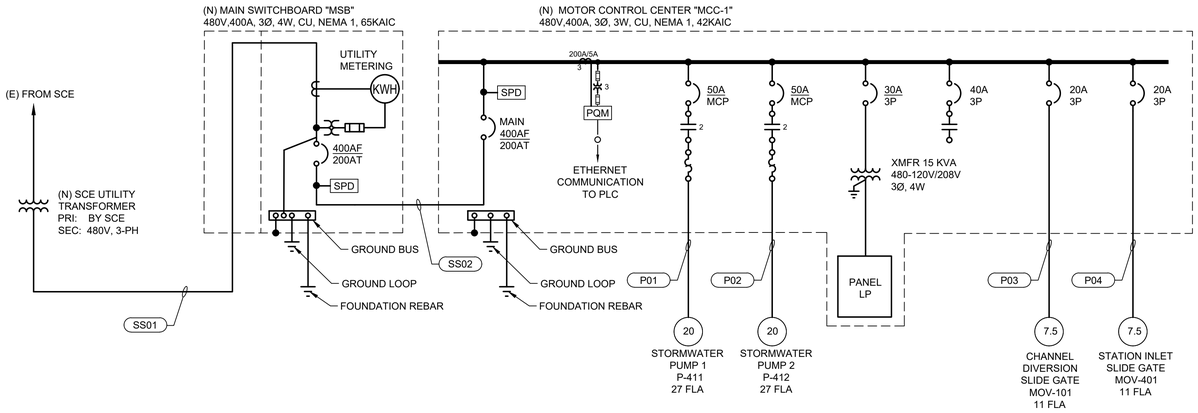


1 SINGLE LINE DIAGRAM
SCALE: N.T.S.

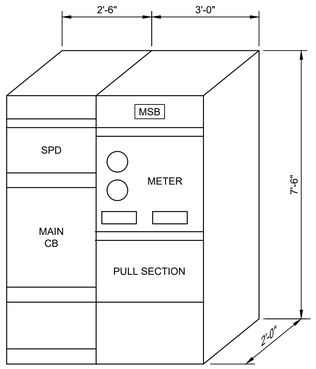
MSB/MCC LOAD SCHEDULE			
NAME	**KVA**	**HP**	**FLA**
PUMP P-411	22.4	20	27
PUMP P-412	22.4	20	27
MOV-101	9.1	7.5	11
MOV-401	9.1	7.5	11
PANEL A (XFRM T-A)	15		15
25% LARGEST MOTOR			6.8
TOTAL	**83.8**		**100.8**

GENERAL NOTES

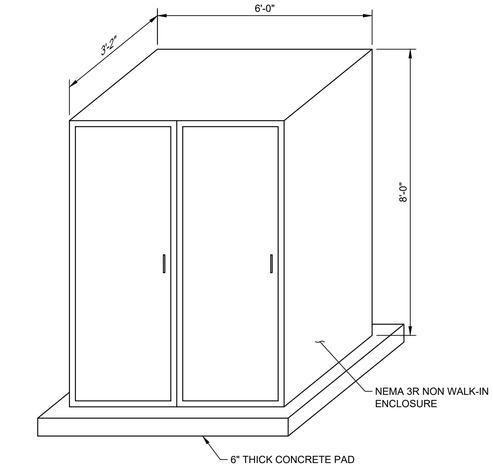
1. THE MOTORS ARE LOCATED IN VAULTS BELOW GRADE. DISCONNECTING MEANS ARE NOT FEASIBLE FOR THIS INSTALLATION. NEC 430.102B HAS AN EXCEPTION TO THIS REQUIREMENT THAT STATES THE FOLLOWING:
"WHERE SUCH LOCATION OF THE DISCONNECTING MEANS FOR THE MOTOR IS IMPRACTICABLE OR INTRODUCES ADDITIONAL OR INCREASED HAZARDS TO PERSON OR PROPERTY".

2. SUBMIT EUSERC DRAWINGS FOR MAIN SWITCHBOARD FOR REVIEW PRIOR TO EQUIPMENT FABRICATION. MAIN SWITCHBOARD SERVICE ENTRANCE AND UTILITY METERING COMPARTMENTS SHALL MEET THE REQUIREMENTS OF SCE. PROVIDE MAIN SWITCHBOARD IN NEMA 3R, POWDER COATED STEEL, NON WALK-IN ENCLOSURE.

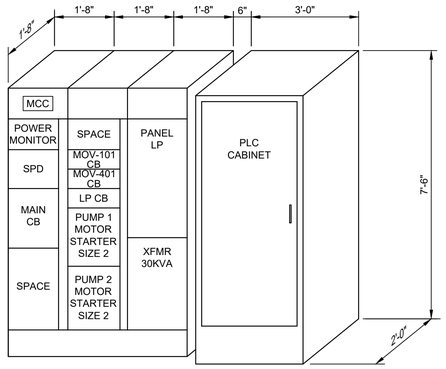
3. PROVIDE CUSTOM NEMA 3R, POWER COATED STEEL, NON WALK-IN ENCLOSURE TO HOUSE MOTOR CONTROL CENTER AND PLC CONTROL CABINET. PROVIDE ENCLOSURE WITH DOOR SWITCH OPERATED LED LIGHTING FIXTURES AND VENTILATION AS REQUIRED TO PROTECT EQUIPMENT. WIRE ENCLOSURE APPURTENANCES TO AVAILABLE CIRCUITS IN LIGHTING PANELBOARD.



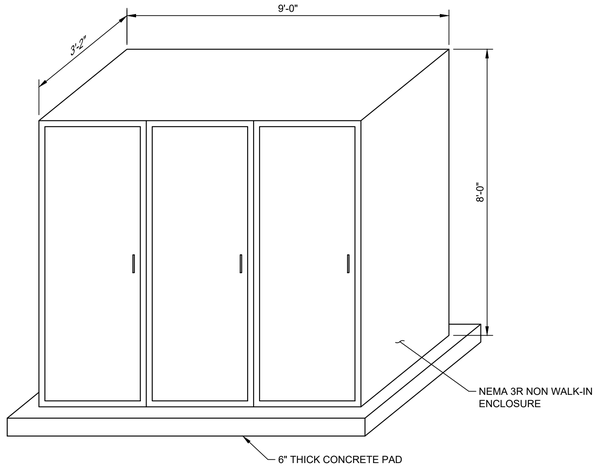
2 MSB ELEVATION
SCALE: 1/2" = 1'



3 MSB EQUIPMENT ENCLOSURE ELEVATION
SCALE: 1/2" = 1'



4 MCC ELEVATION
SCALE: 1/2" = 1'



5 MCC/PLC EQUIPMENT ENCLOSURE ELEVATION
SCALE: 1/2" = 1'

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION
				AS-BUILT:
				REF. DWG. X-XXXX DWG. X-XXXX
				DWG. X-XXXX

DESIGNED BY: AR
DRAWN BY: VK
DESIGN CHECK BY: AJB
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
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06-30-2026
ELECTRICAL
STATE OF CALIFORNIA

SKYLINKS REGIONAL
STORMWATER CAPTURE PROJECT
SINGLE LINE DIAGRAM AND ELEVATION

GRAPHIC SCALE
PAGE X.X.X.
FIELD BOOK X.X.X.

DRAWING REF. E3

MUNIS Project # XXXX-XXXX-XXXX

Phase# XXXX / Rebid: N/A

SHEET 56 OF 70

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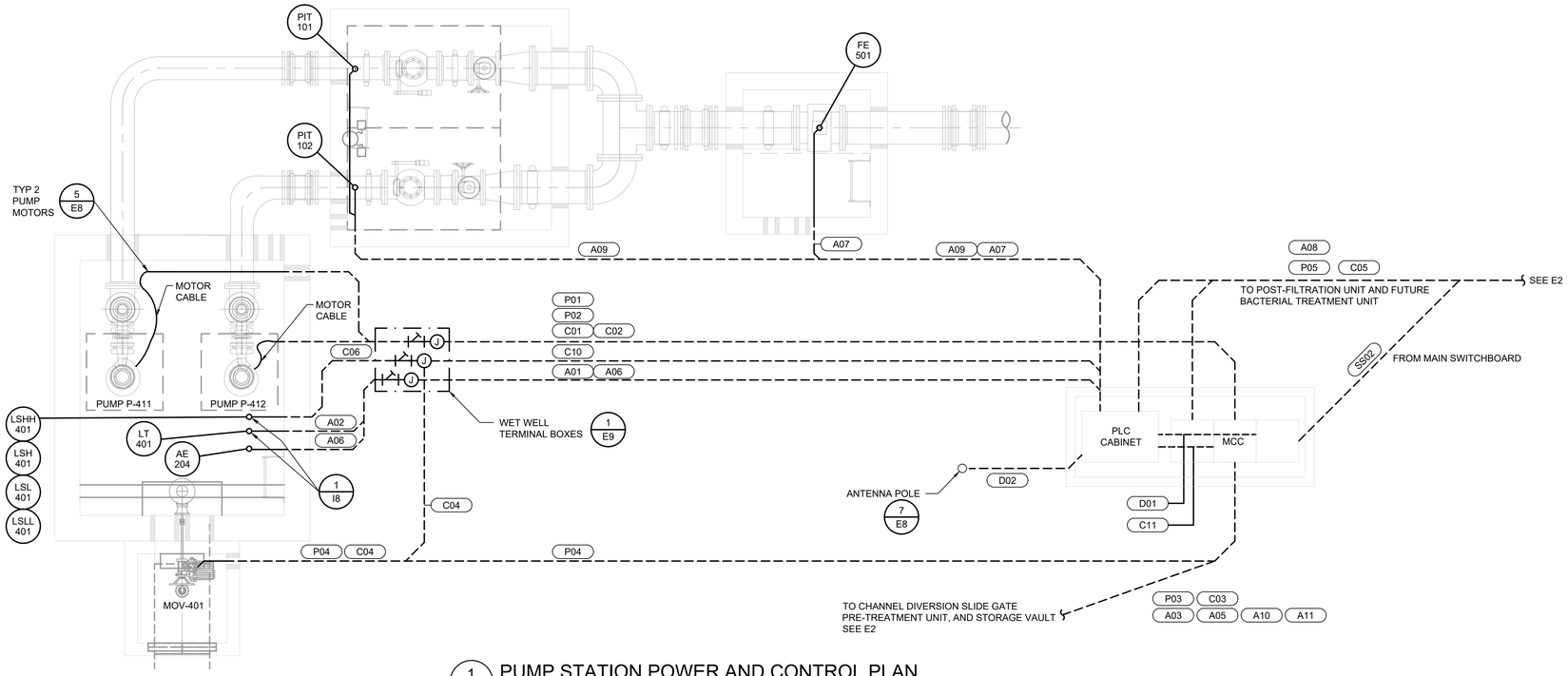
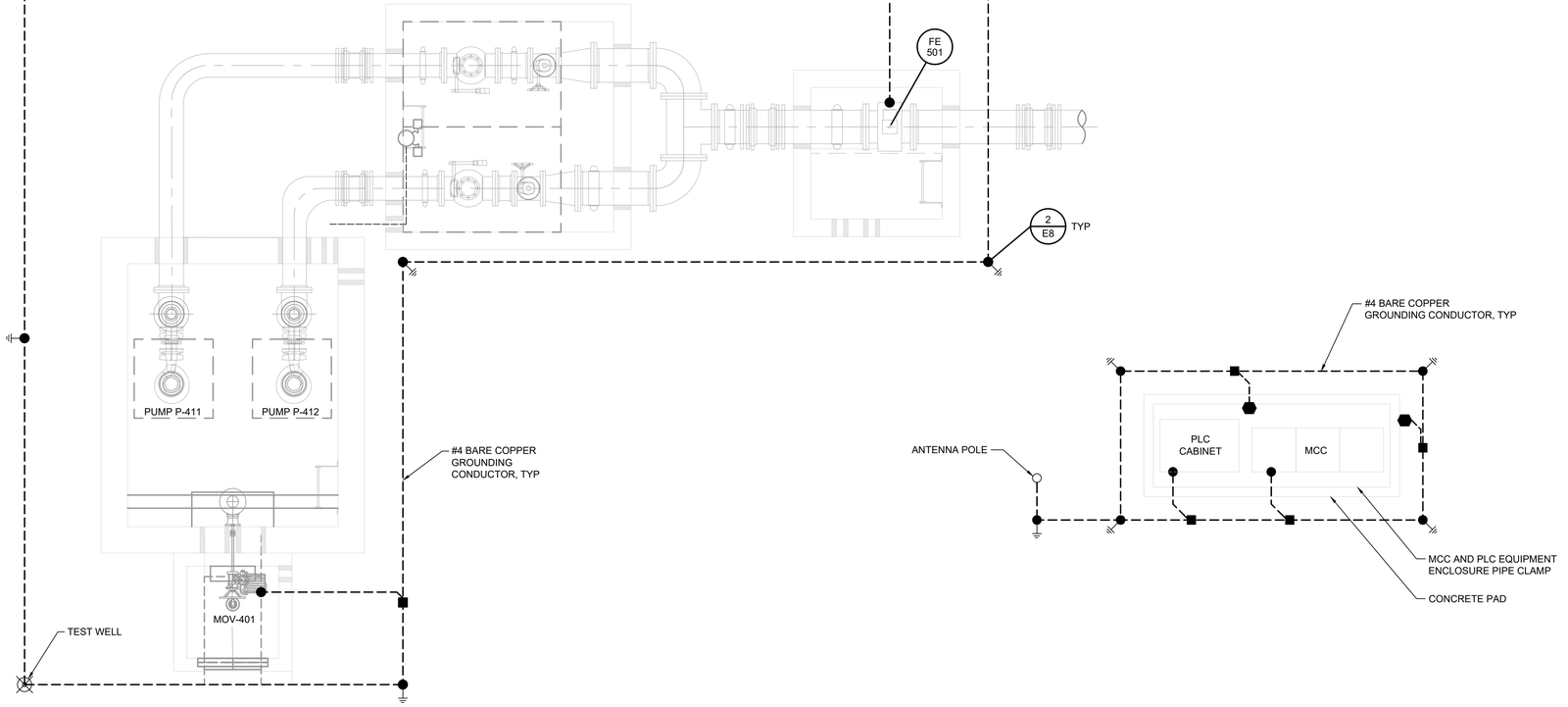


1 - PUMP STATION POWER AND CONTROL PLAN

SCALE: 3/8"=1'-0"



2 - PUMP STATION GROUNDING PLAN

SCALE: 3/8"=1'-0"

LEGEND

- GROUND TAP CONNECTION
- EQUIPMENT GROUND CONNECTION
- PIGTAIL CONNECTION TO STRUCTURAL STEEL
- GROUNDING ELECTRODE AND BOX

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION

AS-BUILT:

REF. DWG. X-XXXX DWG. X-XXXX

DWG. X-XXXX

DESIGNED BY: AR

DRAWN BY: VK

DESIGN CHECK BY: AJB

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06-30-2026
ELECTRICAL
STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
PUMP STATION ELECTRICAL PLAN

GRAPHIC SCALE

PAGE X.X.X.

FIELD BOOK X.X.X.

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MUNIS Project # XXXX-XXXX-XXXX

Phase# XXXX / Rebid: N/A

SHEET 57 OF 70

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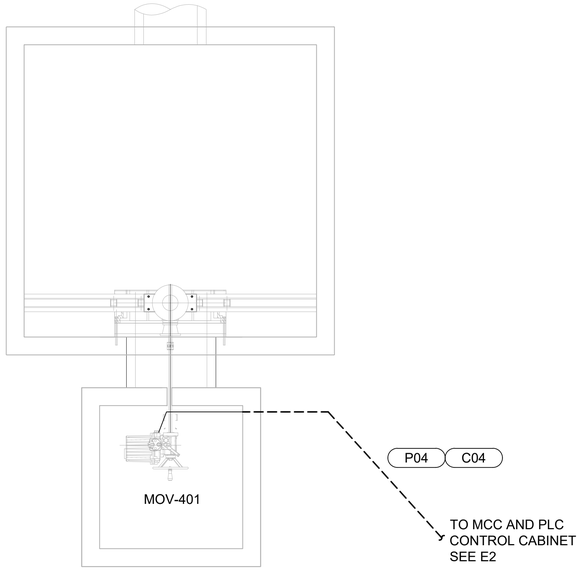
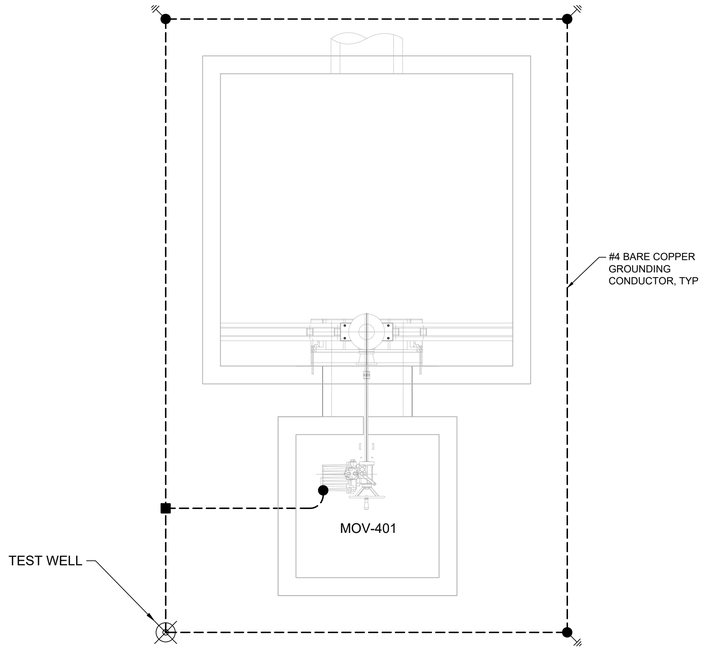


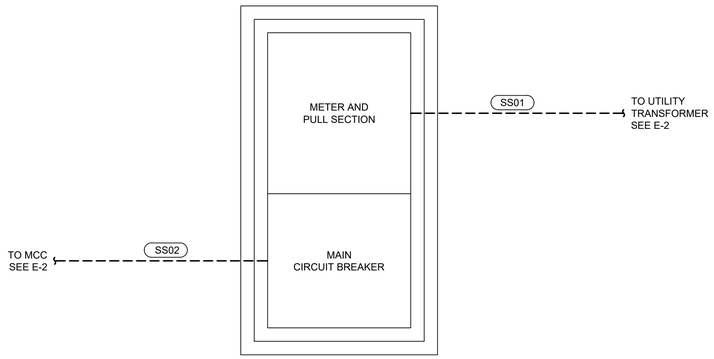
1 - CHANNEL DIVERSION SLIDE GATE POWER AND CONTROL PLAN

SCALE: 1/2"=1'-0"



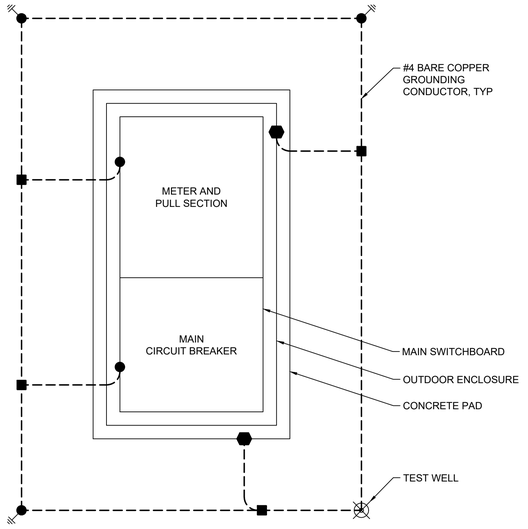
3 - CHANNEL DIVERSION SLIDE GATE GROUNDING PLAN

SCALE: 1/2"=1'-0"



2 - MAIN SWITCHBOARD POWER PLAN

SCALE: 3/4"=1'-0"



4 - MAIN SWITCHBOARD GROUNDING PLAN

SCALE: 3/4"=1'-0"

LEGEND

- GROUND TAP CONNECTION
- EQUIPMENT GROUND CONNECTION
- PIGTAIL CONNECTION TO STRUCTURAL STEEL
- GROUNDING ELECTRODE AND BOX

N

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION
AS-BUILT:			REF. DWG. X-XXXX	DWG. X-XXXX
			DWG. X-XXXX	

DESIGNED BY: AR
DRAWN BY: VK
DESIGN CHECK BY: AJB
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
ALMA REANTASO
NO. E17285
06-30-2026
ELECTRICAL
STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
MISCELLANEOUS ELECTRICAL PLANS

GRAPHIC SCALE

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FIELD BOOK X.X.X.

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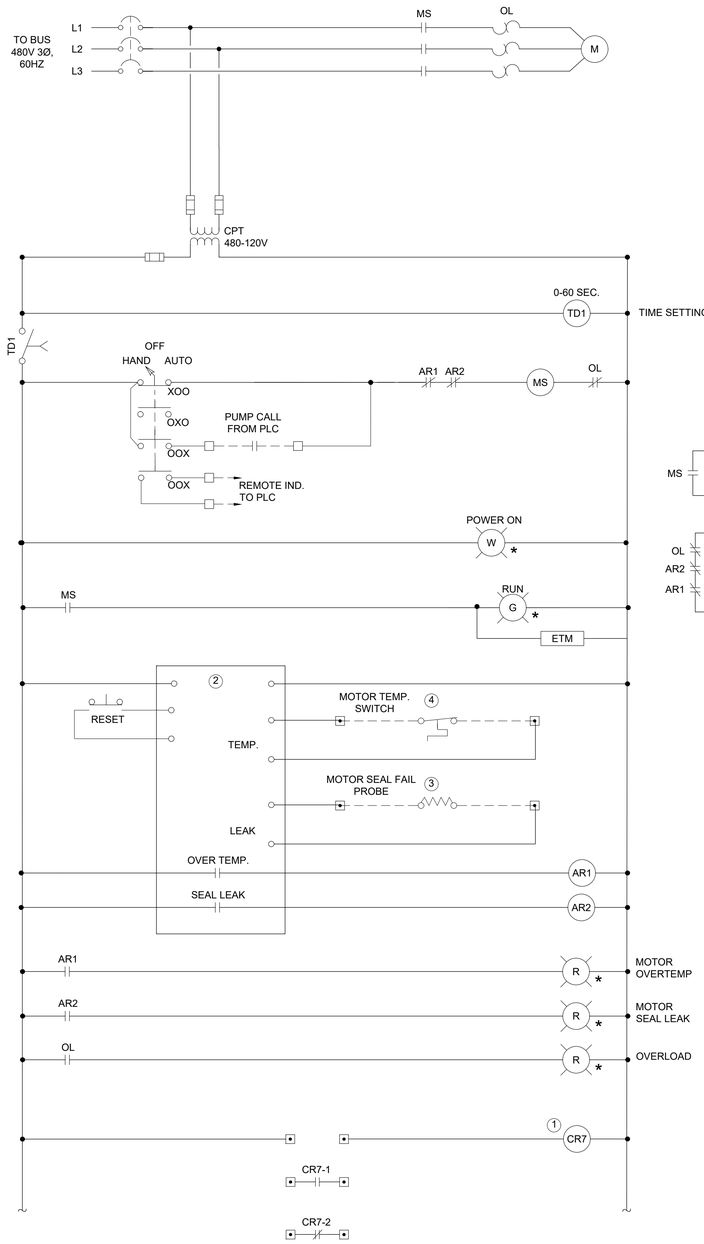
MUNIS Project # XXXX-XXXX-XXXX

Phase# XXXX / Rebid: N/A

SHEET 58 OF 70

NOTE:



1 / - TYPICAL PUMP MOTOR CONTROL SCHEMATIC

SCALE: N.T.S.

GENERAL NOTES

1. ALL PUSHBUTTONS, SELECTOR SWITCHES, ETM, AND INDICATING LIGHTS SHALL BE DOOR MOUNTED.

CONSTRUCTION NOTES

(1) PROVIDE CONTROL AND SPARE RELAYS TO HAVE 2 N.C. AND 2 N. O. CONTACTS. ALL CONTACTS SHALL BE WIRED TO TERMINALS.

(2) TEMPERATURE AND LEAKAGE RELAY.

(3) LEAK SENSOR PROBE LOCATED IN MOTOR CHAMBER.

(4) THREE NORMALLY CLOSED TEMPERATURE SWITCHES LOCATED IN MOTOR HOUSING.

LEGEND

FIELD MOUNTED DEVICE
(PRESSURE SWITCH SHOWN)

INPUT/OUTPUT
TO/FROM PLC

* = PUSH TO TEST

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION
				REF. DWG. X-XXXX DWG. X-XXXX
				REF. DWG. X-XXXX

AS-BUILT:

DESIGNED BY: AR
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06-30-2026
ELECTRICAL
STATE OF CALIFORNIA

SKYLINKS REGIONAL
STORMWATER CAPTURE PROJECT
MOTOR CONTROL SCHEMATIC

GRAPHIC SCALE

PAGE

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MUNIS Project # XXXX-XXXX-XXXX

Phase# XXXX / Rebid: N/A

SHEET 59 OF 70

NOTE:

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CONDUIT AND WIRE SCHEDULE

CIRCUIT ID	ORIGIN	DESTINATION	CONDUCTORS	CONDUIT	VOLTAGE	REMARKS
SS00	SCE PRIMARY SERVICE	SCE UTILITY TRANSFORMER	EMPTY	4"PVC	BY SCE	PRIMARY CONDUCTORS BY UTILITY; CONFIRM CONDUIT SIZE WITH SCE
SS01	SCE UTILITY TRANSFORMER	MSB MAIN SWITCHBOARD	3C #4/0, 1#6 EGC	3" PVC	480V	
SS02	MSB MAIN SWITCHBOARD	MCC-1 MOTOR CONTROL CENTER	3C #4/0, 1#6 EGC	3" PVC	480V	
P01	MCC-1 MOTOR CONTROL CENTER	P-411 STORMWATER PUMP 1	3C #8, 1#10 EGC	1"PVC	480V	CONDUCTORS TO MOTOR TERMINAL BOX; PUMP MOTOR CABLE TO WET WELL
P02	MCC-1 MOTOR CONTROL CENTER	P-412 STORMWATER PUMP 2	3C #8, 1#10 EGC	1"PVC	480V	CONDUCTORS TO MOTOR TERMINAL BOX; PUMP MOTOR CABLE TO WET WELL
P03	MCC-1 MOTOR CONTROL CENTER	MOV-101 CHANNEL DIVERSION SLIDE GATE	3C #12, 1#12 EGC	1"PVC	480V	
P04	MCC-1 MOTOR CONTROL CENTER	MOV-401 STATION INLET SLIDE GATE	3C #12, 1#12 EGC	1"PVC	480V	
P05	MCC-1 MOTOR CONTROL CENTER	HANDHOLE HH-3	PULL ROPE	1"PVC	208V	FUTURE BACTERIAL TREATMENT UNIT POWER
C01	MCC-1 MOTOR CONTROL CENTER P-411 MOTOR STARTER	WET WELL DISCRETE INSTRUMENT TERMINAL BOX	4C #14, 1#14 EGC	1"PVC	120V	TS-411,LA-411 PUMP TEMP AND LEAK SENSORS; COMBINE CONDUCTORS IN SINGLE CONDUIT WITH C02
C02	MCC-1 MOTOR CONTROL CENTER P-412 MOTOR STARTER	WET WELL DISCRETE INSTRUMENT TERMINAL BOX	4C #14, 1#14 EGC	1"PVC	120V	TS-412,LA-412 PUMP TEMP AND LEAK SENSORS; COMBINE CONDUCTORS IN SINGLE CONDUIT WITH C01
C03	PLC CONTROL CABINET	MOV-101 CHANNEL DIVERSION SLIDE GATE	10C #14, 1#14 EGC	1"PVC	120V	
C04	WET WELL DISCRETE INSTRUMENT TERMINAL BOX	MOV-401 STATION INLET SLIDE GATE	10C #14, 1#14 EGC	1"PVC	120V	CONDUIT FROM TERMINAL BOX TO GATE ACTUATOR VAULT
C05	PLC CONTROL CABINET	HANDHOLE HH-4	EMPTY	1"PVC	120V	FUTURE BACTERIAL TREATMENT UNIT CONTROL
C06	HANDHOLE HH-1	LSHH/LSH/LSL/LSLL-401	10C #14, 1#14 EGC	1"PVC	120V	WET WELL LEVEL SWITCHES; CONDUIT FROM HANDHOLE TO JUNCTION BOX IN PUMP STATION WET WELL
C10	PLC CONTROL CABINET	WET WELL DISCRETE INSTRUMENT TERMINAL BOX	20C #14, 1#14 EGC	1-1/2" PVC	120V	WET WELL LEVEL SWITCHES AND SLIDE GATE CONTROL SIGNALS
C11	PLC CONTROL CABINET	MCC-1 MOTOR CONTROL CENTER	16C #14, 1#14 EGC	1" RGS	120V	P-411, P412 MOTOR STARTERS; PUMP CONTROL SIGNALS
A01	PLC CONTROL CABINET	WET WELL ANALOG INSTRUMENT TERMINAL BOX	1C #16 TSP	1"PVC	24VDC	LT-401 WET WELL LEVEL
A02	WET WELL ANALOG INSTRUMENT TERMINAL BOX	LT-401 WET WELL LEVEL SENSOR	MFR CABLE	1"PVC	24VDC	
A03	PLC CONTROL CABINET	PRE-TREATMENT INSTRUMENT TERMINAL BOX	1C #16 TSP	1"PVC	24VDC	LT-201 PRE-TREATMENT LEVEL
A04	PRE-TREATMENT INSTRUMENT TERMINAL BOX	LT-201 PRETREATMENT LEVEL SENSOR	MFR CABLE	1"PVC	24VDC	
A05	AT-201/AT-401 (INSIDE PLC CONTROL CABINET)	AE-201 PRETREATMENT	MFR CABLE	1"PVC	24VDC	MANUFACTURER CABLE FROM CONTROLLER TO HYDROCARBON SENSOR AT PRETREATMENT UNIT. SINGLE CONTROLLER WITH INPUTS FOR AE-201 AND AE-204. PASS CABLE THRU PRE-TREATMENT INSTRUMENT TERMINAL BOX.
A06	AT-201/AT-204 (INSIDE PLC CONTROL CABINET)	AE-204 WET WELL	MFR CABLE	1"PVC	24VDC	MANUFACTURER CABLE FROM CONTROLLER TO HYDROCARBON SENSOR AT WET WELL. SINGLE CONTROLLER WITH INPUTS FOR AE-201 AND AE-401. PASS CABLE THRU WET WELL ANALOG INSTRUMENT TERMINAL BOX.
A07	FIT-501 (INSIDE PLC CONTROL CABINET)	FE-501	MFR CABLE	1"PVC	24VDC	MANUFACTURER CABLE TO TRANSMITTER IN FLOWMETER VAULT
A08	PLC CONTROL CABINET	LT-501 FILTRATION UNIT	1C #16 TSP	1"PVC	24VDC	
A09	PLC CONTROL CABINET	PT-101/PT-102	2C #16 TSP	1"PVC	24VDC	PUMP DISCHARGE PRESSURE SIGNALS
A11	PLC CONTROL CABINET	STORAGE RESERVOIR INSTRUMENT TERMINAL BOX	1C #16 TSP	1"PVC	24VDC	LT-302 STORAGE RESERVOIR LEVEL
A12	STORAGE RESERVOIR INSTRUMENT TERMINAL BOX	LT-302 STORAGE RESERVOIR LEVEL SENSOR	MFR CABLE	1"PVC	24VDC	
D01	PLC CONTROL CABINET	MCC-1 MOTOR CONTROL CENTER	CAT 6 ETHERNET	1" RGS	300V	POWER QUALITY MONITOR
D02	RADIO (INSIDE PLC CONTROL CABINET)	ANTENNA	COAX CABLE	1 1/2" PVC		PVC UNDERGROUND. PVC COATED RGS ALONG POLE TO ANTENNA.

LIGHTING PANELBOARD SCHEDULE

60 AMP MAIN LUGS ONLY — LOCATION: MCC-1
100 AMP BUS RATING — 18 POLES — 14 KA SHORT CIRCUIT RATING — ENCLOSURE RATING: NEMA 1
120-208 VOLTS — 3 PHASE — 4 WIRE — MOUNTING: IN MCC

CIRCUIT NO	DESCRIPTION	LOAD KVA PHASE A	LOAD KVA PHASE B	LOAD KVA PHASE C	BREAKER AMPS/ POLES	CIRCUIT NO.	DESCRIPTION	LOAD KVA PHASE A	LOAD KVA PHASE B	LOAD KVA PHASE C	BREAKER AMPS/ POLES
1	PLC CONTROL CABINET	0.5			20A/1P	2	RECEPTACLE	0.18			20A/1P
3	MCC/PLC ENCLOSURE LIGHTING		0.05		20A/1P	4	MCC/PLC ENCLOSURE FAN		1.00		20A/1P
5	SPARE				20A/1P	6	SPARE				20A/1P
7	SPARE (FUTURE BACTERIAL TREATMENT UNIT)	1.00			20A/3P	8	SPARE				20A/1P
9	SPARE (FUTURE BACTERIAL TREATMENT UNIT)		1.00		20A/3P	10	SPARE				20A/1P
11	SPARE (FUTURE BACTERIAL TREATMENT UNIT)			1.00	20A/3P	12	SPARE				20A/1P
13	SPACE					14	SPACE				
15	SPACE					16	SPACE				
17	SPACE					18	SPACE				
	TOTAL LINE KVA THIS SIDE	1.50	1.05	1.00			TOTAL LINE KVA THIS SIDE	0.18	1.00	0.00	
							TOTAL KVA PER LINE	1.68	2.05	1.00	
							TOTAL KVA		4.73		

GENERAL NOTES

1. PROVIDE AND INSTALL CONDUIT TYPES AS REQUIRED BY THE SPECIFICATIONS.
2. PROVIDE PVC-COATED RIGID STEEL CONDUIT FOR CONDUIT TRANSITIONS FROM UNDERGROUND TO ABOVE GROUND AND FOR CONDUIT INSTALLED IN ALL EXPOSED OUTDOOR LOCATIONS.

REVISIONS: No. | DATE | SHEET | DESCRIPTION | APPROVAL
AS-BUILT:
REF. DWG. X-XXXX DWG. X-XXXX
REF. DWG. X-XXXX

DESIGNED BY: AR
DRAWN BY: VK
DESIGN CHECK BY: AJB
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER — ALMA REANTASO — NO. E17285 — 06-30-2026 — ELECTRICAL — STATE OF CALIFORNIA

SKYLINKS REGIONAL
STORMWATER CAPTURE PROJECT
ELECTRICAL SCHEDULES

GRAPHIC SCALE
PAGE
FIELD BOOK X.X.X.
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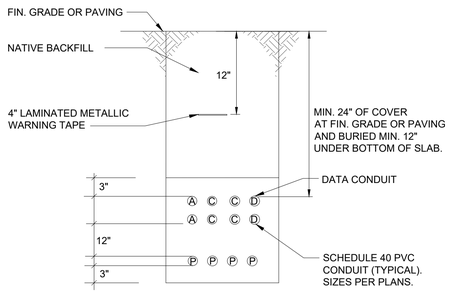
MUNIS Project # XXXX-XXXX-XXXX
Phase# XXXX / Rebid: N/A
SHEET 60 OF 70
NOTE:

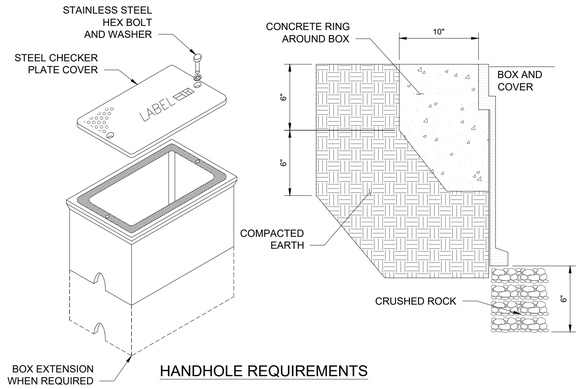


KEEP POWER/ANALOG/CONTROL CONDUITS 12" SEPARATION

NOTE: THIS DETAIL SHOWS A TYPICAL UNDERGROUND DUCT BANK CROSS SECTION. COORDINATE NUMBER OF CONDUITS WITH PLANS AND PROVIDE UNDER SLAB NECESSARY TO ACCOMMODATE ALL CONDUITS.

1 TYPICAL DUCTBANK DETAIL

SCALE: N.T.S.

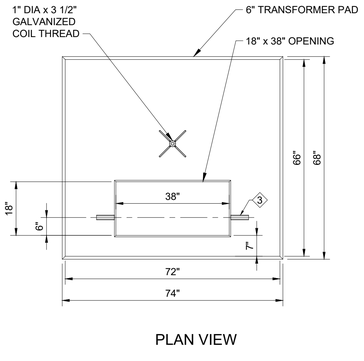


HANDHOLE REQUIREMENTS

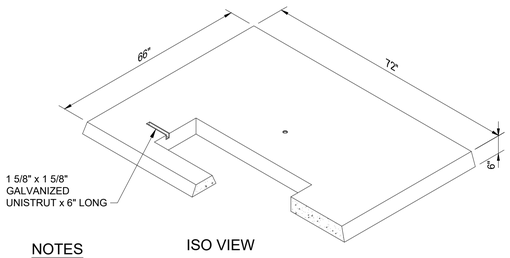
1. BOX SHALL CONSIST OF REINFORCED CONCRETE WITH A STEEL FRAME.
2. COVER AND BOX SHALL BE RATED FOR AASHTO H20 TRAFFIC LOADING.
3. PROVIDE STAINLESS STEEL BOLTS AND INSERTS.
4. PROVIDE WITH (2) 2 1/2" MOUSEHOLES.
5. PROVIDE LABEL "ELECTRICAL" FOR POWER HANDHOLES OR AS INDICATED.

4 TYPICAL HANDHOLE DETAIL

SCALE: N.T.S.



PLAN VIEW



ISO VIEW

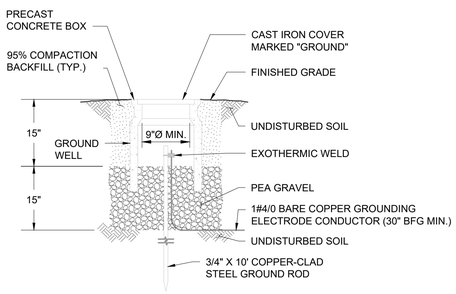
NOTES

1. PROVIDE TRANSFORMER PAD IN ACCORDANCE WITH SCE REQUIREMENTS. COORDINATE WITH SCE SERVICE PLANNER TO PROVIDE TRANSFORMER PAD OF CORRECT DIMENSIONS FOR THE UTILITY TRANSFORMER SCE WILL INSTALL
2. TRANSFORMER PAD BASED ON JENSEN PRECAST PAD DESIGNED FOR PARKWAY LOADING USING 5,500 PSI COMPRESSIVE STRENGTH CONCRETE AND 60,000 PSI YIELD STRENGTH ASTM A-706 STEEL REINFORCEMENT.

6 TRANSFORMER PAD DETAIL

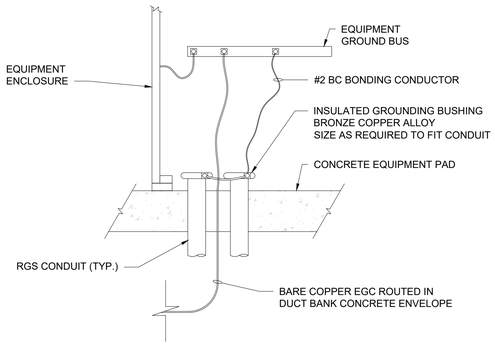
E2

SCALE: N.T.S.



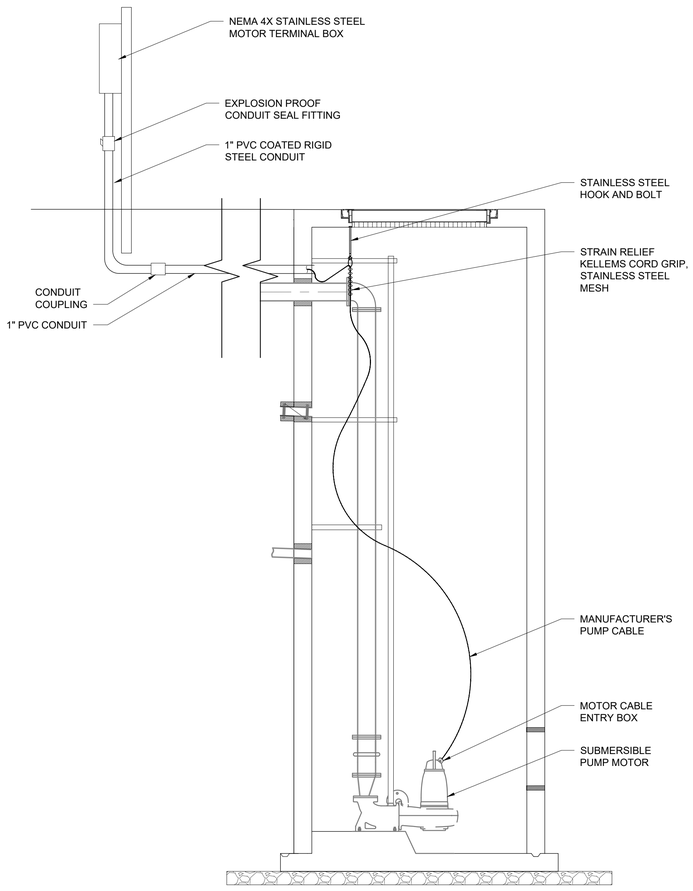
2 GROUND ROD WELL

SCALE: N.T.S.



3 ELECTRICAL EQUIPMENT GROUNDING

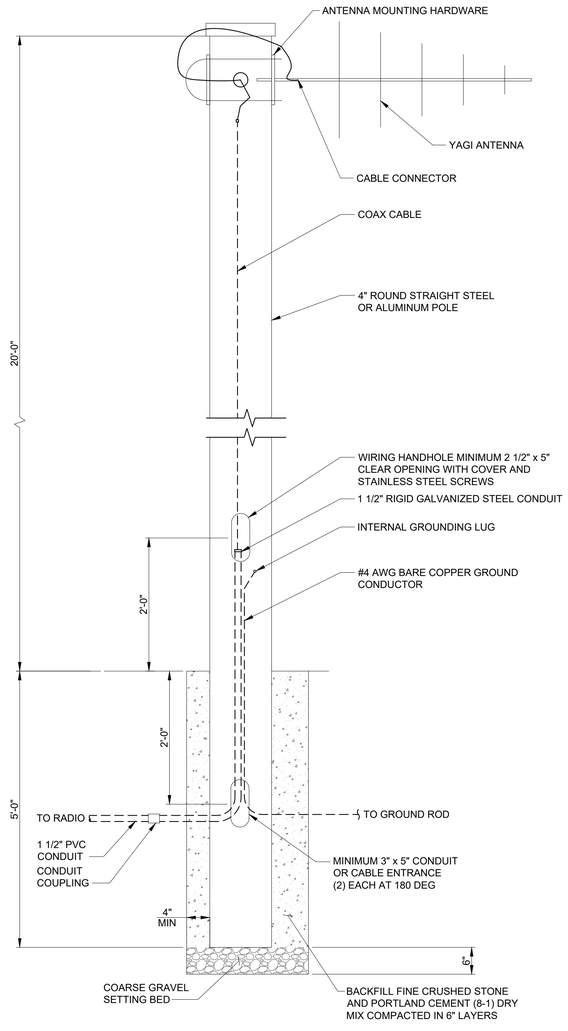
SCALE: N.T.S.



5 PUMP MOTOR CABLE CONNECTION DETAIL

E4

SCALE: N.T.S.



7 ANTENNA POLE DETAIL

E4

SCALE: N.T.S.

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION

AS-BUILT:

REF. DWG. X-XXXX DWG. X-XXXX
DWG. X-XXXX

DESIGNED BY: AR
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DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
ALMA REANTASO
NO. E17285
06-30-2026
ELECTRICAL
STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
ELECTRICAL DETAILS

GRAPHIC SCALE

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MUNIS Project # XXXX-XXXX-XXXX

Phase# XXXX / Rebid: N/A

SHEET 61 OF 70

NOTE:

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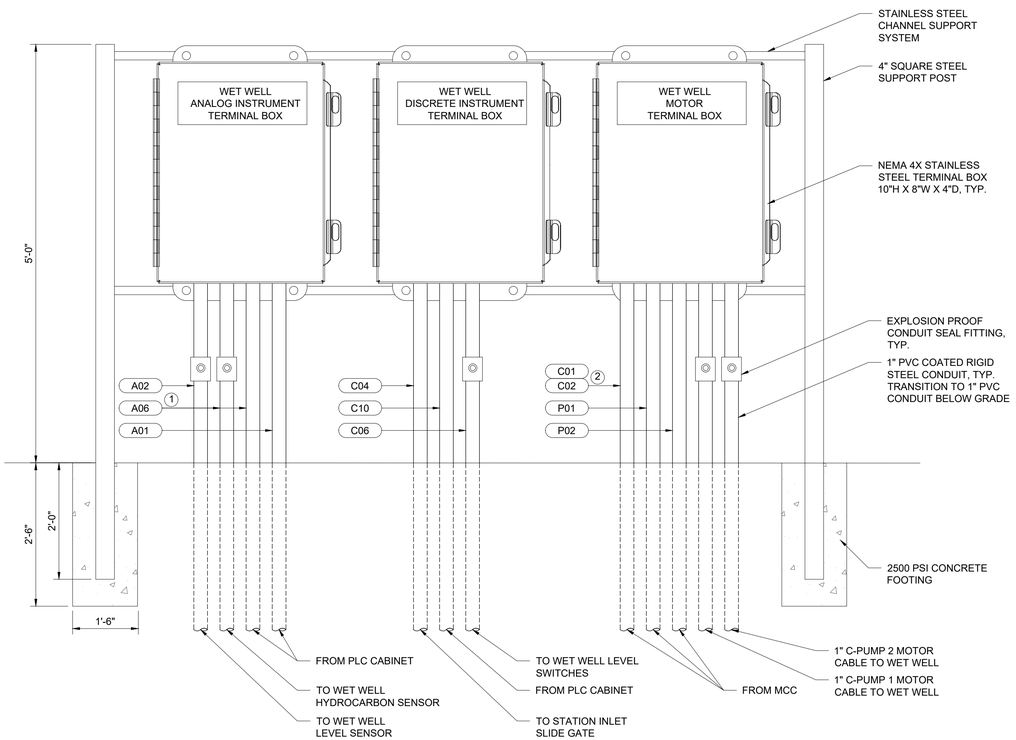
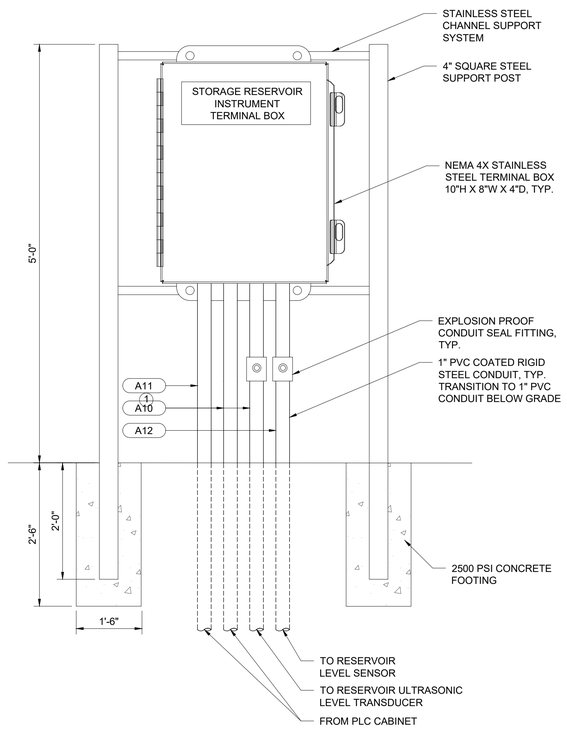
CONSTRUCTION NOTES

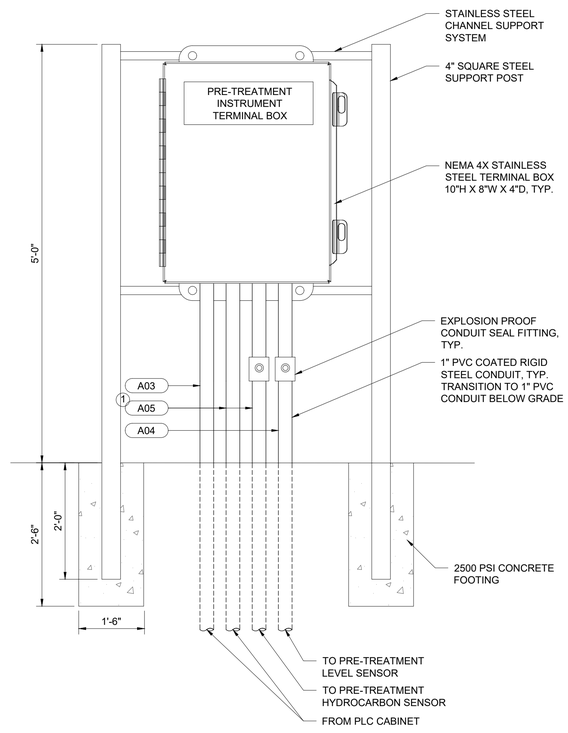
1. PASS MANUFACTURER'S CABLE THRU INSTRUMENT TERMINAL BOX.
2. COMBINE CONDUCTORS FOR PUMP MOTOR SENSOR CIRCUITS IN SINGLE CONDUIT.



1 E4 WET WELL TERMINAL BOXES DETAIL
SCALE: N.T.S.



2 E2 STORAGE RESERVOIR TERMINAL BOX DETAIL
SCALE: N.T.S.



3 E2 PRE-TREATMENT TERMINAL BOX DETAIL
SCALE: N.T.S.

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION

AS-BUILT:

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DWG. X-XXXX

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06-30-2026
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STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
ELECTRICAL DETAILS 2

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FIELD BOOK X.X.X.
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MUNIS Project # XXXX-XXXX-XXXX
Phase# XXXX / Rebid: N/A
SHEET 62 OF 70
NOTE:

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INSTRUMENT SOCIETY OF AMERICA TABLE

IDENTIFICATION LETTERS

	FIRST-LETTER		SUCCEEDING-LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY			CONTROL	
D	USER'S CHOICE	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USER'S CHOICE	MOMENTARY			MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE,DAMPER LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED(*)	UNCLASSIFIED(*)	UNCLASSIFIED(*)
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

INSTRUMENT LINE SYMBOLS

- PRIMARY PROCESS FLOW
- SECONDARY PROCESS FLOW, CONNECTION TO PROCESS FLOW, MECHANICAL LINK OR INSTRUMENT SUPPLY
- ELECTRIC SIGNAL (DISCRETE)
- A — A — ELECTRIC SIGNAL (ANALOG)
- DATA COMMUNICATION LINE
- (2) MULTI-CIRCUIT ELECTRIC SIGNALS (NUMBER OF SIGNALS ILLUSTRATED IN PARENTHESIS)
- INTERLOCK
- ULTRASONIC LEVEL SENSOR

VALVES & GATES

- BUTTERFLY VALVE (BFV)
- GATE VALVE (GV)
- KNIFE GATE VALVE (KGV)
- SWING CHECK VALVE (CV)
- BALL VALVE (BV)
- GLOBE VALVE (GLV)
- DIAPHRAGM VALVE (DV)
- PLUG VALVE (PV)
- COMBINATION AIR VALVE (AVRV)
- 3-WAY GLOBE
- BALL CHECK VALVE (BCV)
- M — MOTOR OPERATED VALVE (MOV)
- BACK PRESSURE RELIEF (BPR)
- PRESSURE CONTROL VALVE (PCV)
- S — SOLENOID CONTROL VALVE (SV)
- S — 3-WAY SOLENOID
- NEEDLE VALVE (NV)
- PINCH VALVE (PIV)
- PRESSURE RELIEF VALVE (PRV)
- DISK CHECK VALVE (DCV)
- SAMPLE VALVE (S)
- VACUUM BREAKER VALVE (VBV)
- AIR VENT VALVE (AV)

MECHANICAL EQUIPMENT

- M — MAGNETIC FLOWMETER
- ORIFICE PLATE
- NORMAL LIQUID LEVEL
- LEVEL SENSOR, FLOAT TYPE
- CALIBRATION COLUMN
- REDUCER
- GAGE ISOLATOR
- BLIND FLANGE
- AREA-VELOCITY FLOW METER

INSTRUMENT IDENTIFICATION

	PRIMARY LOCATION *** NORMALL ACCESSIBLE TO OPERATOR	FIELD MOUNTED
DISCRETE INSTRUMENTS	1 * IP1** (XXX / XXX)	2 (XXX / XXX)
SHARED DISPLAY, SHARED CONTROL	3 (XXX / XXX)	4 (XXX / XXX)
PROGRAMMABLE LOGIC CONTROL	5 (XXX / XXX)	6 (XXX / XXX)

* SYMBOL SIZE MAY VARY ACCORDING TO THE USER'S NEEDS AND THE TYPE OF DOCUMENT. A SUGGESTED SQUARE AND CIRCLE SIZE FOR LARGE DIAGRAMS IS SHOWN ABOVE. CONSISTENCY IS RECOMMENDED.

** ABBREVIATIONS OF THE USER'S CHOICE SUCH AS IP1 (INSTRUMENT PANEL #1), IC2 (INSTRUMENT CONSOLE #2), CC3 (COMPUTER CONSOLE #3), ETC., MAY BE USED WHEN IT IS NECESSARY TO SPECIFY INSTRUMENT OR FUNCTION LOCATION.

*** NORMALLY INACCESSIBLE OR BEHIND-THE-PANEL DEVICES OR FUNCTIONS MAY BE DEPICTED BY USING THE SAME SYMBOL BUT WITH DASHED HORIZONTAL BARS, IE.

(XXX / XXX) (XXX / XXX) (XXX / XXX)

ACTUATORS OR OPERATORS

- M — MOTOR ACTUATOR
- S — SOLENOID ACTUATOR

PUMPS & COMPRESSORS

- M — SUBMERSIBLE PUMP
- CENTRIFUGAL PUMP

INSTRUMENT ABBREVIATIONS

AC	ALTERNATING CURRENT
AI	ANALOG INPUT
AM	AUTO-MANUAL
AMR	AUTO-MANUAL-REMOTE
AO	ANALOG OUTPUT
C	CLOSE
CP	CONTROL PANEL
CSP	CONSTANT SPEED PUMP
DC	DIRECT CURRENT
DI	DISCRETE INPUT
DL	DATA LINK
DO	DISCRETE OUTPUT
ETM	ELAPSED TIME METER
FRS	FLOW RATIO
HA	HAND-AUTO
HL	HIGH-LOW
HLOR	HIGH-LOW-OFF-REMOTE
HOA	HAND-OFF-AUTO
HS	HAND SWITCH
I/O	INPUT/OUTPUT
LOR	LOCAL-OFF-REMOTE
LOS	LOCK-OUT STOP
LR	LOCAL-REMOTE
MCC	MOTOR CONTROL CENTER
MCP	MASTER CONTROL PANEL
MODEM	MODULATE-DEMODULATE
O	OPEN
OAC	OPEN-AUTO-CLOSE
OO	ON-OFF
OOA	ON-OFF-AUTO
OOR	ON-OFF-REMOTE
OSC	OPEN-STOP-CLOSE
OSCA	OPEN-STOP-CLOSE-AUTO
OSCR	OPEN-STOP-CLOSE-REMOTE
P	PROPORTIONAL
P/A	PULSE TO ANALOG
PC	PARTICLE COUNTER
PID	PROPORTIONAL-INTEGRAL-DERIVATIVE
P& ID	PROCESS & INSTRUMENTATION DIAGRAM
PLC	PROGRAMMABLE LOGIC CONTROLLER
PRV	PRESSURE REDUCING VALVE
RSP	REMOTE SET POINT
RTU	REMOTE TERMINAL UNIT
SCS	SUPERVISORY CONTROL STATION
SEL	SELECT
SOV	SOLENOID VALVE
SP	SET POINT
SS	START-STOP
STCD	STATUS-TO-COMMAND DISAGREEMENT
TOT	TOTALIZATION
TPC	TIME PROPORTIONAL CONTROL
TSP	TWISTED SHIELDED PAIR
TTR	TONE TELEMETRY RECEIVER
TTT	TONE TELEMETRY TRANSMITTER
TURB	TURBIDITY

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION

AS-BUILT:

REF. DWG. X-XXXX DWG. X-XXXX
DWG. X-XXXX

DESIGNED BY: AR
DRAWN BY: VK
DESIGN CHECK BY: AJB
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
ALMA REANTASO
NO. E17285
06-30-2026
ELECTRICAL
STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
INSTRUMENTATION LEGEND

GRAPHIC SCALE

PAGE X.X.X.

FIELD BOOK X.X.X.

DRAWING REF. 11

MUNIS Project # XXXX-XXXX-XXXX

Phase# XXXX / Rebid: N/A

SHEET 63 OF 70

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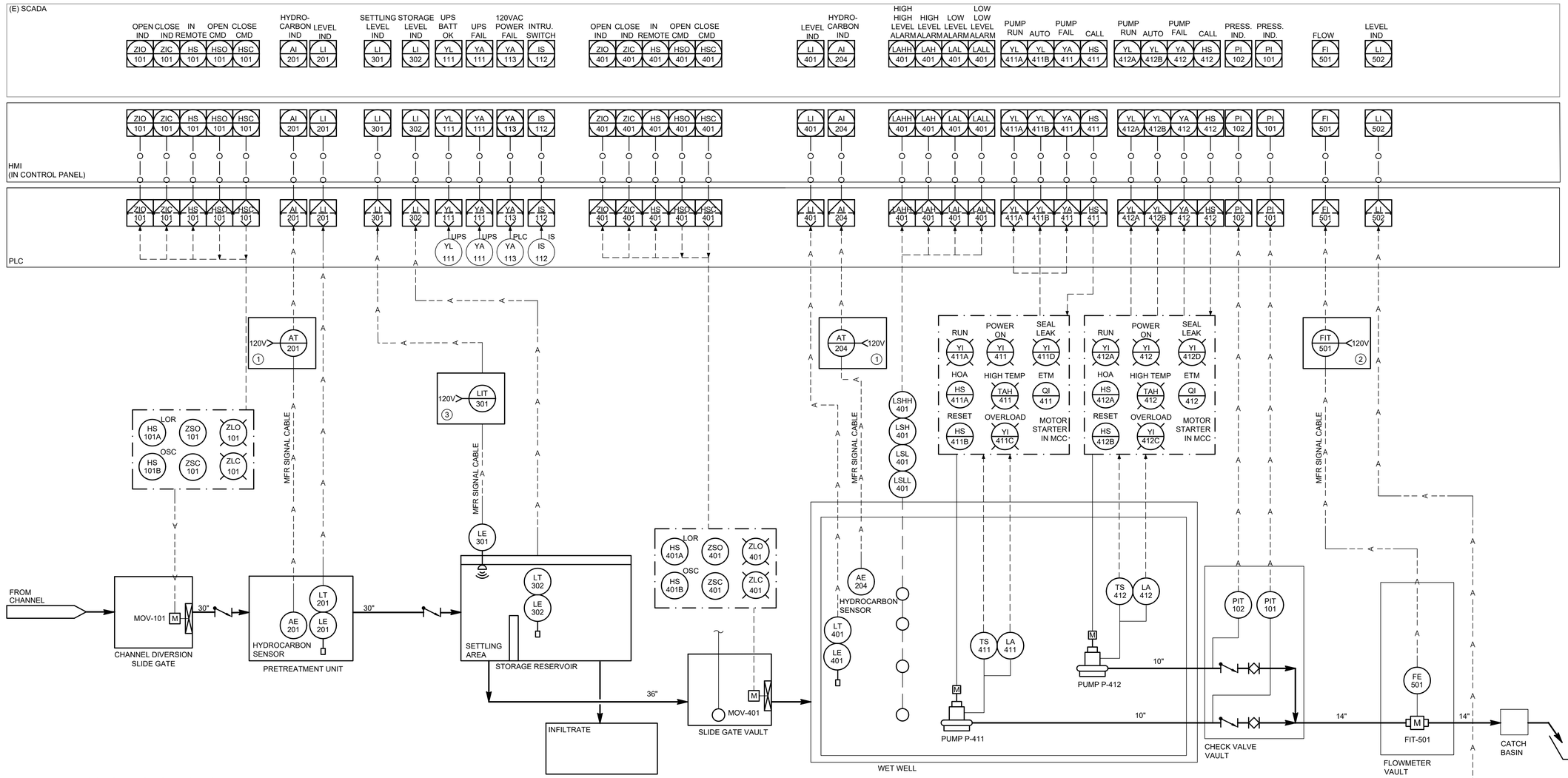

CONSTRUCTION NOTES:

1. CONTROLLER MOUNTED INSIDE PLC CABINET. SINGLE CONTROLLER WITH INPUTS FOR TWO HYDROCARBON SENSOR PROBES. PROVIDE CABLE LENGTHS AS REQUIRED FOR PROBE CONNECTIONS TO CONTROLLER.
2. FLOWMETER TRANSMITTER MOUNTED INSIDE PLC CABINET. PROVIDE CABLE LENGTH AS REQUIRED FOR FLOWMETER CONNECTION TO TRANSMITTER.
3. LEVEL TRANSMITTER FOR ULTRASONIC LEVEL TRANSDUCER INSIDE PLC CABINET. PROVIDE CABLE LENGTH AS REQUIRED FOR TRANSDUCER CONNECTIONTO TRANSMITTER.

REVISIONS | No. | DATE | SHEET | APPROVAL | DESCRIPTION

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REF. DWG. X-XXXX DWG. X-XXXX

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STATE OF CALIFORNIA

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PUMP STATION P&ID

GRAPHIC SCALE
PAGE X.X.X.
FIELD BOOK X.X.X.

DRAWING REF. 12

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Phase# XXXX / Rebid: N/A

SHEET 64 OF 70

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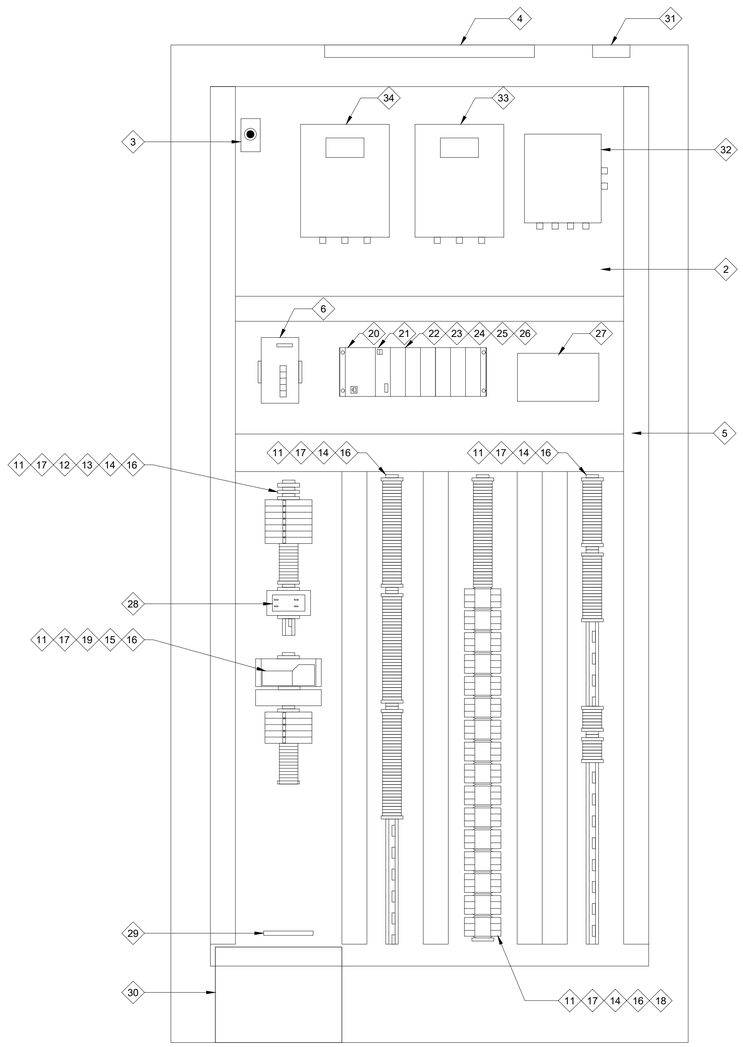
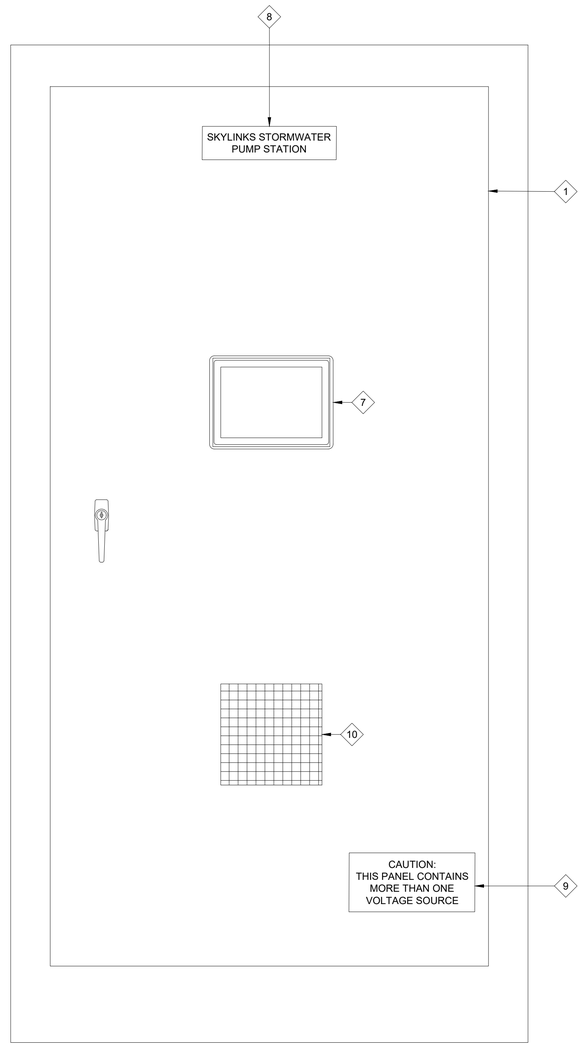


1 - PLC CONTROL PANEL INTERIOR ELEVATION
SCALE: N.T.S.



2 - PLC CONTROL PANEL EXTERIOR ELEVATION
SCALE: N.T.S.

GENERAL NOTES:

1. CONTRACTOR SHALL DESIGN CONTROL PANEL WITH ALL COMPONENTS TO PROVIDE A COMPLETE AND FULLY FUNCTIONAL CONTROL SYSTEM TO MEET REQUIREMENTS AS SHOWN ON THE DRAWINGS AND THE SPECIFICATIONS. THE ELECTRICAL AND INSTRUMENTATION DRAWINGS AND THE CONTROL FUNCTIONS DESCRIBED IN THE SPECIFICATIONS SHALL BE USED TO PROVIDE A FULL COMPLEMENT OF INPUTS AND OUTPUTS FOR A COMPLETE PLC CONTROL SYSTEM.
2. SUBMIT DRAWINGS, INCLUDING PANEL LAYOUT DRAWINGS, WIRING DIAGRAMS AND SCHEMATICS, AND BILL OF MATERIALS FOR APPROVAL IN ACCORDANCE WITH THE SPECIFICATIONS.
3. MANUFACTURER AND MODEL NUMBERS LISTED ARE THE BASIS OF DESIGN. COORDINATE WITH THE OWNER'S REPRESENTATIVE AND DESIGNATED SYSTEM INTEGRATOR TO CONFIRM EQUIPMENT SELECTED IS COMPATIBLE WITH EXISTING SYSTEMS FOR OPERATIONS AND MAINTENANCE.

LEGEND

◇# MATERIAL ITEM ID

MATERIALS LIST

ITEM	QTY	DESCRIPTION	MANUFACTURER	PART NO.	COMMENTS
1	1	ENCLOSURE, FREESTANDING, 90"H x 36"W x 24"D, NEMA 4X 304 STAINLESS STEEL, CONTINUOUS HINGE WITH 3 POINT LATCH	NVENT HOFFMAN	A903624SSFSN4	
2	1	BACKPANEL, 78"H x 32"W	NVENT HOFFMAN	A90P36F1	
3	1	ENCLOSURE THERMOSTAT	NVENT HOFFMAN	ADLTEMP	
4	1	PANEL LIGHT	NVENT HOFFMAN	LEDA1S35	PROVIDE WITH DOOR SWITCH
5	A/R	3" X 3" WIREWAY WITH COVER	PANDUIT	F3X3LG6	
6	1	ETHERNET SWITCH, 5-PORT UNMANAGED	RED LION/N-TRON	105TX	
7	1	PANELVIEW 5510 OPERATOR INTERFACE TERMINAL (HMI), 15" TOUCHSCREEN, COLOR TFT LCD DISPLAY	ALLEN-BRADLEY	2715P-T15CD	
8	1	NAMEPLATE, WHITE WITH BLACK LETTERING	OPEN		
9	1	NAMEPLATE, RED WITH WHITE LETTERING	OPEN		
10	1	ENCLOSURE FAN	NVENT HOFFMAN		
11	A/R	35 MM DIN RAIL	WEIDMULLER	7915060000	
12	1	20A/1-POLE CIRCUIT BREAKER	ALLEN-BRADLEY	1489-M1C200	
13	A/R	5A/1-POLE CIRCUIT BREAKER	ALLEN-BRADLEY	1489-M1C050	
14	A/R	TERMINAL BLOCKS - FEED THROUGH	WEIDMULLER	1143070000	
15	A/R	TERMINAL BLOCKS - FUSED	WEIDMULLER	1162920000	
16	A/R	TERMINAL BLOCKS - END STOP	WEIDMULLER	1061200000	
17	A/R	TERMINAL MARKER	OPEN		
18	A/R	24VDC TERMINAL BLOCK RELAY	ALLEN-BRADLEY	700-HLT1Z24	
19	1	24VDC POWER SUPPLY	ALLEN-BRADLEY	1606-XLP50E	
20	1	COMPACTLOGIX 5380 PLC CONTROLLER	ALLEN-BRADLEY	5069-L306-ER	ETHERNET WITH DF1 SERIAL CAPABILITY
21	1	POWER SUPPLY TERMINAL KIT	ALLEN-BRADLEY	5069-RTB64	
22	1	SERIAL INTERFACE MODULE	ALLEN-BRADLEY	5069-SERIAL	
23	2	16 POINT, 24VDC DISCRETE INPUT MODULE	ALLEN-BRADLEY	5069-IB16	MODULE TO BE SUPPLIED WITH TERMINAL BLOCK
24	1	8 POINT, 24VDC DISCRETE OUTPUT MODULE	ALLEN-BRADLEY	5069-OB8	MODULE TO BE SUPPLIED WITH TERMINAL BLOCK
25	2	16 CHANNEL ANALOG INPUT MODULE	ALLEN-BRADLEY	5069-IF8	MODULE TO BE SUPPLIED WITH TERMINAL BLOCK
26	1	PLC END CAP	ALLEN-BRADLEY	5069-ECR	
27	1	900 MHz SERIAL RADIO	GE MDS	SD09-ESS-NNSNN	OR EQUAL COMPATIBEL WITH EXISTNG RADIO COMMUNICATIONS SYSTEM FOR REMOTE MONITORING. COORDINATE WITH RADIO PATH STUDY FOR REQUIREMENTS.
28	1	RECEPTACLE, 15A, GFI, DUPLEX, DIN-RAIL MOUNT	ALLEN-BRADLEY	1492-REC15G	
29	1	GROUND BAR	ILSCO	D167-8	
30	1	UNINTERRUPTIBLE POWER SUPPLY	APC		PROVIDE UPS WITH MAINTENANCE BYPASS SWITCH
31	1	INTRUSION SWITCH			
32	1	HYDROCARBON SENSOR CONTROLLER	HACH		SUPPLIED WITH HYDROCARBON SENSORS; SEE INSTRUMENT SPECIFICATIONS
33	1	FLOWMETER TRANSMITTER	ENDRESS +HAUSER		SUPPLIED WITH MAGNETIC FLOWMETER; SEE INSTRUMENT SPECIFICATIONS
34	1	LEVEL TRANSMITTER	SIEMENS		SUPPLIED WITH LEVEL SENSOR; SEE INSTRUMENT SPECIFICATIONS

REVISIONS: No. | DATE | SHEET | APPROVAL | DESCRIPTION
AS-BUILT:
REF. DWG. X-XXXX DWG. X-XXXX
REF. DWG. X-XXXX

DESIGNED BY: AR
DRAWN BY: VK
DESIGN CHECK BY: AJB
DRAFTING CHECK BY:

REGISTERED PROFESSIONAL ENGINEER
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NO. E17285
06-30-2026
ELECTRICAL
STATE OF CALIFORNIA

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
CONTROL PANEL DETAIL

GRAPHIC SCALE
PAGE
FIELD BOOK X.X.X.
DRAWING REF. 13

MUNIS Project # XXXX-XXXX-XXXX
Phase# XXXX / Rebid: N/A
SHEET 65 OF 70
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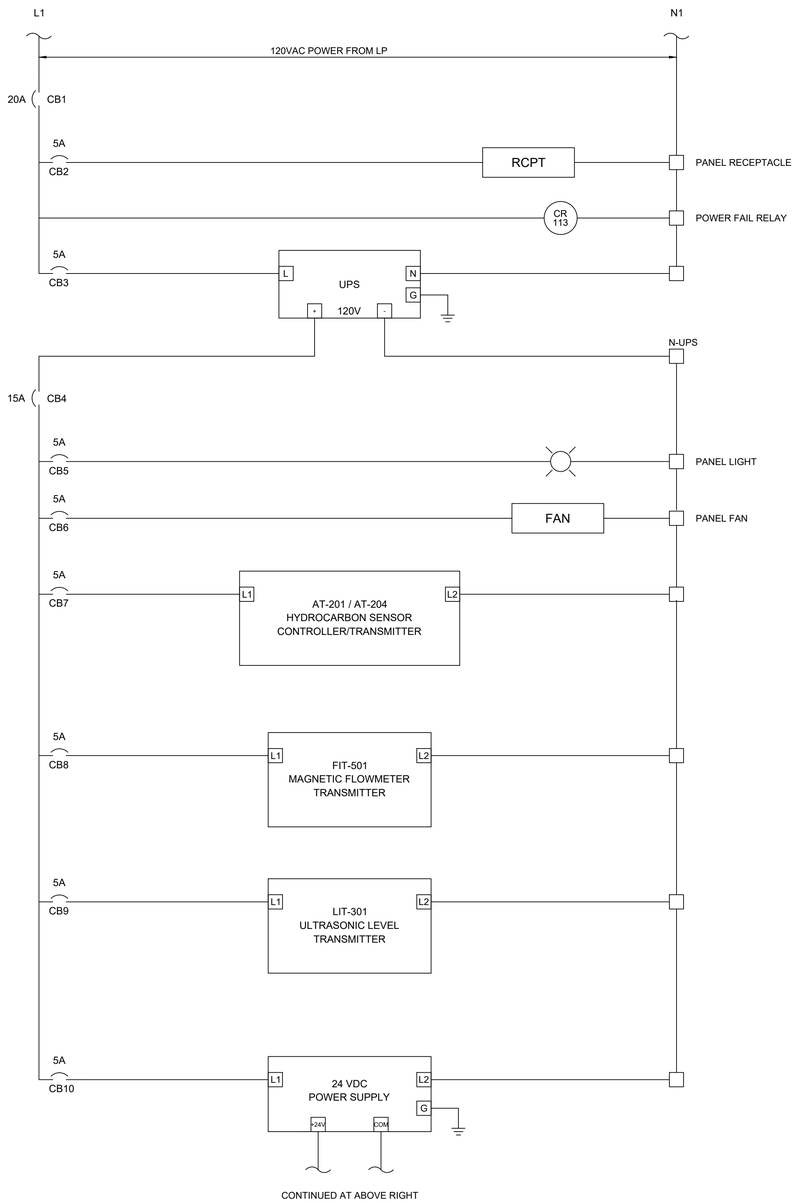

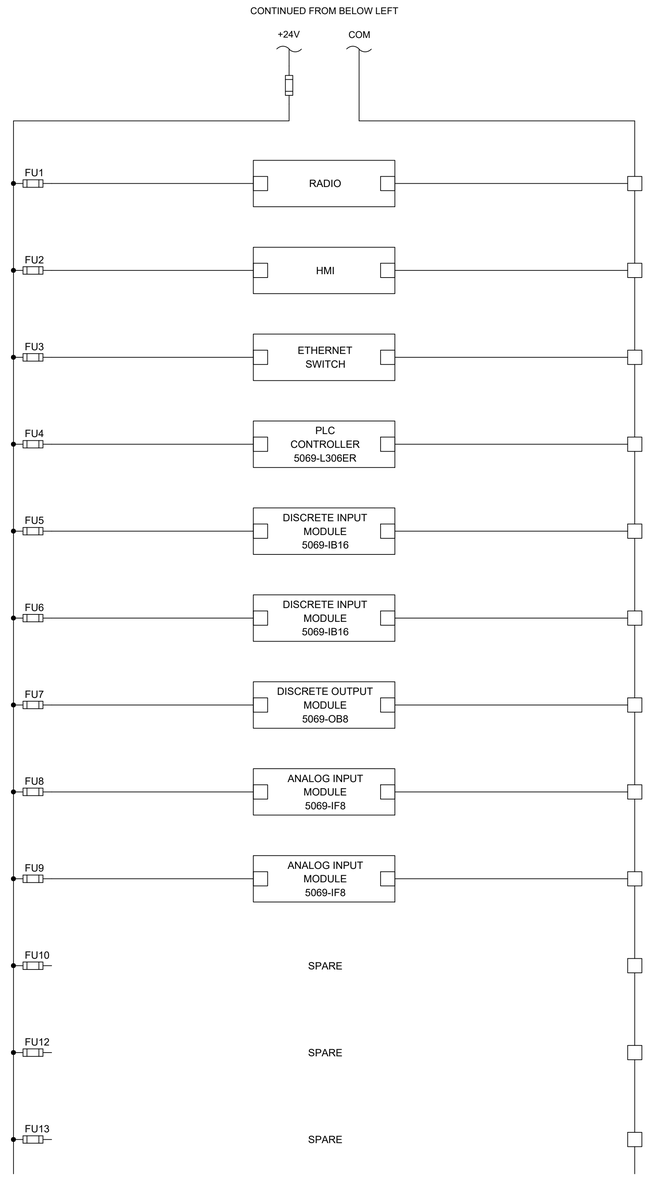

GENERAL NOTES

1. CONTRACTOR SHALL DESIGN CONTROL PANEL WITH ALL COMPONENTS TO PROVIDE A COMPLETE AND FULLY FUNCTIONAL CONTROL SYSTEM TO MEET REQUIREMENTS AS SHOWN ON THE DRAWINGS AND THE SPECIFICATIONS. THE ELECTRICAL AND INSTRUMENTATION DRAWINGS AND THE CONTROL FUNCTIONS DESCRIBED IN THE SPECIFICATIONS SHALL BE USED TO PROVIDE A FULL COMPLEMENT OF INPUTS AND OUTPUTS FOR A COMPLETE PLC CONTROL SYSTEM.
2. SUBMIT DRAWINGS, INCLUDING PANEL LAYOUT DRAWINGS, WIRING DIAGRAMS AND SCHEMATICS, AND BILL OF MATERIALS FOR APPROVAL IN ACCORDANCE WITH THE SPECIFICATIONS.

LEGEND

- • DEVICE LOCATED IN FIELD
- ——— LOCAL WIRING
- — — — FILED WIRING
- ° FIELD TERMINAL
- □ TERMINAL IN CONTROL CABINET

REVISIONS

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				REF. DWG. X-XXXX
				REF. DWG. X-XXXX
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SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
PLC PANEL POWER WIRING DIAGRAM

GRAPHIC SCALE
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FIELD BOOK X.X.X.
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MUNIS Project # XXXX-XXXX-XXXX
Phase# XXXX / Rebid: N/A
SHEET 66 OF 70
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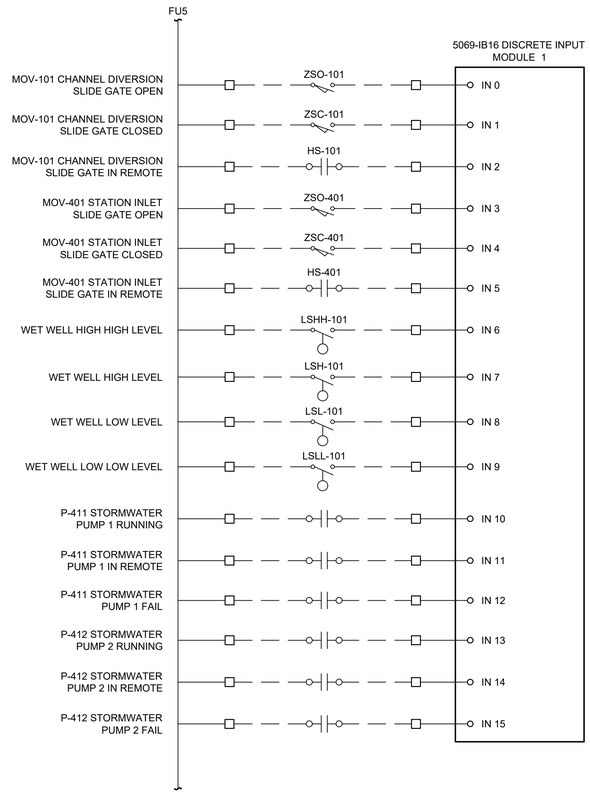
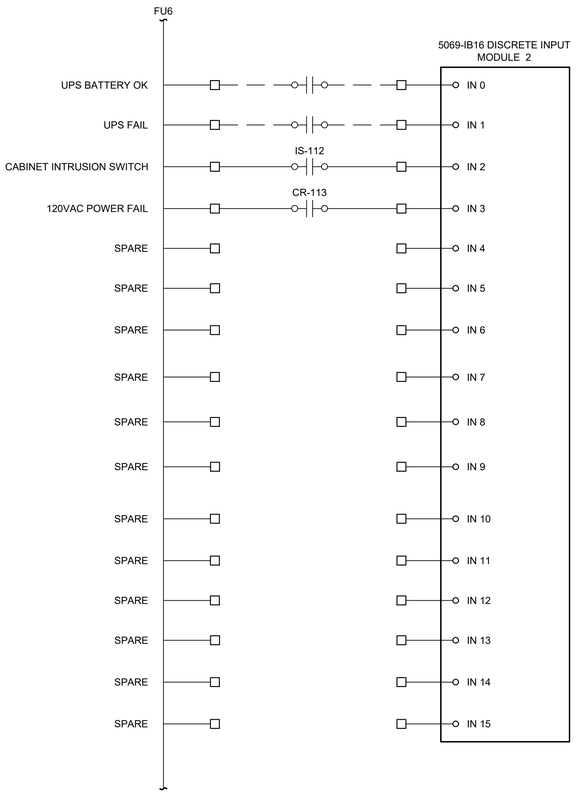


1 PLC DISCRETE INPUT WIRING DIAGRAM 1
SCALE: N.T.S.



2 PLC DISCRETE INPUT WIRING DIAGRAM 2
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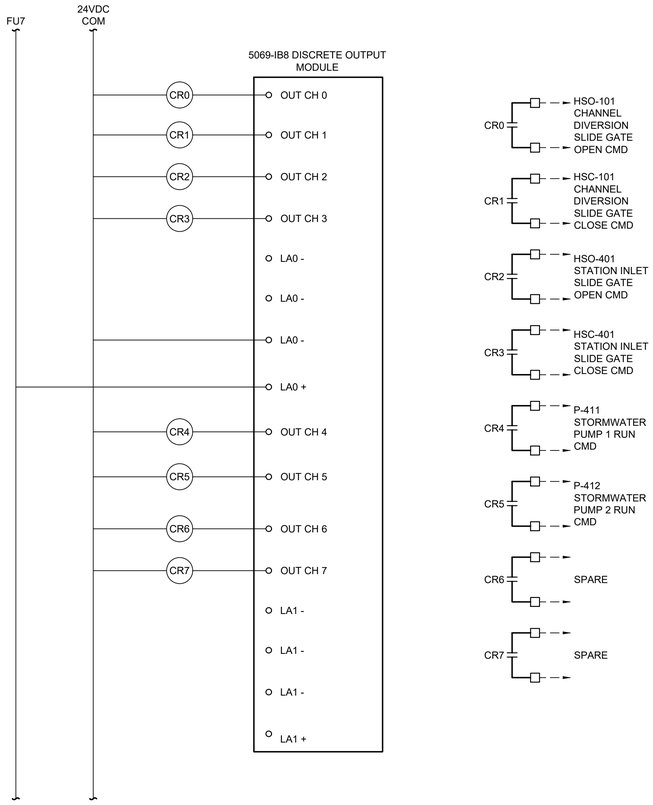

3 PLC DISCRETE OUTPUT WIRING DIAGRAM
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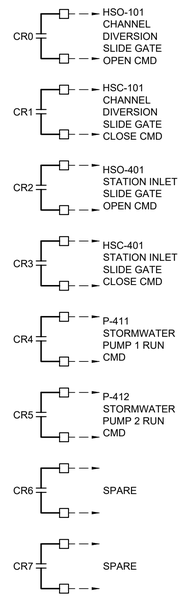

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DRAFTING CHECK BY:

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STATE OF CALIFORNIA

SKYLINKS REGIONAL
STORMWATER CAPTURE PROJECT
PLC DISCRETE IO WIRING DIAGRAMS

GRAPHIC SCALE
PAGE X.X.X.
FIELD BOOK X.X.X.

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Phase# XXXX / Rebid: N/A
SHEET 67 OF 70
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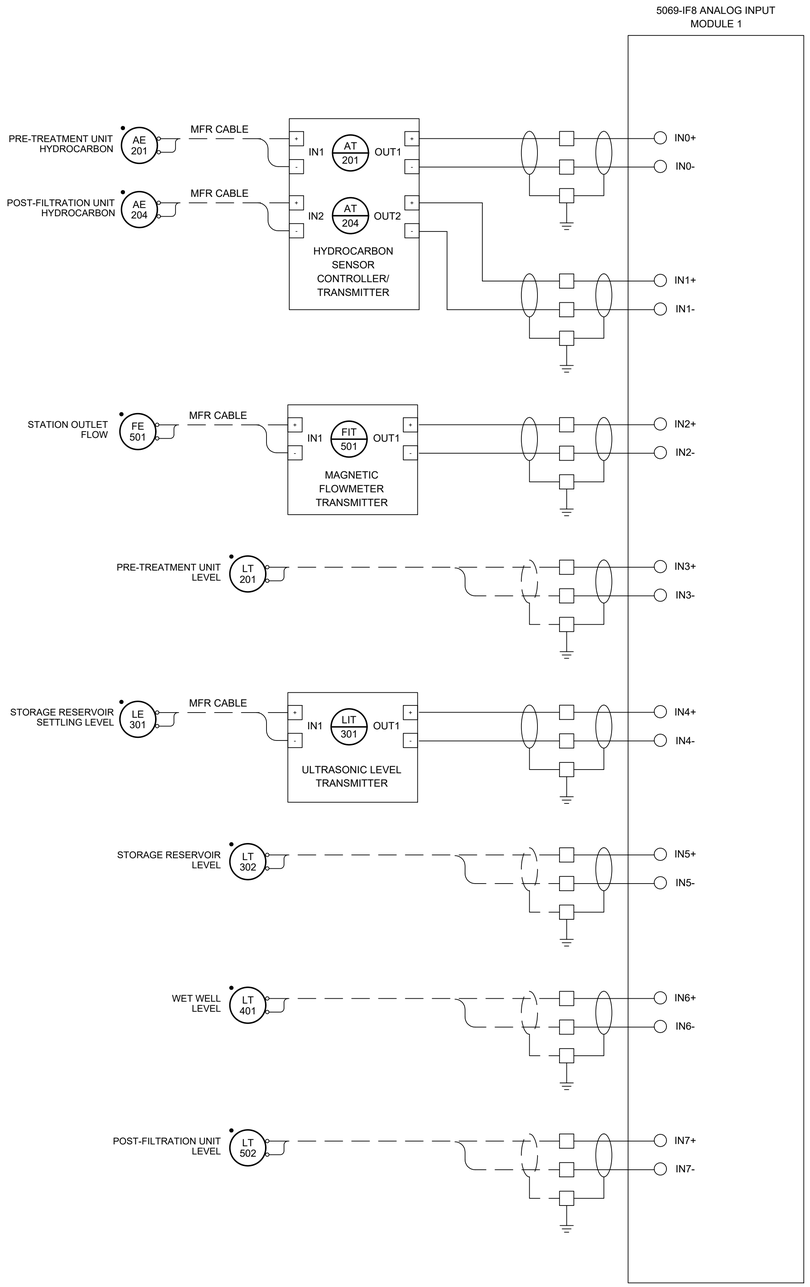

1 - PLC ANALOG INPUT WIRING DIAGRAM 1

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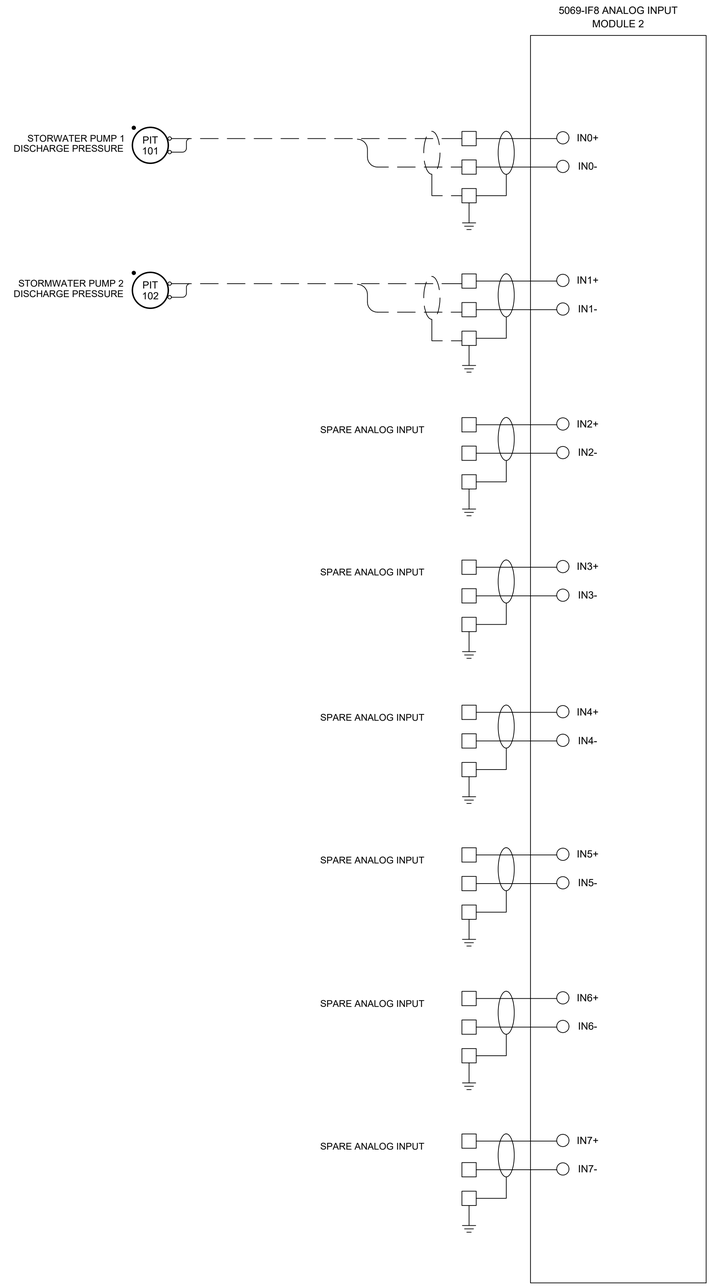

2 - PLC ANALOG INPUT WIRING DIAGRAM 2

SCALE: N.T.S.

LEGEND

- DEVICE LOCATED IN FIELD
- LOCAL WIRING
- FILED WIRING
- FIELD TERMINAL
- TERMINAL IN CONTROL CABINET

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION
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SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
PLC ANALOG IO WIRING DIAGRAMS

GRAPHIC SCALE
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FIELD BOOK X.X.X.

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SHEET 68 OF 70

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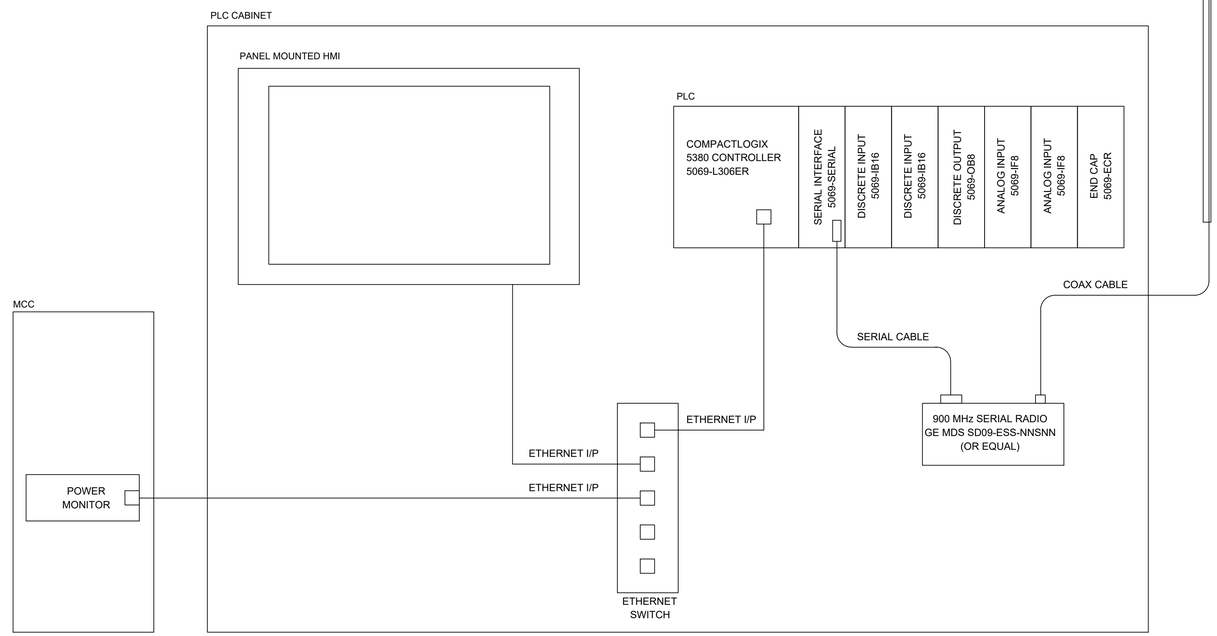
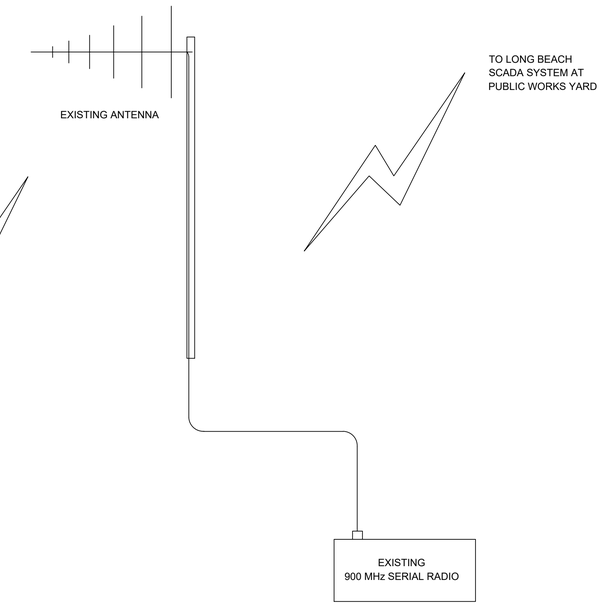


SKYLINKS STORMWATER STATION



SIGNAL HILL MASTER STATION

1 - PLC NETWORK DIAGRAM
SCALE: N.T.S.

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				REF. DWG. X-XXXX
				DWG. X-XXXX

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PLC NETWORK DIAGRAM

GRAPHIC SCALE
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FIELD BOOK X.X.X.

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Phase# XXXX / Rebid: N/A
SHEET 69 OF 70

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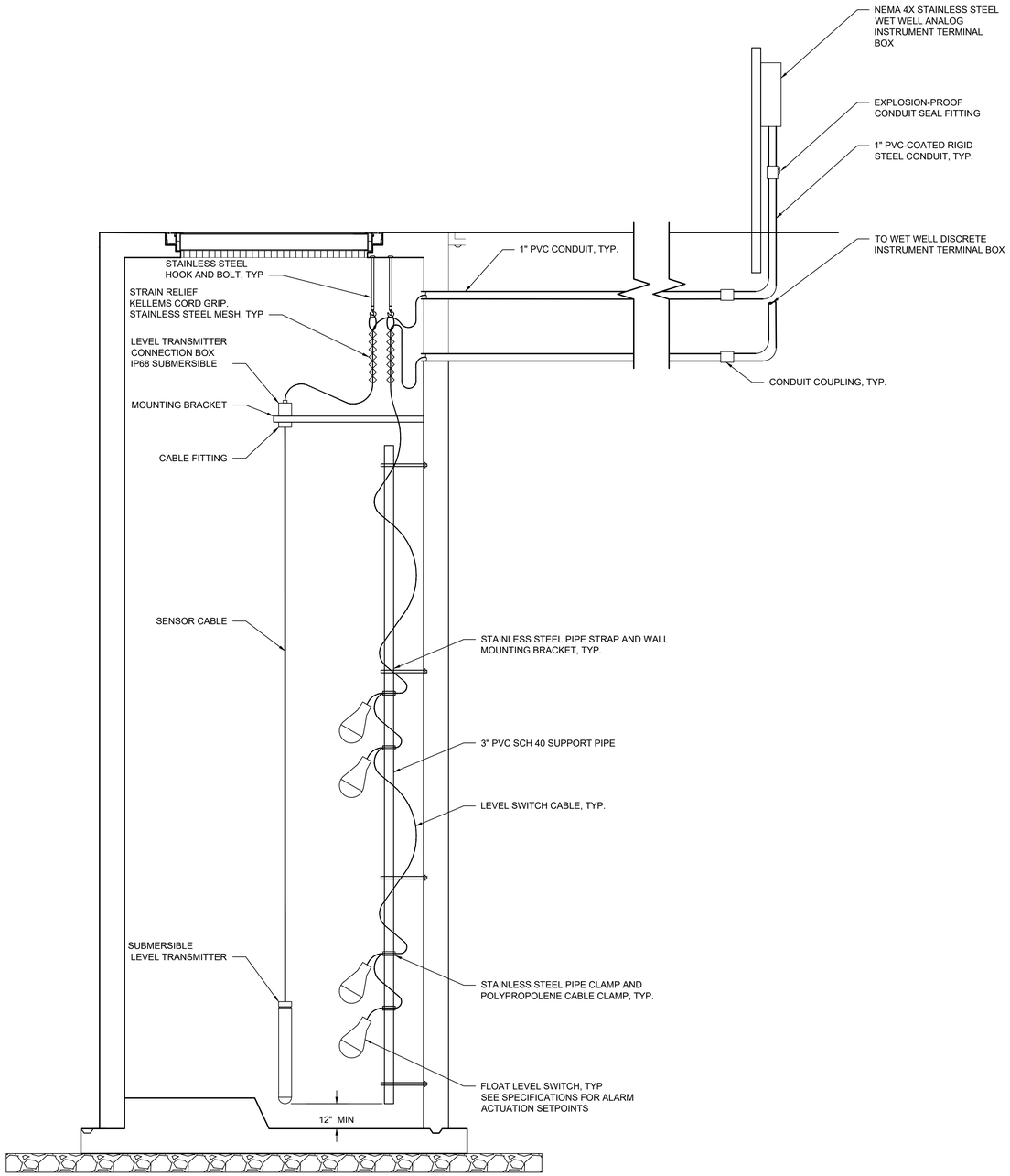
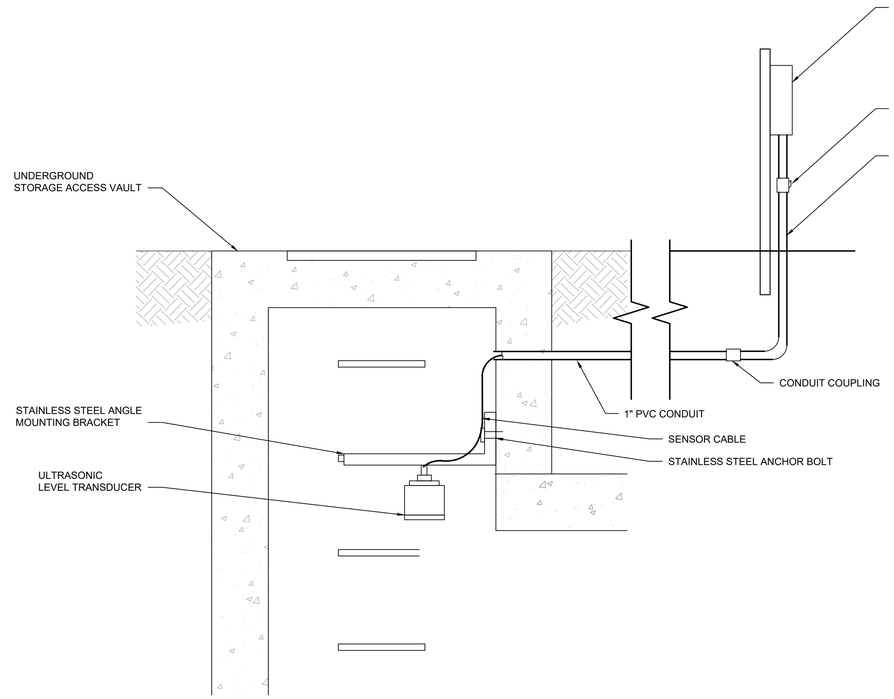


1 E4 WET WELL LEVEL INSTRUMENTATION INSTALLATION DETAIL

SCALE: N.T.S.



2 E2 ULTRASONIC LEVEL TRANSMITTER INSTALLATION DETAIL

SCALE: N.T.S.

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				REF. DWG. X-XXXX DWG. X-XXXX
				REF. DWG. X-XXXX DWG. X-XXXX
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SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
INSTRUMENTATION DETAILS

GRAPHIC SCALE
PAGE X.X.X.
FIELD BOOK X.X.X.

DRAWING REF. 18

MUNIS Project # XXXX-XXXX-XXXX
Phase# XXXX / Rebid: N/A
SHEET 70 OF 70
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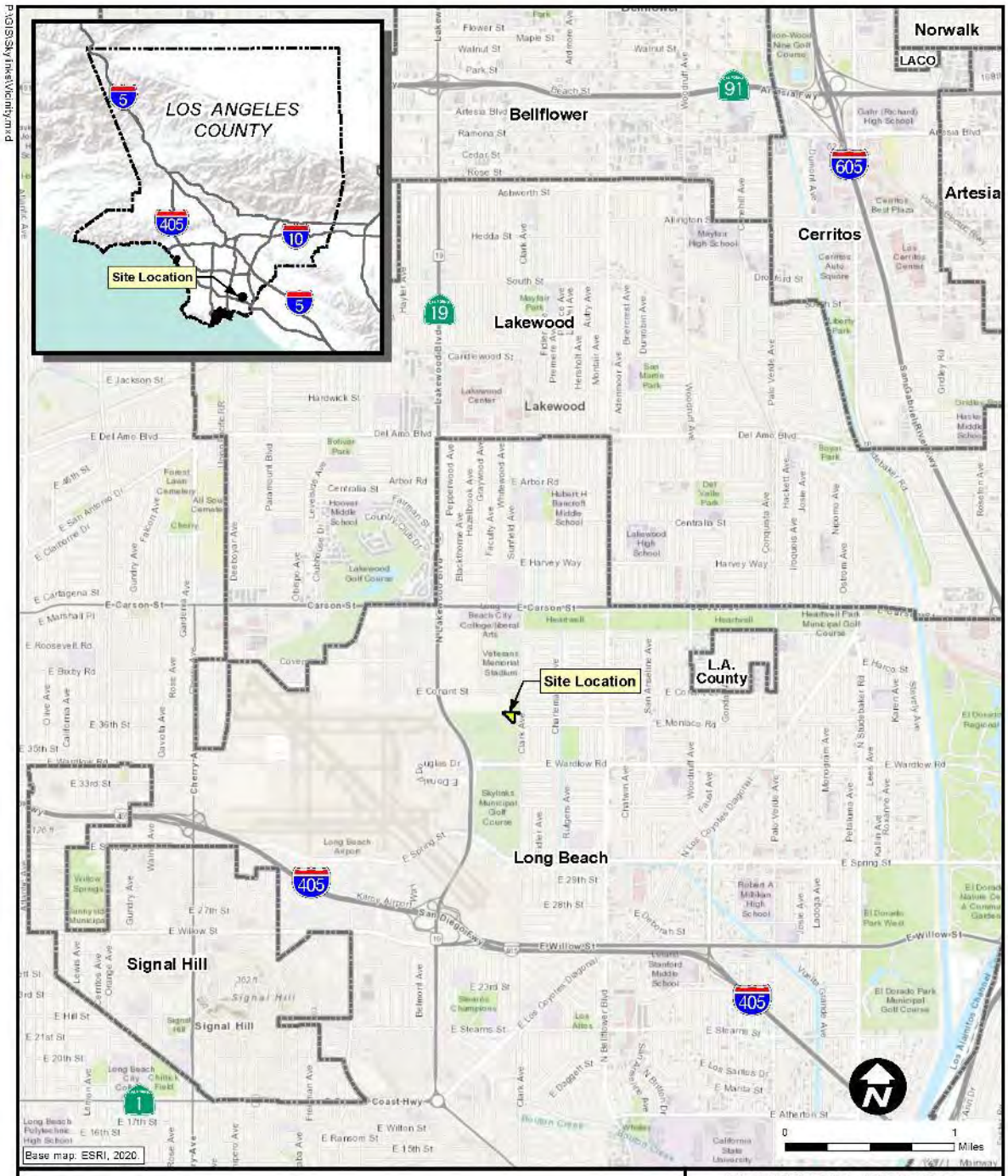
Part 3. Project Figures


P:\GIS\Skylinks\Vicinity.mxd
LOS ANGELES COUNTY
Site Location
Norwalk
LACO
Bellflower
Artesia
Cerritos
Lakewood
Site Location
L.A. County
Long Beach
Signal Hill
Base map: ESRI, 2020.
0
1
Miles
City Boundary
SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
Figure 1
Vicinity Map
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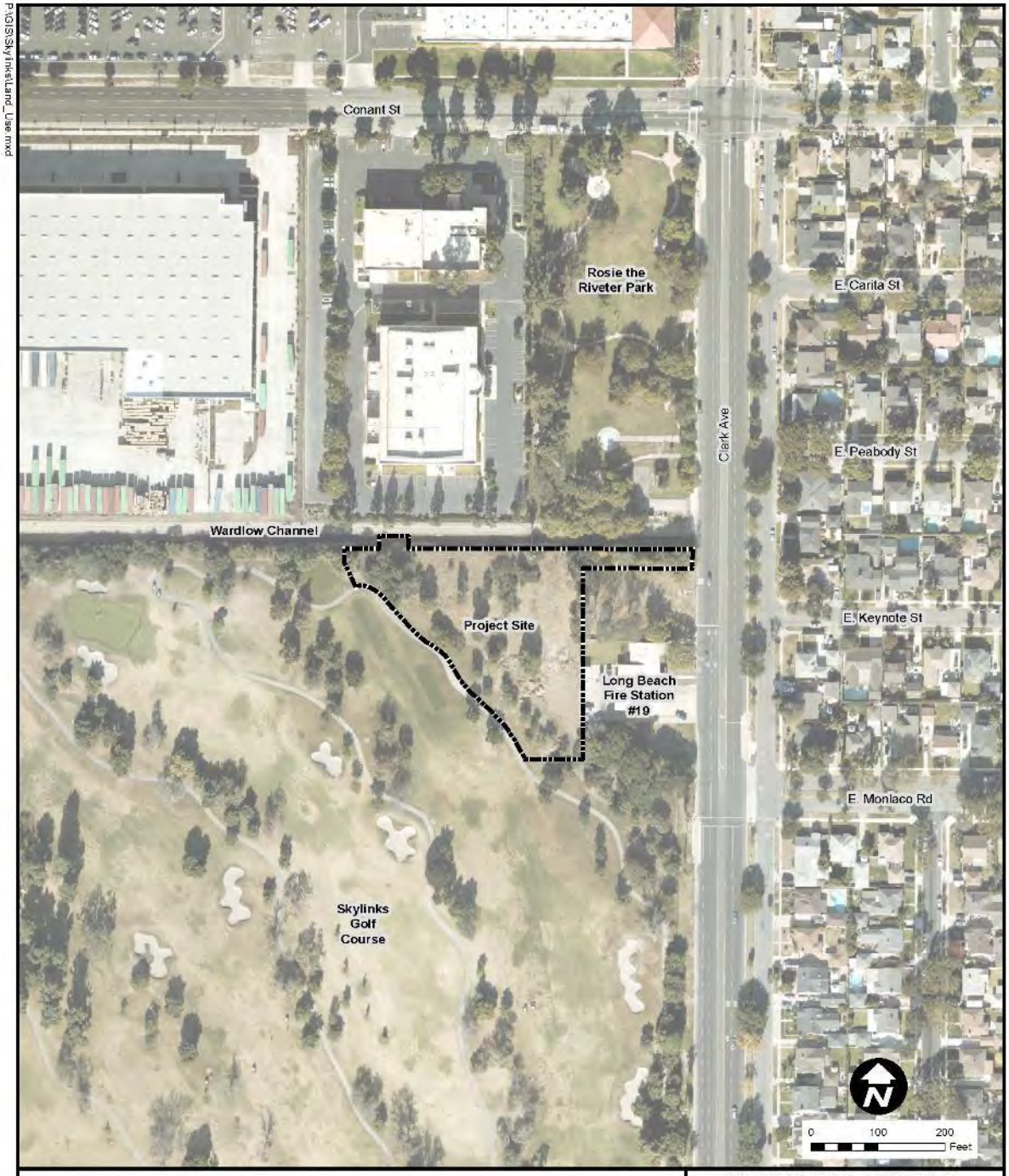

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT

Figure 2

Project Location Aerial and Surrounding Land Use

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NAD 1983 StatePlane California V FIPS 0405 Feet

0 25 50 100 Feet

NOT FOR CONSTRUCTION

Skylinks Regional Stormwater Capture Project

Figure 3.
Project Impacts

LOS ANGELES COUNTY, CA

Project Boundary

Permanent Impact to RWQCB Waters of the State/CDFW Streambed

This map is for representative purposes only and is not intended for construction use.

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Reference Map

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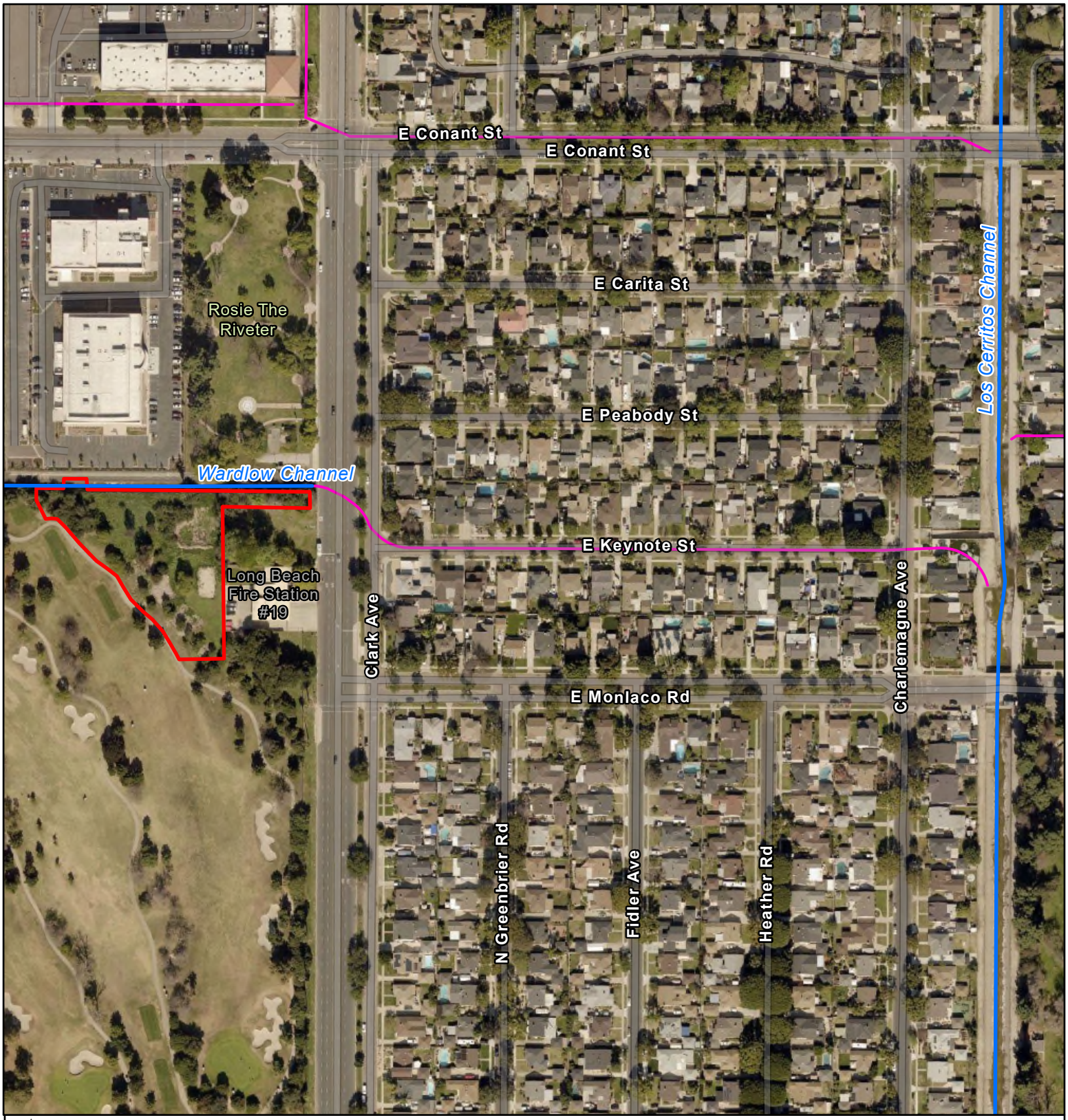

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NAD 1983 StatePlane California V FIPS 0405 Feet

0 50 100 200 Feet

NOT FOR CONSTRUCTION

Skylinks Regional Stormwater Capture Project

Figure 4.
Project Area

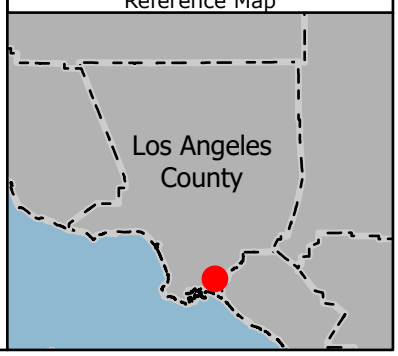
LOS ANGELES COUNTY, CA

- Project Boundary
- Open Channel (Improved)
- Storm Drain Gravity Main

(Los Angeles County Public Works 2025)

TETRA TECH

Reference Map



Part 4. General Biological Survey Letter Report

TETRA TECH

April 27, 2023

Ms. Maryanne Cronin
Project Planner
City of Long Beach
411 West Ocean Boulevard
Long Beach, California 90802
maryanne.cronin@longbeach.gov

RE: General Biological Survey Letter Report for the Skylinks Regional Stormwater Capture Project, Los Angeles County, California

Dear Ms. Cronin:

The purpose of this letter is to describe the methods and results of a general biological survey and literature review for the Skylinks Regional Stormwater Capture Project (Project), Los Angeles County, California. A monarch butterfly (*Danaus plexippus*) and tree survey was also conducted at the Project site in February and March 2023 and the methods and results are provided in a separate report (Tetra Tech 2023). The Project is subject to the guidelines and regulations of the California Environmental Quality Act (CEQA). The lead agency for CEQA is the City of Long Beach.

PROJECT DESCRIPTION

The proposed Project site is 1.6 acres and includes the construction of a regional stormwater capture and filtration facility. The facility would be located beneath an undeveloped area at the northeast corner of Skylinks Golf Course in the City of Long Beach. The existing Project site is comprised of non-native ornamental trees and non-native grasses, and no native habitats are present onsite. The objective of the Project is to improve water quality in the Los Cerritos Channel Watershed by reducing pollutant loads in stormwater runoff. The Project would intercept the dry-weather flow and a sizeable portion of the stormwater flows from the Wardlow Channel (Los Angeles County Flood Control District improved channel adjacent to the Project site) to the Skylinks Golf Course stormwater capture system. Stormwater would be conveyed through treatment systems, storage galleries, and through created wetland areas to improve water quality, infiltrate into the underlying soils, and in certain instances be pumped back into the channel, post treatment and post rainfall event. Trees and vegetation would be removed from the entire Project site during construction. Excavation depths are anticipated to extend 25 to 30 feet below the existing ground surface. Once the underground concrete capture and infiltration system is installed, it would be covered with some of the excavated material and the site will be graded in preparation for landscaping. After construction, tree replacement and revegetation with native species would be implemented onsite in accordance with City of Long Beach Municipal Code Chapter 14.28 – Trees and Shrubs, and the City Tree Maintenance Policy, including using trees from the Approved Street Tree List.

PROJECT LOCATION

The proposed Project site (1.6 acres) is located on undeveloped land (except for landscaping consisting of non-native trees and non-native grasses) within the northeast corner of the 160-acre Skylinks Golf Course, a public golf course owned by the City of Long Beach. The Project site is at 3559 1/2 Clark Avenue, Long Beach, California. Commercial and industrial buildings are located north of the Project site, the Long Beach Fire Department Station 19 and Clark Avenue are to the east, and the Skylinks Golf Course green is to the south and west. The Project is located at 33.822910, -118.134984 within the United States Geological Survey (USGS) 7.5-minute Long Beach, California, quadrangle, not sectioned (Attachment 1, Figures 1 and 2).

LITERATURE REVIEW

A literature search of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) was conducted to determine known occurrences of candidate, sensitive, or special-status species or habitats within the Project site and surrounding Long Beach quadrangle. The species presented in Table 1 are those that have the potential to occur within or adjacent to the Project site based on regional occurrence (CDFW 2022). One rare plant, Horn's milk-vetch (*Astragalus hornii* var. *hornii*), has a previous record from 1896 that overlaps with the Project site; this record occurs in a large area with very low accuracy (5-mile radius) and is listed as extirpated (CDFW 2022). In addition, no habitat for this species occurs on the Project site. No other species listed in Table 1 has been previously observed within the Project site (CDFW 2022). Since the site is comprised of non-native grassland and ornamental trees, species that only inhabit dune, playas, marsh, coastal, wetland, vernal pool, riparian, chaparral, or scrub habitats have not been included in the table, since those habitats are not present within or adjacent to the site.

Table 1. Special-Status Species with Potential to Occur

Common Name	Scientific Name	Federal Status / State Status	Other Status	Habitat
Plants				
Coulter's saltbush	*Atriplex coulteri*	- / -	1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland. Flowering time is Mar-Oct.
Southern tarplant	*Centromadia parryi* ssp. *australis*	- / -	1B.1	Marshes and swamps (margins), valley and foothill grassland, vernal pools. Flowering time is Jun-Oct.
Lyon's pentachaeta	*Pentachaeta lyonii*	FE / SE	1B.1	Chaparral, valley and foothill grassland, coastal scrub. Flowering time is Mar-Aug.
San Bernardino aster	*Symphyotrichum defoliatum*	- / -	1B.2	Meadows and seeps, cismontane woodland, coastal scrub, lower montane coniferous forest, marshes and swamps, valley and foothill grassland. Flowering time is Jul-Nov.

Common Name	Scientific Name	Federal Status / State Status	Other Status	Habitat
Reptiles and Amphibians				
Coast horned lizard	*Phrynosoma blainvillii*	- / -	SSC	Prefers chaparral, coastal scrub, riparian scrub, riparian woodland, and valley and foothill grassland habitats; most common in lowlands along sandy washes with scattered low bushes.
Invertebrates				
Crotch bumble bee	*Bombus crotchii*	- / -	Tracked by CDFW	Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.
Monarch butterfly	*Danaus plexippus*	FC / -	Tracked by CDFW	Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.

Notes:
FE = Federally Listed Endangered SE = State Listed Endangered
FC = Federal Candidate
California Native Plant Society, California Rare Plant Rank
1B = Plants Rare, Threatened, or Endangered in California and elsewhere
0.1 = Seriously threatened in California (over 80% of occurrences threatened)
0.2 = Moderately threatened in California (20-80% occurrences threatened)

FIELD SURVEY METHODS

A general biological field survey was conducted at the Project site on September 9, 2021. The survey was conducted during daylight hours and the temperature was approximately 70-80 degrees Fahrenheit, wind speeds were 0-10 miles per hour, and conditions were clear. The biological survey was conducted to assess habitat for special-status wildlife species that have the potential to occur within the Project site. One biologist, Ms. Sara Townsend, used systematic field techniques by walking meandering transects throughout the entire Project site to assess habitat and potentially observe special-status species or their sign. Any potential habitat for special-status species was thoroughly searched for individuals or sign. Habitat bordering the site was also assessed. Any special-status species or their sign (e.g., nests, burrows, roosts) observed or detected during the survey was recorded. A list of plant and wildlife species observed onsite was also recorded. In addition, vegetation communities were mapped during the survey based on dominant plant species present.

Ms. Victoria Prado visited the Project site on February 21, 2023 to collect additional wetlands data. During the visit, the Project site was checked for hydrologic connectivity to the Wardlow Channel. The site was also investigated for the presence of hydrophytic vegetation, wetland hydrology, and hydric soil. The wetland datasheets are provided in Attachment 3. On the same day, Ms. Prado conducted a monarch butterfly and tree survey, the results of which are provided in a separate report.

FIELD SURVEY RESULTS

VEGETATION

Vegetation at the Project site was a mixture of primarily non-native ornamental trees and non-native grasses. Figure 3 (Attachment 1) shows the following vegetation types identified at the Project site: (1) Grassland and Ornamentals, (2) Chinese Elm and Ornamentals, (3) Cultivated Grass, and (4) Aleppo Pine Stand. Figure 3 (Attachment 1) shows vegetation communities within both the Project site and immediately adjacent areas. Plants in the herb layer were largely senesced within the site, except for small patches of spurge (*Euphorbia* sp.) and irrigated grasses along the edge of the Skylinks Golf Course and north of Long Beach Fire Department Station 19. Non-native Russian thistle (*Salsola tragus*) also occurs throughout the site. Photographs that were taken during the survey are provided in Attachment 2.

Grassland and Ornamentals (Attachment 2, Photographs 1 and 2): This vegetation type covered the most area within the Project site. It is a mix of non-native grasses (brome [*Bromus* sp.], oats [*Avena* sp.], barley [*Hordeum* sp.], and Bermuda grass [*Cynodon dactylon*]) and ornamental trees, including Chilean pepper trees (*Schinus polygama*), Brazilian pepper trees (*Schinus terebinthifolia*), fern pines (*Afrocarpus gracilior*), carrotwood (*Cupaniopsis anacardioides*), blue jacaranda (*Jacaranda mimosifolia*), Peruvian pepper trees (*Schinus molle*), and eucalyptus (*Eucalyptus* sp.).

Chinese Elm and Ornamentals (Attachment 2, Photograph 3): North of the fire station is a stand of primarily Chinese elms (*Ulmus parvifolia*), several of which are well established mature trees. Other species in this stand include weeping bottlebrush (*Melaleuca viminalis*), Shamel ash (*Fraxinus uhdei*), fan palms (*Washingtonia* sp.), Taiwanese rain tree (*Koelreuteria elegans*), tree of heaven (*Ailanthus altissima*), Chilean pepper trees, and Brazilian pepper trees. Only a small portion of this vegetation community is within the Project site.

Cultivated Grass (Attachment 2, Photograph 4): The Chinese elm area borders an expanse of cultivated and irrigated grass comprised of non-native Bermuda grass. This grass area is fenced from the golf course by a fence extending from the northwest corner of the fire station due north to the concrete channel. Only a small portion of this vegetation community is within the Project site.

Aleppo Pine Stand (Attachment 2, Photographs 5 and 6): South of the Long Beach Fire Department Station 19 is an area dominated by mature Aleppo pine (*Pinus halepensis*). There are about six trees in total and each one is over a foot in diameter and some have up to a two foot diameter. A majority of this vegetation type is outside but adjacent to the Project site.

A concrete drainage channel (Wardlow Channel) runs east-west along the entire length of the Project site to the north. On the north side of the channel is Rosie the Riveter Park, which is comprised of cultivated grass and blue jacaranda. West of the site are the cultivated grounds of the Skylinks Golf Course. These areas adjacent to the Project site are shown in Photographs 7 through 10 (Attachment 2).

WETLANDS

There are no wetlands within the Project site and no hydrologic connection to the concrete drainage channel (i.e., Wardlow Channel) located north of the site. In addition, no riparian habitats are present. No areas of hydrophytic vegetation, wetland hydrology, or hydric soil were found on the Project site. The concrete drainage channel north of the site was unvegetated and wetland hydrology was found within the channel in the form of standing surface water that was about 0.5 inches deep during the 2023 site visit.

SPECIAL-STATUS SPECIES HABITATS

Potential special-status species that may occur on the Project site include those that inhabit open grasslands and ornamental trees. No special-status species were observed within or adjacent to the Project site during the survey. In addition, there are no migration corridors and no native habitats within the Project site or within a one-mile radius or more.

Although one of the plants listed in Table 1 would not have been flowering at the time of the survey (Lyon's pentachaeta [*Pentachaeta lyonii*]), no evidence of any special-status plant species or their habitat was found during the survey. In addition, all records of these species near the Project site are historical from 1932 and/or listed as extirpated/possibly extirpated (CDFW 2022). Overall, special-status plant species have a low potential to occur due to disturbance at the Project site and use as a golf course that has resulted in a high cover of non-native grasses and ornamental plants.

The coast horned lizard (*Phrynosoma blainvillii*) prefers chaparral, coastal scrub, riparian scrub, riparian woodland, and valley and foothill grassland habitats. While the Project site may provide low quality non-native grassland habitat in some areas, the site is heavily trafficked, small, and disconnected from adjacent habitats that may support this species. Therefore, this species has a low potential to be present in the Project site.

Several bumble bees were observed during the biological survey surrounding Brazilian and Peruvian pepper trees. However, none of the preferred food plant genera for Crotch bumble bees (*Bombus crotchii*) were observed, including *Phacelia*, *Clarkia*, *Antirrhinum*, *Dendromecon*, *Eschscholzia* and *Eriogonum* spp. Therefore, Crotch bumble bee has a low potential to occur in the Project site.

Monarch butterfly roosts are typically located in wind-protected tree groves with nectar and water sources nearby. The nearest roosting records of this species are approximately 0.5 mile northeast of the Project site from 1998 at Heartwell Park, and 3 miles southeast of the site from 2016 at El Dorado Nature Center (CDFW 2022). A monarch butterfly and tree survey was conducted at the Project site in 2023 and the results are provided in a separate report (Tetra Tech 2023). No monarchs or overwintering roosts were found, and the trees observed within the Project site are unlikely to provide roosting habitat for monarch butterflies (Tetra Tech 2023).

Trees on the Project site may provide habitat for nesting birds.

PLANT AND WILDLIFE SPECIES OBSERVED

Plant and wildlife species that were observed during the survey are listed in Tables 2 and 3.

Table 2. Plant Species Observed

Common Name	Scientific Name
Fern pine*	*Afrocarpus gracilior**
Tree of heaven*	*Ailanthus altissima**
Oats*	*Avena* sp.*
Brome*	*Bromus* sp.*
Carrotwood*	*Cupaniopsis anacardioides**
Bermuda grass*	*Cynodon dactylon**
Eucalyptus*	*Eucalyptus* sp.*
Spurge	*Euphorbia* sp.
Shamel ash*	*Fraxinus uhdei**
Barley*	*Hordeum* sp.*
Blue jacaranda*	*Jacaranda mimosifolia**
Taiwanese rain tree*	*Koelreuteria elegans**
Weeping bottlebrush*	*Melaleuca viminalis**
Aleppo pine	*Pinus halepensis*
Russian thistle*	*Salsola tragus**
Peruvian pepper tree*	*Schinus molle**
Chilean pepper tree*	*Schinus polygama**
Brazilian pepper tree*	*Schinus terebinthifolia**
Chinese elm*	*Ulmus parvifolia**
Fan palm	*Washingtonia* sp.

Note:
*Non-native plant species.

Table 3. Wildlife Species Observed

Common Name	Scientific Name	Taxa
California ground squirrel*	*Otospermophilus beecheyi**	Mammal
American crow	*Corvus brachyrhynchos*	Bird
Western mockingbird	*Mimus polyglottos*	Bird
Spiny lizard	*Sceloporus sp.*	Reptile
Bumble bee	*Bombus* sp.	Insect

Note:
*Burrowing by California ground squirrel was observed throughout the site.

RECOMMENDATIONS

The results of the survey have been used to develop recommendations for pre-construction surveys and avoidance and minimization measures. The recommendations within this report are preliminary and will be refined during the CEQA process as more details about the Project design and schedule are determined.

Nesting birds have the potential to nest on the Project site. Therefore, the following measure is recommended for these species:

- A pre-construction nesting bird survey shall be completed by a qualified biologist to determine if active nests of special-status birds or bird species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code, are present in the Project site or within 300 feet of the site. The survey shall be conducted within one week prior to initiation of Project activities that would occur during the nesting bird season (January 1 to September 30). If an active nest is found, a no-activity buffer shall be established by the biologist based on the bird species and construction activity. Construction within the no-work buffer shall be postponed or halted, at the discretion of the biologist, until the nest is vacated, juveniles have fledged, and adults and young are no longer reliant on the nest for survival.

The following measure is recommended for trees that occur on the Project site:

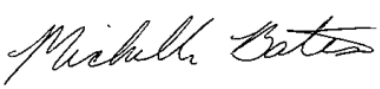
- Tree removal and replacement shall be performed in accordance with the City of Long Beach Municipal Code Chapter 14.28 – Trees and Shrubs, and the City Tree Maintenance Policy, including using the trees from the Approved Street Tree List. All trees removed that meet criteria for replacement need to be replaced at a 2:1 ratio. Trees that need to be removed and replaced shall be approved by the City of Long Beach.

If impacts to the Wardlow Channel would occur, the following measure is recommended:

- The Project proponent shall obtain all necessary U.S. Army Corps of Engineers Section 404, Regional Water Quality Control Board Section 401, and CDFW Section 1602 permits for jurisdictional resources that would be directly or indirectly impacted. The permits shall be obtained prior to beginning construction and all permit measures and conditions shall be followed.

Should you have any questions regarding the information provided above, please contact Tetra Tech's Biological Resource Specialist, Michelle Bates at michelle.bates@tetratech.com or (805) 895-2054.

Sincerely,



Michelle Bates
Principal Biologist, Tetra Tech, Inc.

Daniel Berg
Biologist, Tetra Tech, Inc.

Attachments:

Attachment 1. Figures

Attachment 2. Photographs

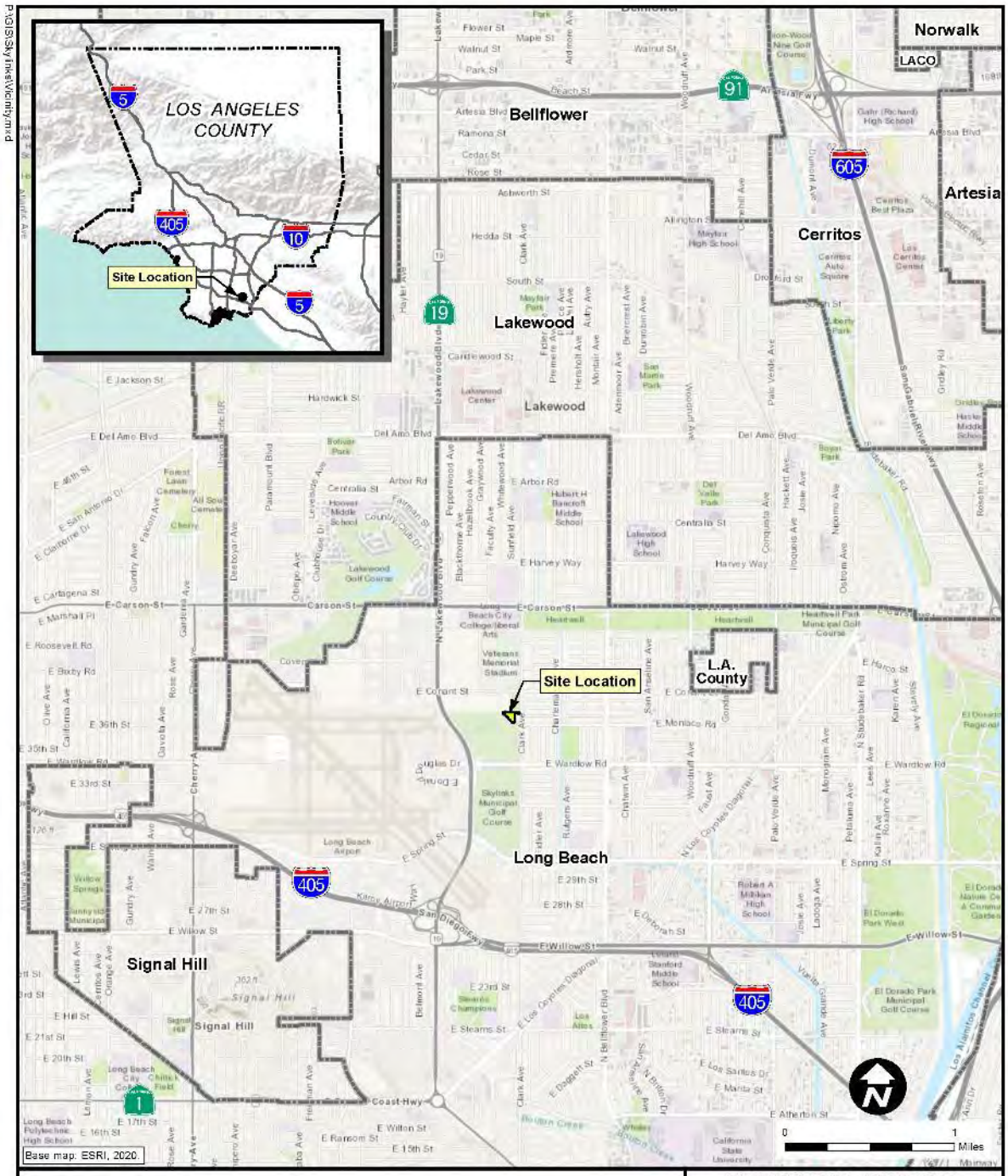
Attachment 3. Wetland Datasheets

Literature Cited

California Department of Fish and Wildlife (CDFW). 2022. California Natural Diversity Database (CNDDB) in Biogeographic Information and Observation System (BIOS). https://www.wildlife.ca.gov/data/cnddb/maps-and-data. Accessed June 2022.

Tetra Tech. 2023. Monarch Butterfly and Tree Survey Letter Report for the Skylinks Regional Stormwater Capture Project, Los Angeles County, California.

Attachment 1
Figures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LOS ANGELES COUNTY
Site Location
Norwalk
LACO
Bellflower
Artesia
Cerritos
Lakewood
Site Location
L.A. County
Long Beach
Signal Hill
Base map: ESRI, 2020.
0
1
Miles
City Boundary
SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
Figure 1
Vicinity Map
TETRA TECH

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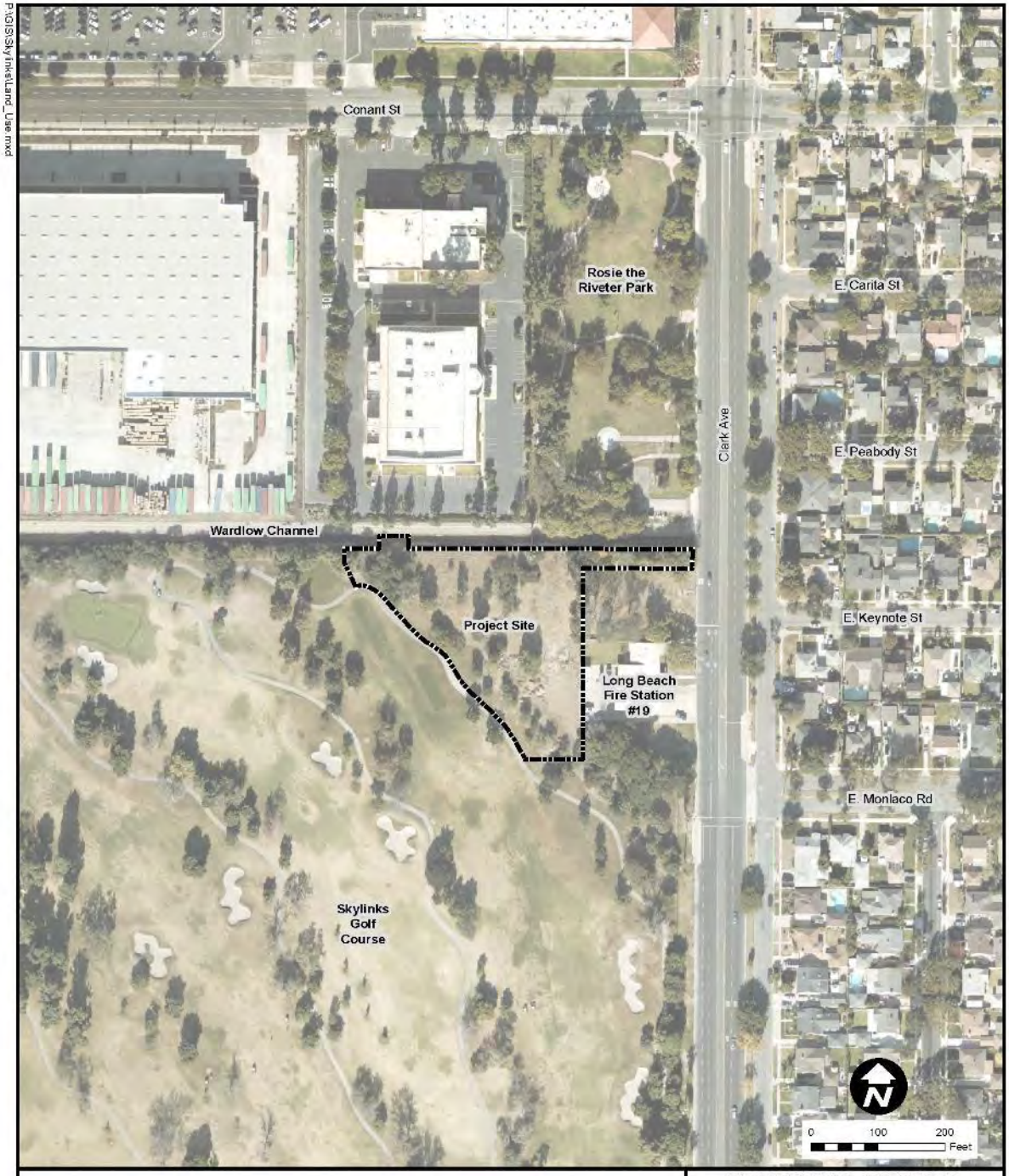

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT

Figure 2

Project Location Aerial and Surrounding Land Use

TETRA TECH

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Rosie the Riveter Park
Clark Ave
Wardlow Channel
Project Site
Long Beach Fire Station #19
Skylinks Golf Course
0 50 100 Feet
Vegetation
1 Aleppo Pine Stand
2 Chinese Elm and Ornamentals
3 Cultivated Grass
4 Grassland and Ornamentals
Site Boundary
SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
Figure 3
Vegetation Map
TETRA TECH

Attachment 2
Photographs

Photograph 1. Grassland and Ornamentals vegetation type looking northwest.

Photograph 2. Grassland and Ornamentals vegetation type looking north.

Photograph 3. Grassland with Chinese Elm and Ornamentals in distance at Station 19, looking north.

Photograph 4. Cultivated Grass adjacent to Clark Avenue looking east.

Photograph 5. Aleppo Pine Stand looking northeast.

Photograph 6. Aleppo Pine Stand looking northwest.

Photograph 7. Wardlow Channel north of site, looking west.

Photograph 8. Cultivated grass and blue jacaranda in Rosie the Riveter Park.

Photograph 9. Grassland and Ornamentals adjacent to Skylinks Golf Course looking southeast.

Photograph 10. Grassland and Ornamentals adjacent to Skylinks Golf Course looking east.

Photograph 11. Upland sample point looking north.

Photograph 12. Wardlow Channel north of site, looking east; Project site is on the right-hand side of the photo.

Attachment 3
Wetland Datasheets

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Skylinks | City/County: Long Beach, CA | Sampling Date: 02/21/2023

Applicant/Owner: City of Long Beach | State: CA | Sampling Point: UP-1

Investigator(s): Victoria Prado | Section, Township, Range: T4 South, R12 West

Landform (hillslope, terrace, etc.): Upland | Local relief (concave, convex, none): none | Slope (%): 0

Subregion (LRR): C - Mediterranean California | Lat: 33.8232315 | Long: -118.1353278 | Datum: WGS1984

Soil Map Unit Name: Urban Land - Biscailuz - Hueneme, drained complex | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Bromus diandrus*	98	Yes	Not Listed
2. *Hordeum brachyantherum*	2	No	FACW
3. *Malva parviflora*	1	No	Not Listed
4. *Lamium amplexicaule*	1	No	Not Listed
5.			
6.			
7.			
8.			
Total Cover:	102%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 0 % | % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	2	x 2 =	4
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species	100	x 5 =	500
Column Totals:	102 (A)		504 (B)

Prevalence Index = B/A = 4.94

Hydrophytic Vegetation Indicators:

- (●) Dominance Test is >50%
- (●) Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks:

SOIL

Sampling Point: UP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-14	7.5 YR 5/4	100					Loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks: Upland point is located about 10 feet from the concrete channel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Skylinks | City/County: Long Beach, CA | Sampling Date: 02/21/2023

Applicant/Owner: City of Long Beach | State: CA | Sampling Point: WET-1

Investigator(s): Victoria Prado | Section, Township, Range: T4 South, R12 West

Landform (hillslope, terrace, etc.): Concrete channel | Local relief (concave, convex, none): concave | Slope (%): 0

Subregion (LRR): C - Mediterranean California | Lat: 33.8232855 | Long: -118.1353124 | Datum: WGS 1984

Soil Map Unit Name: None | NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [X] Soil [X] or Hydrology [X] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks: This feature is Wardlow Channel. It is a concrete-lined channel that is man-made and has no natural components. Does not connect to any wetland features on the Project site.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	(A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- [ ] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks: The channel contains minimal sediment, but does not support any vegetation.

SOIL

Sampling Point: WET-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: Concrete

Depth (inches): 0

Hydric Soil Present? Yes ○ No ◉

Remarks: No soil pit assessed due to concrete channel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ◉	No ○	Depth (inches):	0.5
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology present as stagnant water collected from street run-off and rain. The water is not flowing. Max water depth is approximately 0.5 inches. The concrete channel is not accessible on foot.

Part 5. Monarch Butterfly and Tree Survey Letter Report

TETRA TECH

April 27, 2023

Ms. Maryanne Cronin
Project Planner
City of Long Beach
411 West Ocean Boulevard
Long Beach, California 90802
maryanne.cronin@longbeach.gov

RE: Monarch Butterfly and Tree Survey Letter Report for the Skylinks Regional Stormwater Capture Project, Los Angeles County, California

Dear Ms. Cronin:

The purpose of this letter is to describe the methods and results of the field surveys for monarchs (*Danaus plexippus*) and trees for the Skylinks Regional Stormwater Capture Project (Project), Los Angeles County, California. The Project is subject to the guidelines and regulations of the California Environmental Quality Act (CEQA). The lead agency for CEQA is the City of Long Beach. This additional survey was performed during the monarch overwintering season to determine if overwintering roosts are present within the Project site.

PROJECT DESCRIPTION

The proposed Project site is 1.6 acres and includes the construction of a regional stormwater capture and filtration facility. The facility would be located beneath an undeveloped area at the northeast corner of Skylinks Golf Course in the City of Long Beach. The existing Project site is comprised of non-native ornamental trees and non-native grasses, and no native habitats are present onsite. The objective of the Project is to improve water quality in the Los Cerritos Channel Watershed by reducing pollutant loads in stormwater runoff. The Project would intercept the dry-weather flow and a sizeable portion of the stormwater flows from the Wardlow Channel (Los Angeles County Flood Control District improved channel adjacent to the Project site) to the Skylinks Golf Course stormwater capture system. Stormwater would be conveyed through treatment systems, storage galleries, and through created wetland areas to improve water quality, infiltrate into the underlying soils, and in certain instances be pumped back into the channel, post treatment and post rainfall event. Trees and vegetation would be removed from the entire Project site during construction. Excavation depths are anticipated to extend 25 to 30 feet below the existing ground surface. Once the underground concrete capture and infiltration system is installed, it will be covered with some of the excavated material and the site will be graded in preparation for landscaping. After construction, tree replacement and revegetation with native species would be implemented onsite in accordance with City of Long Beach Municipal Code Chapter 14.28 – Trees and Shrubs, and the City Tree Maintenance Policy, including using trees from the Approved Street Tree List.

PROJECT LOCATION

The proposed Project site (1.6 acres) is located on undeveloped land (except for landscaping consisting of non-native trees and non-native grasses) within the northeast corner of the 160-acre Skylinks Golf Course, a public golf course owned by the City of Long Beach. The Project site is at 3559 1/2 Clark Avenue, Long Beach, California. Commercial and industrial buildings are located north of the Project site, the Long Beach Fire Department Station 19 and Clark Avenue are to the east, and the Skylinks Golf Course green is to the south and west. The Project is located at 33.822910, -118.134984 within the United States Geological Survey (USGS) 7.5-minute Long Beach, California, quadrangle, not sectioned (Attachment 1, Figures 1 and 2).

BACKGROUND

Monarch overwintering populations have been previously documented in the area at Heartwell Park and El Dorado Nature Center, about 0.5 miles northeast and 3 miles southeast of the Project site, respectively (California Department of Fish and Wildlife [CDFW] 2023). However, surveys in 2017 and 2021 at both locations did not find any overwintering monarchs (CDFW 2023). Tetra Tech conducted a general biological survey at the Project site on September 9, 2021. While no monarchs or roosts were observed during that survey, the Project site has eucalyptus and other mature trees that may have the potential to support overwintering monarch roosts. The most common roost trees for overwintering monarchs in California are the non-native blue gum eucalyptus (*Eucalyptus globulus*), the native Monterey pine (*Pinus radiata*), and the native Monterey cypress (*Cupressus macrocarpa*) (Pelton et al. 2016).

FIELD SURVEY METHODS

MONARCH BUTTERFLY HABITAT AND ROOST SURVEY

Two monarch butterfly habitat and roost surveys were conducted at the Project site during the monarch overwintering season (September 15 to March 15); the first survey was performed on February 21, 2023, and the second survey was performed on March 13, 2023. Surveys at the Project site were conducted during daylight hours and the temperature was approximately 60 to 64 degrees Fahrenheit, wind speeds were 7 to 8 miles per hour, and conditions were clear. These surveys were conducted to assess habitat and potential roost locations for monarchs that have the potential to occur within the Project site. During each survey, one biologist, walked throughout the Project site to identify potential monarch habitat and roost locations. Any eucalyptus groves and other trees (e.g., Monterey pines, cypress) within the Project site that are suitable for overwintering monarchs were visually inspected for monarchs and roosts using binoculars. Photographs were taken during the surveys.

TREE SURVEY

An initial tree survey was completed by an arborist from Urban Rain Design on February 8, 2023 (Perry 2023). During this survey, an arborist assessed the condition, species, and diameter of all the trees located west of the Long Beach Fire Station No. 19 (Figure 2). Trees that did not meet the Long Beach Municipal Code definition of a mature

tree were not recorded. Long Beach Municipal Code defines "Tree" primarily in regard to trees on City streets as “any woody plant, normally having one (1) stem or trunk, bearing the foliage or crown well above ground level to heights of sixteen feet (16') or more upon maturity (Long Beach, Ord. C-7642 § 1, 1999). Based on the arborist’s professional experience and accepted horticultural practices, trees that were at least 5 inches in diameter at breast height (DBH) were recorded. Trees suffering from age and pest damage or trees that were considered low branching were excluded from the Urban Rain Design’s report (Perry 2023). Their survey area did not include the north-eastern extension of the Project site seen in Figures 2 and 3.

During the field effort on February 21, 2023, Tetra Tech performed an additional tree survey. Trees targeted during this survey were those that were given approximated diameter measurements in the arborist report (Perry 2023) or were not included in that report. The biologist survey was more broad-based and not limited to looking at only trees subject to the City tree ordinance. One biologist walked throughout the entire Project site to identify the species of each tree and count all the trees within the Project site. The DBH of each tree was also recorded by measuring the diameter of the tree at 4.5 feet above the ground. When a tree with multiple stems were observed at 4.5 feet above the ground, the diameter of the main trunk and each stem was recorded. Trees were also identified as native or non-native.

FIELD SURVEY RESULTS

MONARCH BUTTERFLY HABITAT AND ROOST SURVEY

No monarchs or overwintering roosts were found during the two field surveys in 2023. Potential roost trees onsite included red iron bark (*Eucalyptus sideroxylon*) and Aleppo pine (*Pinus halepensis*) and were distributed with 1 to 3 trees per patch of trees. A typical overwintering roost consists of roost trees surrounded by a larger grove or windrow of trees which creates suitable microclimate conditions for monarch overwintering (Pelton et al. 2016). The trees observed within the Project site are unlikely to provide roosting habitat for monarch butterflies. The only trees observed onsite in larger thickets, which could provide wind protection to monarchs, were pepper trees (*Schinus* sp.). However, pepper trees are not hospitable to most insects, including butterflies, due to the presence of terpenes and phenols in their bark and sap. These compounds can repel or kill insects that come into contact with them (Rebolledo et al. 2021). In addition, limited nectar sources were observed within the Project site. The only plant species observed to be flowering during the 2023 surveys were the invasive ngaio tree (*Myoporum laetum*), red iron bark, and the non-native giraffe head (*Lamium amplexicaule*). Vegetation cover within the Project site is dominated by ripgut brome (*Bromus diandrus*) in the herbaceous layer and Chilean pepper tree (*Schinus polygama*) in the shrub/tree layer. Neither of these species produce nectar for monarch butterflies.

TREE SURVEY

During the arborist survey, a total of 36 trees were observed and 15 trees were measured that were close to meeting the height or DBH requirement (as observed in the field) for a mature tree by the City of Long Beach, and were healthy enough to be counted (Perry 2023, Figure 3). Table 1 lists the species and DBH for each tree measured by the arborist. Two of these trees were eliminated from consideration for tree replacement: one because its DBH was less than 5 inches and the other is outside the Project boundary. Therefore, a total of 13 trees were identified

by the arborist that would need to be replaced at a 2:1 ratio as required in the City ordinance, if removed as part of Project activities.

Table 1. Arborist Tree Inventory Results

Tree Number	Common Name	Scientific Name	Diameter at Breast Height (DBH) (inches)	Tree Replacement Required if Removed?
1	Goldenrain tree	*Koelreuteria elegans*	4.5	No
2	Goldenrain tree	*Koelreuteria elegans*	5.0	Yes
3	Indian laurel fig	*Ficus nitida*	7.0	Yes
4	Mexican fan palm	*Washingtonia robusta*	24.0	Yes
5	Blue jacaranda	*Jacaranda mimosifolia*	15.5	Yes
6	Red iron bark	*Eucalyptus sideroxylon 'Rosea'*	5.0	Yes
7	Red iron bark	*Eucalyptus sideroxylon 'Rosea'*	6.0	Yes
8	Aleppo pine	*Pinus halepensis*	7.5	Yes
9	Red iron bark	*Eucalyptus sideroxylon 'Rosea'*	9.0	Yes
10	Aleppo pine	*Pinus halepensis*	8.3	Yes
11	Fern pine	*Afrocarpus gracilior*	6.5	Yes
12	Blue jacaranda	*Jacaranda mimosifolia*	17.0	Yes
13	Blue jacaranda	*Jacaranda mimosifolia*	11.0	Yes
14	Red iron bark	*Eucalyptus sideroxylon 'Rosea'*	21.0	Yes
15	Carob	*Ceratonia siliqua*	12.0	No*

Note:

* Despite being greater than 5 inches in DBH, this tree is located outside of the Project boundary and is not anticipated to be removed by Project activities; therefore, tree replacement is not expected for this tree.

Shaded cells highlight trees that would need to be replaced if removed.

During the February 21, 2023 tree survey by Tetra Tech, an additional 49 trees were measured that were not measured during the arborist survey (Figure 4). Table 2 lists the species and DBH for each supplemental tree observed in February 2023. All trees observed within the Project site were non-native.

Most of the trees identified in Table 2 are less than 5 inches in DBH and are not recommended for replacement. Five of the trees that were recorded to have a DBH that exceeds 5 inches are Ngaio trees that are multi-branched, and each stem was measured and used to calculate DBH. However, these trees were observed to be old and in poor health. Therefore, even if they exceeded 5 inches in DBH, tree replacement is not recommended by the arborist. Likewise, the low height and small diameter pepper trees were excluded from the tree replacement recommendation made by the arborist. Based on the biologist survey, an additional 8 trees (all Chilean pepper trees) are recommended for tree replacement.

Table 2. Tetra Tech Tree Inventory Results

Tree Number	Common Name	Scientific Name	Diameter at Breast Height (DBH) (inches)	Tree Replacement Required if Removed?
16	Carrotwood	*Cupaniopsis anacardioides*	3.3	No
17	Chilean pepper tree	*Schinus polygama*	4.4	No
18	Chilean pepper tree	*Schinus polygama*	3.8	No
19	Chilean pepper tree	*Schinus polygama*	3.8	No
20	Chilean pepper tree	*Schinus polygama*	4.4	No
21	Chilean pepper tree	*Schinus polygama*	3.3	No
22	Chilean pepper tree	*Schinus polygama*	3.3	No
23	Chilean pepper tree	*Schinus polygama*	3.3	No
24	Chilean pepper tree	*Schinus polygama*	4.3	No
25	Chilean pepper tree	*Schinus polygama*	3.2	No
26	Chilean pepper tree	*Schinus polygama*	5.8	Yes
27	Chilean pepper tree	*Schinus polygama*	14.0	Yes
28	Chilean pepper tree	*Schinus polygama*	0.6	No
29	Chilean pepper tree	*Schinus polygama*	1.9	No
30	Chilean pepper tree	*Schinus polygama*	4.8	No
31	Chilean pepper tree	*Schinus polygama*	6.3	Yes
32	Chilean pepper tree	*Schinus polygama*	6.3	Yes
33	Chilean pepper tree	*Schinus polygama*	5.7	Yes
34	Carrotwood	*Cupaniopsis anacardioides*	1.5	No
35	Carrotwood	*Cupaniopsis anacardioides*	0.6	No
36	Chilean pepper tree	*Schinus polygama*	6.5	Yes
37	Chilean pepper tree	*Schinus polygama*	6.5	Yes
38	Chilean pepper tree	*Schinus polygama*	6.5	Yes
39	Ngaio tree	*Myoporum laetum*	24.3	No*
40	Ngaio tree	*Myoporum laetum*	9.9	No*
41	Ngaio tree	*Myoporum laetum*	0.5	No
42	Ngaio tree	*Myoporum laetum*	22.7	No*
43	Ngaio tree	*Myoporum laetum*	5.1	No*
44	Ngaio tree	*Myoporum laetum*	28.3	No*
45	Ngaio tree	*Myoporum laetum*	5.4	No*
46	Ngaio tree	*Myoporum laetum*	4.8	No
47	Ngaio tree	*Myoporum laetum*	3.2	No
48	Ngaio tree	*Myoporum laetum*	28.3	No*
49	Chilean pepper tree	*Schinus polygamus*	3.2	No
50	Chinese elm	*Ulmus parviflolia*	1.0	No
51	Chinese elm	*Ulmus parviflolia*	1.0	No

Table 2. Tetra Tech Tree Inventory Results

Tree Number	Common Name	Scientific Name	Diameter at Breast Height (DBH) (inches)	Tree Replacement Required if Removed?
52	Brazilian pepper tree	*Schinus terebinthifolia*	8.0	No*
53	Brazilian pepper tree	*Schinus terebinthifolia*	1.0	No
54	Goldenrain tree	*Koelreuteria elegans*	1.0	No
55	Common oleander	*Nerium oleander*	2.9	No
56	Japanese cheesewood	*Pittosporum tobira*	1.6	No
57	Japanese cheesewood	*Pittosporum tobira*	1.6	No
58	Japanese cheesewood	*Pittosporum tobira*	1.9	No
59	Chinese elm	*Ulmus parvifolia*	0.3	No
60	Chilean pepper tree	*Schinus polygama*	1.6	No
61	Brazilian pepper tree	*Schinus terebinthifolia*	1.6	No
62	Peruvian pepper tree	*Schinus molle*	1.3	No
63	Peruvian pepper tree	*Schinus molle*	2.2	No
64	Weeping bottlebrush	*Melaleuca viminalis*	1.6	No

Note:

* The Ngaio trees were multi-stemmed trees that were observed to be old and in poor health. Therefore, even if they exceeded 5 inches in DBH, tree replacement is not recommended by the arborist. Likewise, the low height and small diameter pepper trees were excluded from the tree replacement recommendation made by the arborist.

Shaded cells highlight trees that would need to be replaced if removed.

In summary, a total of 64 trees were measured on the Project site (15 by the arborist and 49 by the Tetra Tech biologist). A total of 21 trees mapped by the arborist and the biologist (13 and 8, respectively) are 5 inches in DBH or greater and meet the definition of a mature tree according to the City of Long Beach. These trees would need to be replaced at a 2:1 ratio if removed by project activities.

PLANT AND WILDLIFE SPECIES OBSERVED

Plant and wildlife species that were observed during the surveys completed by Tetra Tech in February and March 2023 are listed in Tables 3 and 4.

Table 3. Plant Species Observed

Common Name	Scientific Name
Fern pine*	*Afrocarpus gracilior**
Brome*	*Bromus diandrus**
Carob*	*Ceratonia siliqua**
Carrotwood*	*Cupaniopsis anacardioides**
Bermuda grass*	*Cynodon dactylon**
Red iron bark*	*Eucalyptus sideroxylon**
Indian laurel fig*	*Ficus nitida**

Common Name	Scientific Name
Ash	*Fraxinus* sp.
Barley*	*Hordeum* sp.*
Blue jacaranda*	*Jacaranda mimosifolia**
Taiwanese rain tree*	*Koelreuteria paniculata**
Giraffe's head*	*Lamium amplexicaule**
Weeping bottlebrush*	*Melaleuca viminalis**
Ngaio tree*	*Myoporum laetum**
Aleppo pine*	*Pinus halepensis**
Japanese cheesewood*	*Pittosporum tobira**
Russian thistle*	*Salsola tragus**
Peruvian pepper tree*	*Schinus molle**
Chilean pepper tree*	*Schinus polygama**
Brazilian pepper tree*	*Schinus terebinthifolia**
Chinese elm*	*Ulmus parvifolia**
Mexican fan palm*	*Washingtonia robusta**

Note:
*Non-native plant species.

Table 4. Wildlife Species Observed

Common Name	Scientific Name	Taxa
California ground squirrel[1]	*Otospermophilus beecheyi*[1]	Mammal
Red-shouldered hawk	*Buteo lineatus*	Bird
Anna's hummingbird	*Calypte anna*	Bird
American crow	*Corvus brachyrhynchos*	Bird
Western mockingbird	*Mimus polyglottos*	Bird
Black phoebe	*Sayornis nigricans*	Bird
Allen's hummingbird	*Selasphorus sasin*	Bird
Yellow-rumped warbler	*Setophaga coronata*	Bird
Yellow warbler[2]	*Setophaga petechia*[2]	Bird
Lesser goldfinch	*Spinus psaltria*	Bird
Northern rough-winged swallow	*Stelgidopteryx serripennis*	Bird

Note:
[1] Burrowing by California ground squirrel was observed throughout the site.
[2] California Bird Species of Special Concern

RECOMMENDATIONS

Since no roosting habitat or overwintering monarchs were observed during the field survey and the site does not provide roosting habitat, no additional monarch surveys are required.

Tree removal and replacement shall be performed in accordance with the City of Long Beach Municipal Code Chapter 14.28 – Trees and Shrubs, and the City Tree Maintenance Policy, including using the trees from the Approved Street Tree List. All trees removed that meet criteria for replacement need to be replaced at a 2:1 ratio. There are a total of 21 trees that meet the definition of a tree, as shown in Tables 1 and 2. The City of Long Beach should determine if any of the Ngaio trees or low height/small diameter pepper trees should be considered a tree to be replaced at a 2:1 ratio. Using the 2:1 ratio with the 21 trees that meet replacement criteria as determined by the arborist, a total of 42 planted replacement trees would be required for the Project.

Should you have any questions regarding the information provided above, please contact Tetra Tech's Biological Resource Specialist, Michelle Bates at michelle.bates@tetratech.com or (805) 895-2054.

Sincerely,

Michelle Bates
Principal Biologist, Tetra Tech

Daniel Berg
Biologist, Tetra Tech

Attachments:

Attachment 1. Figures
Attachment 2. Photographs

Literature Cited

CDFW. 2023. California Natural Diversity Database (CNDDB). Accessed March 13, 2023.

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Pelton, E., S. Jepsen, C. Schultz, C. Fallon, and S.H. Black. 2016. *State of the Monarch Butterfly Overwintering Sites in California*. 40+vi pp. Portland, OR: The Xerces Society for Invertebrate Conservation. Available online at www.xerces.org.

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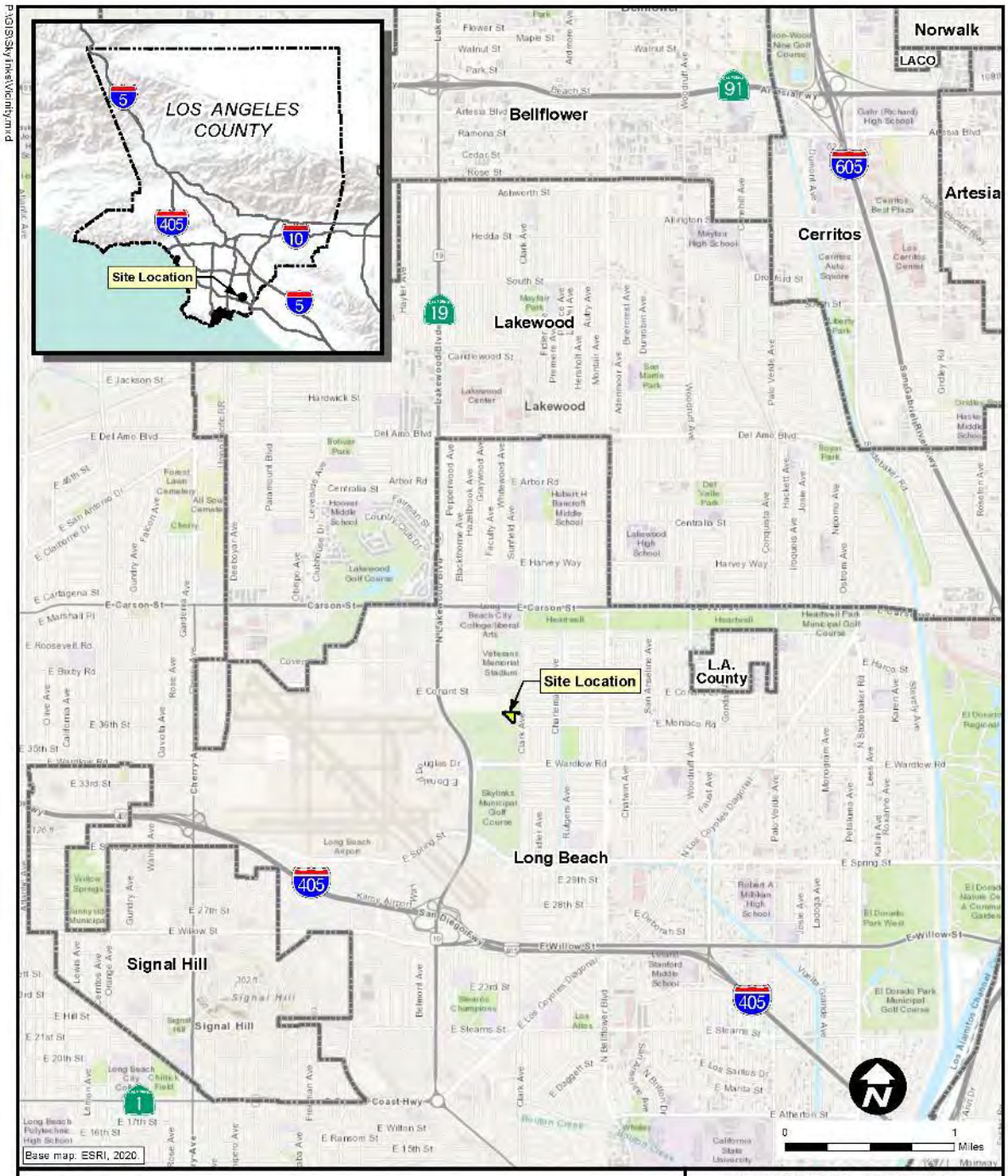
Attachment 1
Figures


P:\GIS\Skylinks\Vicinity.mxd
LOS ANGELES COUNTY
Site Location
Norwalk
LACO
Bellflower
Artesia
Cerritos
Lakewood
Site Location
L.A. County
Long Beach
Signal Hill
Base map: ESRI, 2020.
0
1
Miles
City Boundary
SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT
Figure 1
Vicinity Map
TETRA TECH

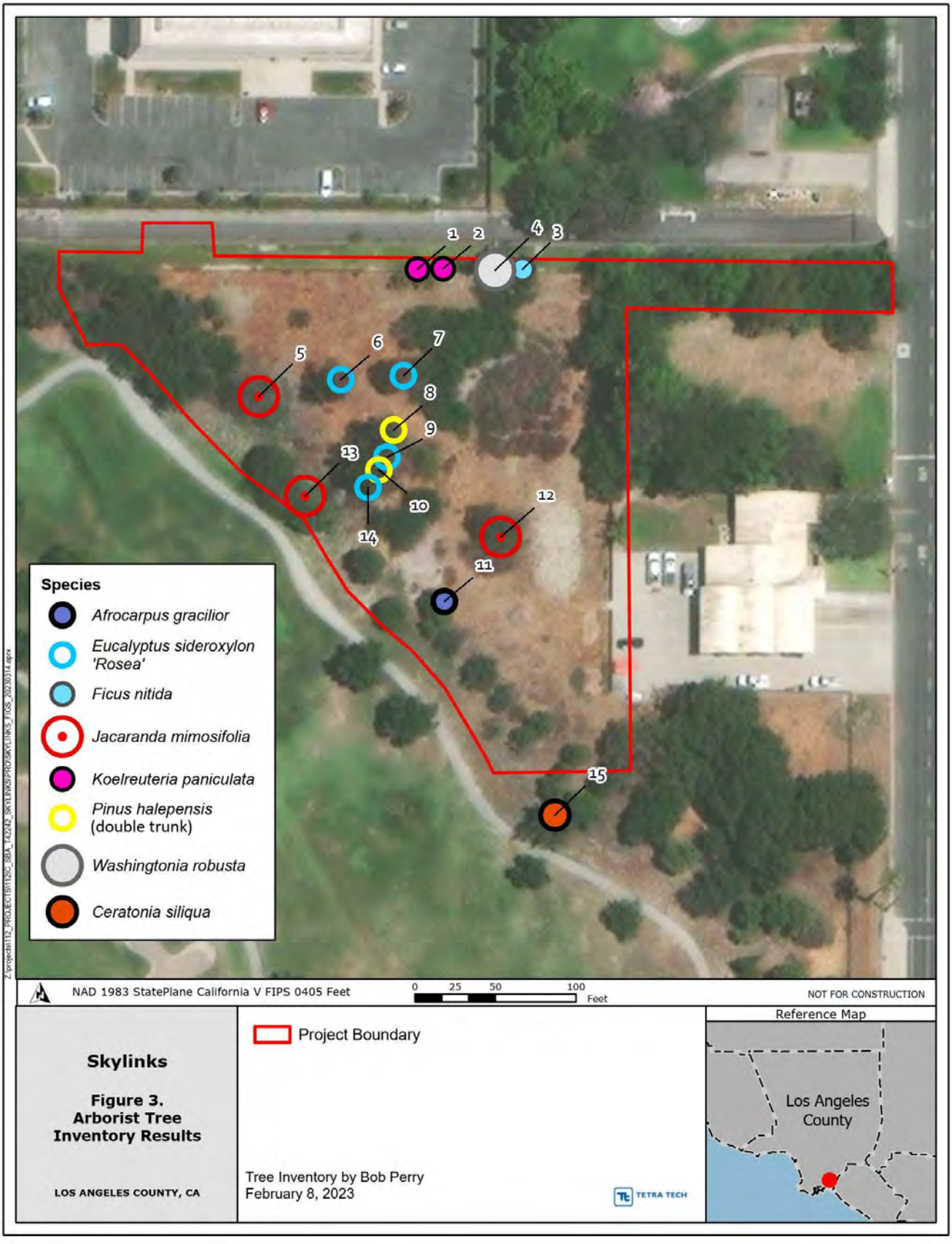
P:\GIS\Skylinks\Land_Use.mxd

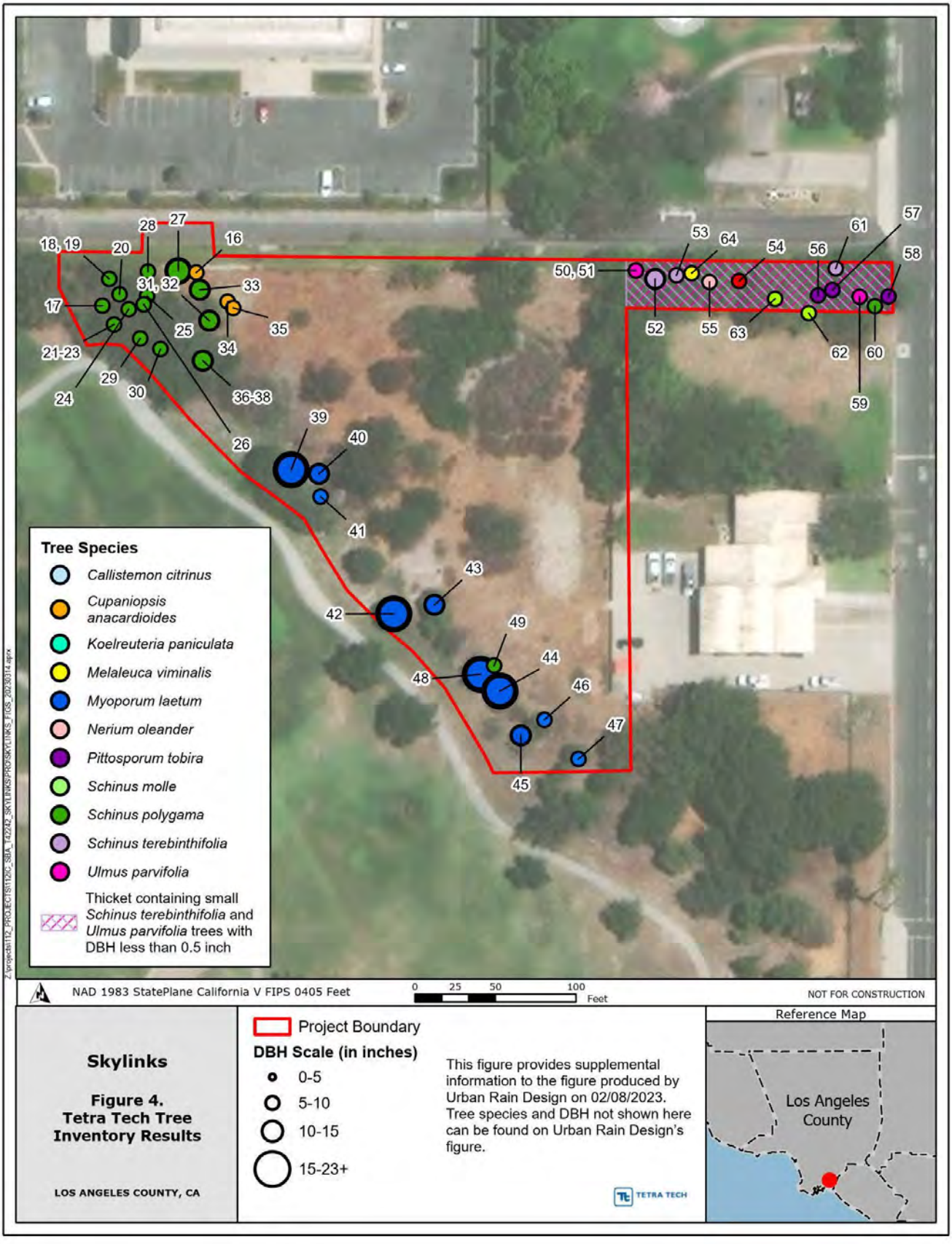
SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT

Figure 2

Project Location Aerial and Surrounding Land Use

TETRA TECH


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
Species
Afrocarpus gracilior
Eucalyptus sideroxylon 'Rosea'
Ficus nitida
Jacaranda mimosifolia
Koelreuteria paniculata
Pinus halepensis (double trunk)
Washingtonia robusta
Ceratonia siliqua
NAD 1983 StatePlane California V FIPS 0405 Feet
0 25 50 100
Feet
NOT FOR CONSTRUCTION
Project Boundary
Skylinks
Figure 3.
Arborist Tree Inventory Results
LOS ANGELES COUNTY, CA
Tree Inventory by Bob Perry
February 8, 2023
TETRA TECH
Reference Map
Los Angeles County


Tree Species
Callistemon citrinus
Cupaniopsis anacardioides
Koelreuteria paniculata
Melaleuca viminalis
Myoporum laetum
Nerium oleander
Pittosporum tobira
Schinus molle
Schinus polygama
Schinus terebinthifolia
Ulmus parvifolia
Thicket containing small Schinus terebinthifolia and Ulmus parvifolia trees with DBH less than 0.5 inch
NAD 1983 StatePlane California V FIPS 0405 Feet
0 25 50 100 Feet
NOT FOR CONSTRUCTION
Skylinks
Figure 4.
Tetra Tech Tree Inventory Results
LOS ANGELES COUNTY, CA
Project Boundary
DBH Scale (in inches)
0-5
5-10
10-15
15-23+
This figure provides supplemental information to the figure produced by Urban Rain Design on 02/08/2023. Tree species and DBH not shown here can be found on Urban Rain Design's figure.
TETRA TECH
Reference Map
Los Angeles County

Attachment 2
Photographs

Photograph 1. Overview of potential monarch butterfly (*Danaus plexippus*) roosting habitat on the Project site. The site lacked overwintering habitat since groups of only 1 to 3 red iron barks (*Eucalyptus sideroxylon*) and/or Aleppo pines (*Pinus halepensis*) were found. This photograph is taken in the center of the Project site. Aspect south.

Photograph 2. Canopy view of the red iron bark and Aleppo pine seen in Photograph 1.

Photograph 3. View of Chinese elm (*Ulmus parvifolia*) cluster in the northeast limb of the Project site. Aspect east.

Photograph 4. View overlooking Chilean pepper trees (*Schinus polygama*), Brazilian pepper tree (*Schinus terebinthifolia*) thicket, and Japanese cheesewood (*Pittosporum tobira*) in the northeast limb of the Project site. Aspect west.

Photograph 5. Low-branching Brazilian pepper tree and Chilean pepper tree thicket found in the northern area of the Project site. Aspect west.

Photograph 6. View of Chilean pepper trees from inside the grove of pepper trees in the northwest corner of the Project site. Aspect south.

Photograph 7. View of the Ngaio trees (*Myoporum laetum*) which were measured during the February 21, 2023 survey in the southern area of the Project site. Aspect north.

Photograph 8. View of barley (*Hordeum* sp.) and brome (*Bromus diandrus*) grassland with a diverse set of trees. Trees in frame and on the Project site include Jacaranda (*Jacaranda* sp.), Aleppo pine, red iron bark, Mexican fan palm (*Washingtonia robusta*), Brazilian pepper tree, and Ngaio tree. Aspect north, Project site center.

Part 6. Initial Study/Mitigated Negative Declaration

Initial Study/Mitigated Negative Declaration Skylinks Regional Stormwater Capture Project Long Beach, California

MND 09-22

SCH #2024030575

June 2024

PREPARED FOR

City of Long Beach
Department of Public Works, Engineering Bureau
411 West Ocean Boulevard, 5th Floor
Long Beach, CA 90802

PREPARED BY

Tetra Tech
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Suite 130
Santa Barbara, CA 93111

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- B.1 General Biological Survey Letter Report for the Skylinks Regional Stormwater Capture Project
- B.2 Monarch Butterfly and Tree Survey Letter Report for the Skylinks Regional Stormwater Capture Project

C Cultural Resource Record Search and Archaeological Phase I Summary Letter Report for the Skylinks Regional Stormwater Capture Project
D Geotechnical Design Report, Skylinks Golf Course Stormwater Storage and Infiltration Facilities

E Phase I Environmental Site Assessment for Skylinks Regional Stormwater Capture Project
F Craftwater Engineering Reports
- F.1 Skylinks Golf Course at Wardlow Project Preliminary Design Report (2019)
- F.2Skylinks Golf Course Stormwater Capture Project Hydrology and Hydraulics Report (2021

G SCW Feasibility Report for Skylinks Golf Course at Wardlow Stormwater Capture Project
H Hydrogeological Study Results Memorandum
I Responses to Public Comments
J Mitigation Monitoring and Reporting Program

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1.0 INTRODUCTION

1.1 INTRODUCTION

This Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared for the City of Long Beach by Tetra Tech to evaluate whether the proposed Skylinks Regional Stormwater Capture Project would have a significant effect on the environment. The City of Long Beach, acting as the Lead Agency, may prepare a Negative Declaration or Mitigated Negative Declaration if there is no substantial evidence that the project or any of its aspects may cause a significant effect on the environment. According to State CEQA Guidelines Section 15070, a public agency shall prepare or have prepared a proposed negative declaration or mitigated negative declaration for a project subject to CEQA when:

(a) The IS shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment, or

(b) The IS identifies potentially significant effects, but:

(1) Revisions in the project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and IS are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and

(2) There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment.

1.2 REQUIRED CONTENT

Pursuant to State CEQA Guidelines Section 15071, a Negative Declaration circulated for public review shall include:

(a) A brief description of the project, including a commonly used name for the project, if any

(b) The location of the project, preferably shown on a map, and the name of the project proponent

(c) A proposed finding that the project will not have a significant effect on the environment

(d) An attached copy of the IS documenting reasons to support the finding

(e) Mitigation measures, if any, included in the project to avoid potentially significant effects

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2.0 PROJECT INFORMATION

Project title:	Skylinks Regional Stormwater Capture Project
Lead agency name and address:	City of Long Beach Department of Public Works, Engineering Bureau 411 West Ocean Boulevard, 5th Floor Long Beach, CA 90802
Contact person and phone number:	Myung Chun, P.E. (562) 570-6206
Project location:	Street address: 3559 1/2 Clark Avenue Long Beach, CA 90808 Located at northeast corner of Skylinks Municipal Golf Course, just behind Long Beach Fire Station #19 (33.82295, -118.13498)
Assessor Parcel Number (APN):	7149-005-902 (portion of)
Project sponsor's name and address:	City of Long Beach Department of Public Works, Engineering Bureau 411 West Ocean Boulevard, 5th Floor Long Beach, CA 90802
General Plan Designation:	Open Space (OS)
Zoning Designation:	Park Zone (P)
Surrounding land uses:	North: Open Space (Park), Industrial, and Institutional East: Long Beach Fire Station #19 and Low Density Residential South: Open Space (Skylinks Golf Course) West: Open Space (Skylinks Golf Course) and Regional Serving Facility (Long Beach Airport)

2.1 ENVIRONMENTAL SETTING

The approximately 1.6-acre project site is within the boundaries of the 160-acre Skylinks Golf Course, a public golf course owned by the City of Long Beach, and is located at 3559 1/2 Clark Avenue, Long Beach, California (Figure 1). The site, which is adjacent to (but not part of) the usable fairway for golf activities, is covered primarily by a mixture of non-native ornamental trees and non-native grasses. Los Cerritos Channel (a rectangular concrete channel), also known as Wardlow Channel, runs east-west along the entire length of the project to the north. On the north side of the drainage channel is Rosie the Riveter Park, which is comprised of cultivated grass and jacaranda trees, and Long Beach City College Liberal Arts Campus Buildings 01 and 02. West of the project site are the cultivated grounds of the Skylinks Golf Course. Long Beach Fire Department Station #19 is adjacent to and east of the project site, and single-family residential neighborhoods are to the east across Clark Avenue (Figure 2). There is also a degraded sand volleyball court on the site adjacent to the Fire Station that is used by the firefighters and golf course staff, the location of which is identified on the aerial of the site on Figure 2.

2.2 BACKGROUND

The project is located within the Los Cerritos Channel (LCC) Watershed (Watershed) which is a largely built-out, urbanized watershed of approximately 17,711 acres in the Los Cerritos Channel and Alamitos Bay Watershed Management Area. Permittees in the Watershed have been working together since late 2008 to address water quality issues in the Watershed. Permittees include the cities of Bellflower, Cerritos, Downey, Lakewood, Long Beach, Paramount, and Signal Hill, as well as 94 acres of unincorporated Los Angeles County land. The Los Angeles County Flood Control District (LACFCD) has also joined this Watershed Group, and the California Department of Transportation (Caltrans) participates with the Group on an informal basis.

The LCC Permittees developed a Los Cerritos Channel Watershed Management Program (WMP) that sets forth a plan to achieve pollutant reductions in the waterbodies of the LCC Watershed (Richard Watson & Associates 2015). The WMP is accompanied by a reasonable assurance analysis (RAA) based on the Watershed Modeling System previously developed by LACFCD in collaboration with the U.S. Environmental Protection Agency (USEPA). The WMP is a long-term planning document that takes a comprehensive look at the LCC Watershed, including land uses, the municipal separate storm sewer system (MS4), existing and planned control measures, and historical monitoring data. The WMP lays the groundwork for expanding on Permittees' existing water quality management programs and provides flexibility necessary to allow the Permittees to respond to new issues or concerns that might arise during routine monitoring or as the result of emerging topics in stormwater science.

The development of the Skylinks Regional Stormwater Capture Project (proposed project) represents an opportunity to continue the regional scale progress to achieve pollutant load reductions for the LCC Watershed. The primary pollutant of concern is zinc, with other metals (copper and lead), bacteria, nutrients, and trash as additional concerns. The Skylinks Golf Course site is owned and operated by the City of Long Beach. The site has the potential to provide significant water quality benefits for multiple jurisdictions due to its drainage area, location of the adjacent storm drains, and available development open space. The drainage area for the project (1,655 acres) covers portions of the City of Long Beach, including the northern portion of the Long Beach Airport, and the City of Lakewood. This drainage area is shown and discussed in Section 3.4.10, Hydrology and Water Quality. Skylinks Golf Course sits at the downstream end of the 1,655-acre drainage area that consists of residential, commercial, industrial, and transportation land uses. Stormwater runoff is conveyed immediately north of the project site within the Los Cerritos Channel, which consists of a 19-foot wide by 9.5-foot-deep rectangular concrete channel. The project proposes to divert dry weather and wet weather low flows to treatment, storage, and infiltration improvements that offer runoff storage and water quality benefits to help address regulatory municipal needs for stormwater management identified to achieve compliance in the WMP.

2.3 PROJECT DESCRIPTION

Capturing and treating stormwater, as well as capturing dry-season urban runoff, greatly reduces pollutant volume that otherwise discharges into water bodies. Placing such facilities within and under public parks and golf courses permits the captured and treated stormwater to infiltrate into the ground and/or to be used as non-potable irrigation water for the golf course (secondary option).

To this end, the Skylinks Regional Stormwater Capture Project (referred to herein as the project or proposed project) primary objectives are to:

- Improve the water quality within the Los Cerritos Channel
- Create a publicly accessible space adjacent to the Los Cerritos Channel for educational purposes

Secondary objectives are to:

- Offset potable water demand at the Skylinks Golf Course (secondary irrigation water source)
- Educate the public on the local water supply, demand, and integration of storm water quality into urban spaces, providing community and ecosystem benefits

2.3.1 Project Components

The proposed project would be to construct a regional stormwater capture and filtration facility located beneath an undeveloped area at the northeast corner of the Skylinks Golf Course in the City of Long Beach. Currently, stormwater flow adjacent to the project site travels down the existing LACFCD improved Los Cerritos Channel (also known in this area as Wardlow Channel) and bypasses the project site. The proposed project would intercept storm flows in the channel and divert them to an underground storage basin. From there, the flows would either be pumped up to vegetated storage ponds or be allowed to infiltrate to recharge the groundwater. Excess water from the ponds would flow back into the Los Cerritos Channel.

A project overview is provided on Figure 3, and a more detailed site plan is provided on Figure 4 (Technical Drawing) and Figure 5 (Schematic Drawing). The objective of the project is to improve water quality in the LCC Watershed through pollutant reduction loading in stormwater runoff. The project is designed to divert all dry-weather flows and a portion of wet weather flows from the Los Cerritos Channel to the Skylinks Golf Course stormwater capture system. An optimization analysis was performed to size the diversion, treatment volume, and storage size to determine the portion of wet weather flow would be diverted to maximize the efficiency of the project.

Stormwater would be conveyed through treatment systems, storage galleries, and through the creation of vegetated storage pond areas to improve water quality, infiltrate into the underlying soils (and recharge groundwater), and in certain instances be pumped back into the channel, post treatment and post rainfall event. Prior to project implementation, the City would be required to obtain a Major Modification Permit and Discharge Permit from LACFCD for the discharge of treated water into Los Cerritos Channel. A profile view of the stormwater capture system is provided on Figure 6.

Primary project components and features include:

Drainage and Drainage Pumps. The project would collect and manage drainage from the site by retrofitting the Los Cerritos Channel to create an inlet and slide gate to divert waters to the proposed gravity-based pre-treatment system. From the pre-treatment system, runoff would gravity flow into a settling chamber where it would be pumped to the surface and progress through meandering vegetated storage ponds to promote natural treatment processing for water quality. After flowing through the vegetated storage ponds, runoff would discharge into an underground capture facility and infiltrate into the subsurface soils and groundwater. The two project pumps would operate on electricity provided by Southern California Edison (SCE).

Grading Plan. The existing site is relatively flat with drainage patterns generally to the west and south. Project improvements require excavating the 1.6-acre site to a depth of up to 25 feet below existing grade for installation of a subsurface concrete box water storage and infiltration system (described in the next paragraph) with an approximate 6.5-acre feet of storage (Figure 7). Approximately 48,000 cubic yards (CY) of excavated soils would be used to backfill the site above the storage system to a grade similar to existing conditions. During backfill operations, a meandering vegetated storage pond/swale would be formed into the surface layers of backfill. The site is expected to be a net export of approximately 12,000 CY of soil.

Subsurface Water Storage. The subsurface storage and infiltration unit proposed for the project would be approximately 175 feet long by 200 feet wide, consisting of precast concrete systems, and encompassing 1.25 acres of area and capable of storing 6.5 acre feet of runoff (Figure 8).

Water Treatment and Use. Diverted flows (estimated at 30 cubic feet per second) would pass through multiple treatment systems, including the following:

- Hydrodynamic Separation Pre-Treatment: Reduction of floatable trash/debris, total suspended solids (TSS), hydrocarbons, and larger sediments.
- Settling Gallery: A settling gallery downstream of pre-treatment would be a small ponded area where additional fine sediment removals would occur.

- Biofiltration: Dry weather flows would be pumped from the settling gallery to the created vegetated storage ponds/swales above ground through which the flows would travel, subjecting them to greater pollutant removals, including dissolved constituents and metals.
- Infiltration: Runoff passing through the vegetated storage ponds would be captured in the underground capture system and stored, allowing it to infiltrate into the ground, thus producing a final treatment mechanism.
- High flows and bypass flows that exceed the system capacity would be diverted through a membrane filter serving as a polishing step prior to being discharged back into Los Cerritos Channel.

Landscape Plan. Once the underground structures are installed, the project site would be landscaped with native trees and shrubs, and would include paths made up of decomposed granite, benches, an interpretive sign, and a relocated volleyball court. A simplified landscaping plan is provided on Figure 9. There would also be vegetated swales and bioswales strategically placed through the constructed vegetated storage ponds to promote enhanced natural treatment mechanisms to dry weather flows. The project would include a publicly accessible pedestrian pathway along the flood control channel and usable space within the current open and undeveloped area for educational purposes. The vegetated storage ponds and other surface elements critical to water treatment and function of the water quality treatment system would be off limits to public access, while remaining visible for the public to see and learn about.

Operation and Maintenance. Operation and maintenance of the facility would be the responsibility of the City of Long Beach, LACFCD, and the Skylinks Golf Course. The City of Long Beach would enter into a Use and Maintenance Agreement with LACFCD to accept responsibility for maintenance of the City's proposed diversion structure within the LACFCD system. A draft maintenance plan would be developed as part of the 100% final project design and would include details on equipment needed, frequency of maintenance, and standard practices and procedures to be utilized. The final maintenance plan would be completed at the end of construction when more detailed information is available. In addition, prior to any work within the LACFCD right-of-way, a Water Diversion Plan would be prepared and submitted to LACFCD for review and approval.

2.3.2 Construction Activities and Staging

Project implementation would involve the use of heavy equipment (e.g., excavators, trucks, cranes, concrete trucks, backhoes, roller, and pavers) during project construction.

Staging Area. The project staging area would be located on site in the southern area, south of the existing fire station and is anticipated to be 100 feet by 75 feet, approximately 0.17 acre in area.

Construction Access Routes. Access to the project site is anticipated to be provided along the existing maintenance and access road on the northern edge of the Los Cerritos Channel, and via a temporary access created as an opening in the golf course fence, south of the Fire Station #19. Both access routes are accessible from Clark Avenue. There would be temporary partial lane closures along Clark Avenue during some aspects of construction, particularly when equipment is being brought to the site. Access to the existing storm drain would be provided through an existing gate and ladder on the north side of the channel at Clark Avenue. Construction equipment would be lowered over the side of the channel during construction of the diversion system. Access for construction would require close coordination with LACFCD in accordance with the LACFCD Major Modification Permit and Discharge Permit. Anticipated truck haul routes would be accessed from N. Lakewood Boulevard and the Interstate 405 (I-405) Freeway.

Site Grading. Grading of the project site would be required, including excavation for the underground capture and infiltration system and piping and pump connection to the Los Cerritos Channel. In addition, an approximately 40-foot-long segment of the Los Cerritos Channel would be removed and modified to incorporate a modified channel bottom that promotes the diversion of flows to the proposed project. All trees, shrubs, and vegetation within the limits of project grading would be removed and replaced as part of the project. This includes the removal of 64

trees and all shrubs on the site. Twenty-one of these trees meet the definition of a tree that would need to be replaced 2:1, in accordance with Long Beach Municipal Code requirements, if removed by project activities. This is discussed in more detail in Section 3.4.4, Biological Resources. The existing degraded sand volleyball court would be relocated slightly south of its current location and improved for continued use by the firefighters and golf course employees. Excavation depths are anticipated to extend up to 25 feet below the existing ground surface and produce approximately 60,000 cubic yards of excavated material. Approximately 12,000 cubic yards of excavated material would be exported off site to either a landfill or other construction site, and subject to a City of Long Beach-approved truck haul route. Both Lakewood Boulevard and Bellflower Boulevard are designated by the City as approved truck routes. The remaining onsite materials would be used to backfill and cover the concrete capture system and grade the created surface vegetated storage ponds.

Installation of Project Components and Facilities. Prior to installation of project components, an existing 12-inch city reclaimed water line would be relocated to the east to go around the proposed storage gallery. This reclaimed water line is currently used as the main source of irrigation for the golf course and would continue to serve this purpose after relocation. A new reclaimed water line connection would be installed as part of the project to irrigate the new landscaping for the project.

Installation of the various project components would include a modified inlet within Los Cerritos Channel, two slide gates, a pump/lift station, reinforced concrete settling galleries, a hydrodynamic separator and settling gallery for pre-treatment, surface vegetated storage ponds with associated vegetation and outlet flow pipe works, a large precast concrete underground storage / infiltration system, and an overflow/bypass membrane filtration system to “polish” effluent that is combined back into the Los Cerritos Channel flows. The various project components are shown on Figure 4 through Figure 9. Some modular pieces would be constructed off-site and delivered to the project site via truck, then lifted in place with a crane. Other items would require on-site installation and assembly.

2.3.3 Construction Schedule

Subject to project approval and issuance of grading, construction, and other permits, project construction is anticipated to commence in fall 2024, and last approximately 8 months with different phases of construction occurring concurrently. Grading and excavation are expected to occur over a 2 to 3 month period. Installation of the storage facility, construction of the pump stations and other subgrade improvements are expected to occur over 3 to 4 months. Final grading and landscaping would occur over 1 to 2 months.

2.3.4 Regulatory Compliance Measures

In the course of conducting the environmental analysis for this project, measures have been identified to reduce potentially significant impacts to the environmental factors analyzed in Section 3.0 to a level that is not significant. Those that are required by law, regulation, or policy are considered part of the project description and project design, and are identified as regulatory compliance measures (RCMs). Because they are part of the project, they are not considered mitigation measures (MMs). MMs are those measures required to avoid or minimize impacts after application of the RCMs. In order to address potential environmental impacts for the environmental resources analyzed in Section 3.0, both RCMs and MMs are provided there.

The following RCMs are included as part of the project description:

RCM BIO-1 Tree Removal and Replacement. Tree removal and replacement shall be performed in accordance with the City of Long Beach Municipal Code Chapter 14.28 – Trees and Shrubs, and the City Tree Maintenance Policy, including using the trees from the Approved Street Tree List. All trees removed that meet criteria for replacement need to be replaced at a 2:1 ratio. Trees that need to be removed and replaced shall be approved by the City of Long Beach.

RCM BIO-2 Compliance with Migratory Bird Treaty Act (MBTA). Tree and vegetation removal shall be restricted to outside the active nesting season (January 1 through September 30). If construction is proposed between January 1 and September 30, a qualified biologist or ornithologist familiar with local avian species and the requirements of the MBTA and the California Fish and Game Code shall conduct a pre-construction nesting bird survey to determine if active nests of special-status birds or bird species protected by the (MBTA) and/or the California Fish and Game Code, are present in the project site or within 300 feet of the site. The survey shall be conducted within 3 days prior to initiation of project activities that would occur during the nesting bird season (January 1 to September 30). The results of the survey shall be recorded in a memorandum and submitted to the City of Long Beach (City) Director of Community Development, or designee, within 48 hours. If the survey is positive, and the nesting species are subject to the MBTA or the California Fish and Game Code, the memorandum shall be submitted to the California Department of Fish and Wildlife (CDFW) to determine appropriate action. If an active nest is found, a qualified biologist or ornithologist shall be retained to monitor, and a no-activity buffer shall be established by the biologist or ornithologist based on the bird species and construction activity. Construction within the no-work buffer shall be postponed or halted, at the discretion of the biologist or ornithologist, until the nest is vacated, juveniles have fledged, and adults and young are no longer reliant on the nest for survival.

RCM BIO-3 Permits for Jurisdictional Resources. As the project proponent, the City of Long Beach will obtain the following permits related to jurisdictional resources that would be directly or indirectly impacted by the proposed project:

- U.S. Army Corps of Engineers (USACE) Clean Water Act (CWA) Section 404 Permit
- RWQCB CWA Section 401 Water Quality Standards Certification
- California Department of Fish and Game (CDFW), Lake and Streambed Alteration Agreement under Section 1602 of the California Fish and Game Code

The permits shall be obtained prior to beginning construction and all permit measures and conditions shall be followed.

RCM GEO-1 Erosion Control Measures. Potential soil erosion that would occur during construction activities, including site grading, structure assembly, and utility extension shall be reduced to a less than significant level with standard erosion mitigation measures, including the use of hay bales and other erosion control devices as determined by site-specific conditions, and soil wetting, applied as required under applicable regulatory guidelines and standards. Prior to issuance of a grading permit, the City of Long Beach's (City) Director of Community Development, or designee, shall confirm that BMPs associated with construction activities have been developed to ensure that the potential for soil erosion and sedimentation is minimized and to reduce pollutant discharges to the City MS4 as a result of construction activities in compliance with Long Beach Municipal Code (LBMC) Section 8.96.120. These BMPs shall be included in the project plan specifications and implemented by the project contractor. In addition, the project would be enrolled in the California Construction General Permit (WQO 2009-0009) through the State Water Resources Control Board, which includes preparation of a SWPPP.

RCM HYD-1. Obtain Pre-Construction Permits. The regulatory compliance measures during construction are to enroll and comply with the:

- Construction General Permit (WQO 2009-0009)
- Los Angeles County Flood Control District Major Modification Permit
- Department United States Army Corps of Engineers Clean Water Act Section 404 Permit (if applicable)

RCM HYD-2. Obtain Post-Construction Permits. The mitigation measures post-construction and long term are to enroll and comply with the:

- City of Long Beach would enter into a Use and Maintenance Agreement with the LACFCD to accept responsibility for maintenance of the City's proposed diversion structure within the LACFCD system
- A Maintenance Plan and a Monitoring Plan
- Los Angeles County Flood Control District Discharge Permit for the discharge of treated water into Los Cerritos Channel

2.4 OTHER PUBLIC AGENCIES WHOSE APPROVAL IS REQUIRED

Other public agencies whose approval may be required for permits, financing approval, or participation agreement are as follows:

- Use and Maintenance Agreement between City of Long Beach and LACFCD for continued access to the adjacent flood control channel
- LACFCD Major Modification Permit and Discharge Permit for the discharge of treated water into Los Cerritos Channel
- Enrollment in California Construction General Permit (WQO 2009-0009) through the State Water Resources Control Board, which includes preparation of a Stormwater Pollution Prevention Plan (SWPPP)
- National Pollutant Discharge Elimination System (NPDES) permit from Regional Water Quality Control Board (RWQCB)
- Permits related to jurisdictional resources, may be required, pending agency review of the IS/MND:
    - U.S. Army Corps of Engineers (USACE) Clean Water Act (CWA) Section 404 Permit
    - RWQCB CWA Section 401 Water Quality Standards Certification
    - California Department of Fish and Game (CDFW), Lake and Streambed Alteration Agreement under Section 1602 of the California Fish and Game Code

2.5 CALIFORNIA NATIVE AMERICAN TRIBE CONSULTATION

Under CEQA, Assembly Bill (AB) 52 requires a lead agency to evaluate a project's potential to impact "tribal cultural resources." In addition, AB 52 requires the lead agency to consult with any California Native American tribe that has previously requested that the lead agency provide the tribe with notice of such projects and consultation and is traditionally and culturally affiliated with the geographic area of a proposed project. Consultations must include discussing the type of environmental review necessary, the significance of tribal cultural resources, and the significance of the project's impacts on the tribal cultural resources (as applicable), and alternatives and mitigation measures recommended by the tribe.

The City of Long Beach Department of Public Works sent formal AB 52 notification letters via certified mail on August 19, 2022 to the following: tribal contacts that were identified by the Native American Heritage Commission (NAHC) as having knowledge of and interest in cultural resources in the project area include the following:

- Andrew Salas, Chairperson, Gabrieleno Band of Mission Indians – Kizh Nation
- Anthony Morales, Chairperson, Gabrieleno/Tongva San Gabriel Band of Mission Indians
- Sandonne Goad, Chairperson, Gabrielino/Tongva Nation
- Robert Dorame, Chairperson, Gabrielino Tongva Indians of California Tribal Council
- Christina Conley, Tribal Consultant and Administrator, Gabrieleno Tongva Indians of California Tribal Council
- Charles Alvarez, Gabrielino-Tongva Tribe
- Joyce Perry, Tribal Manager, Juaneno Band of Mission Indians Acjachemen Nation – Belardes
- Matias Belardes, Chairperson, Juaneno Band of Mission Indians Acjachemen Nation – Belardes

- Lovina Redner, Tribal Chari, Santa Rosa Band of Cahuilla Indians
- Joseph Ontiveros, Cultural Resource Department, Soboba Band of Luiseno Indians
- Isaiah Vivanco, Chairperson, Soboba Band of Luiseno Indians

As of October 27, 2022, City staff held a consultation meeting with tribal representatives from the Gabrieleno Band of Mission Indians – Kizh Nation. Requested mitigation measures were provided to City staff on November 2, 2022. At the request of Christina Conley, Native American Cultural Resource Monitor for the Gabrielino Tongva Indians of California (GIOTC) on October 25, 2022, City staff consulted with tribal representatives. The discussion of potential impacts and requested mitigation measures are included in Section 3.4.18, Tribal Cultural Resources, of this IS/MND.

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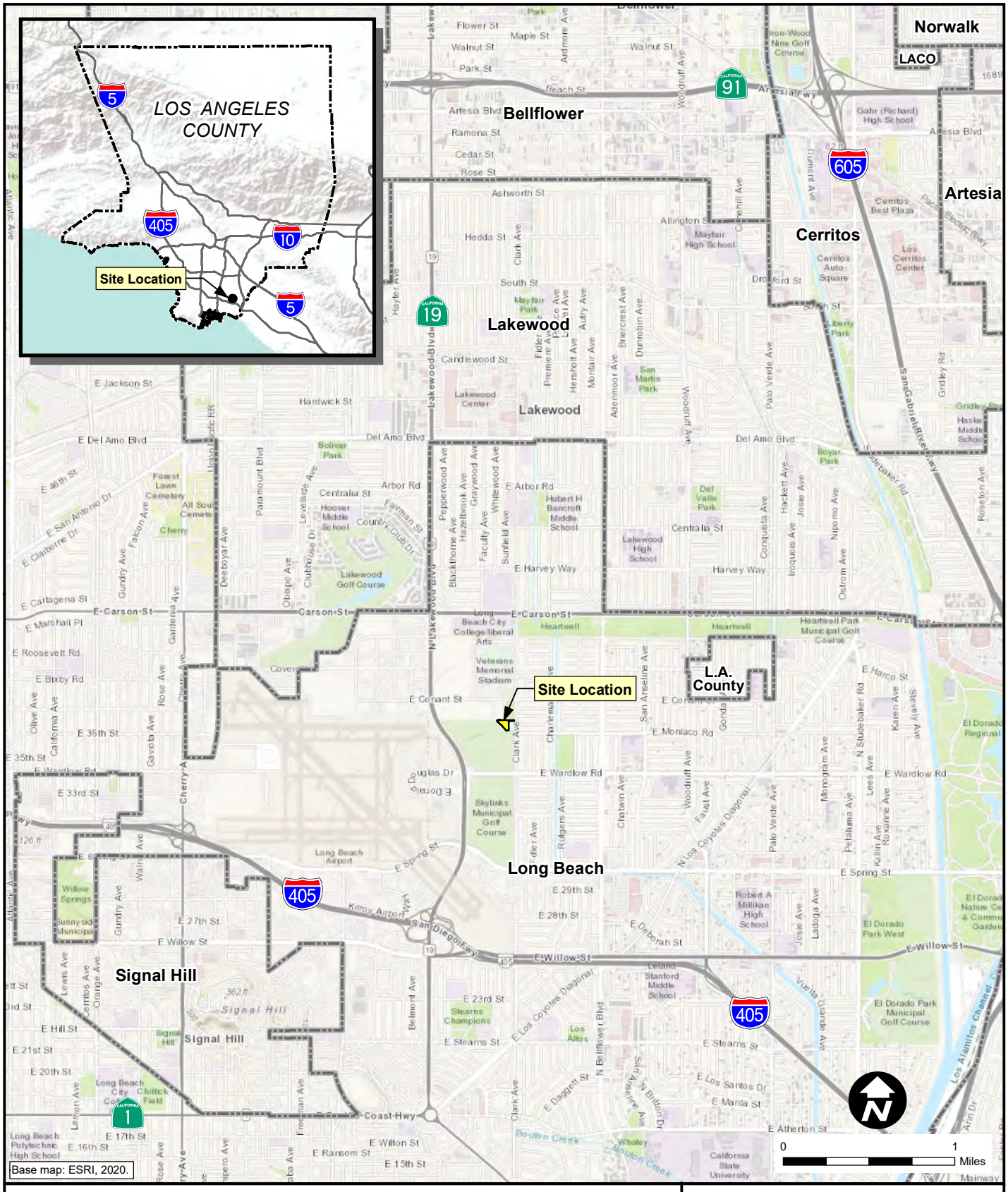

City Boundary

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT

Figure 1

Vicinity Map

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SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT

Figure 2

Project Location Aerial and Surrounding Land Use

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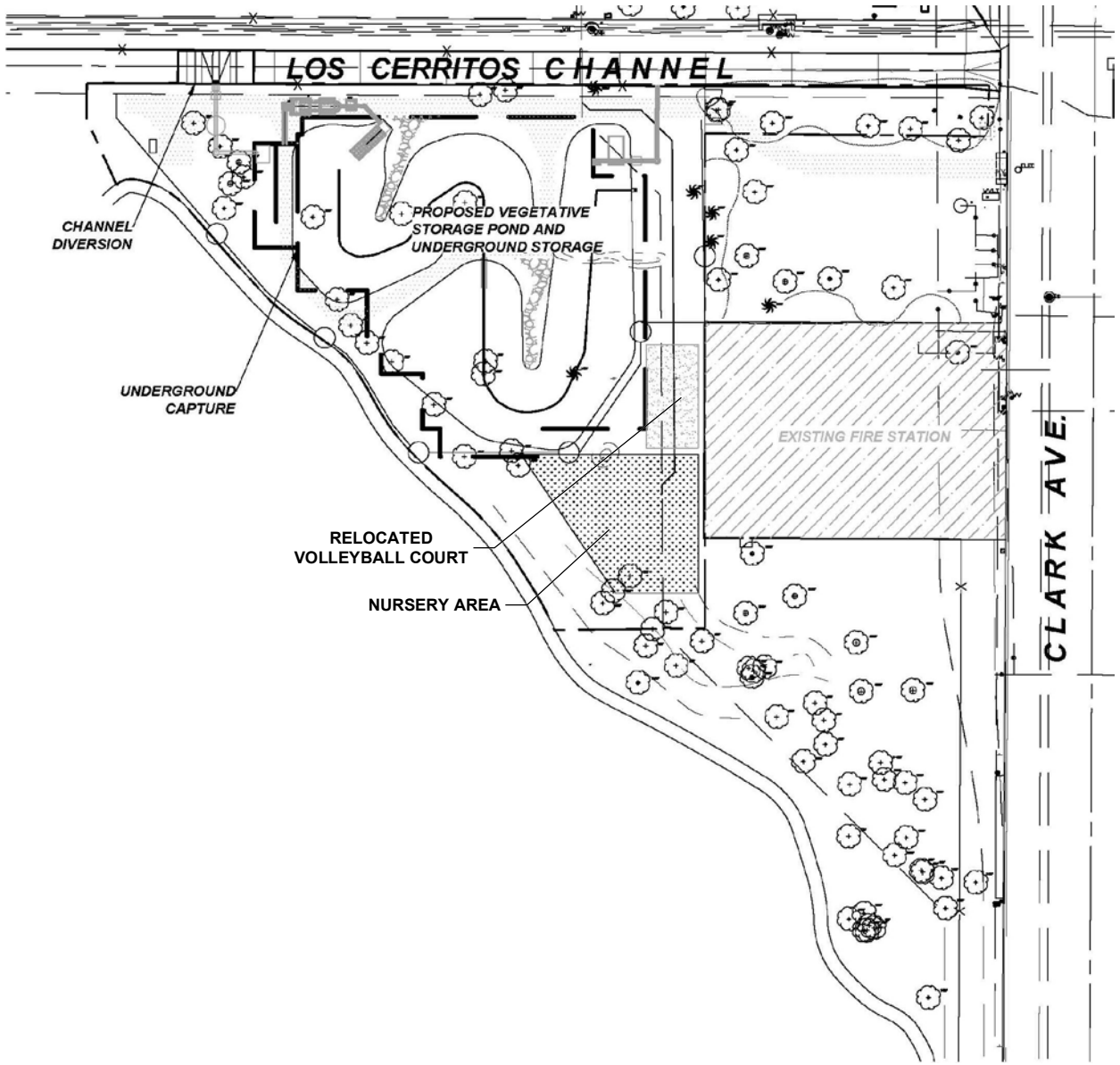

NOT TO SCALE

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT

Figure 3

Project Site Overview

Source: Tetra Tech 90% Design Submittal 2023

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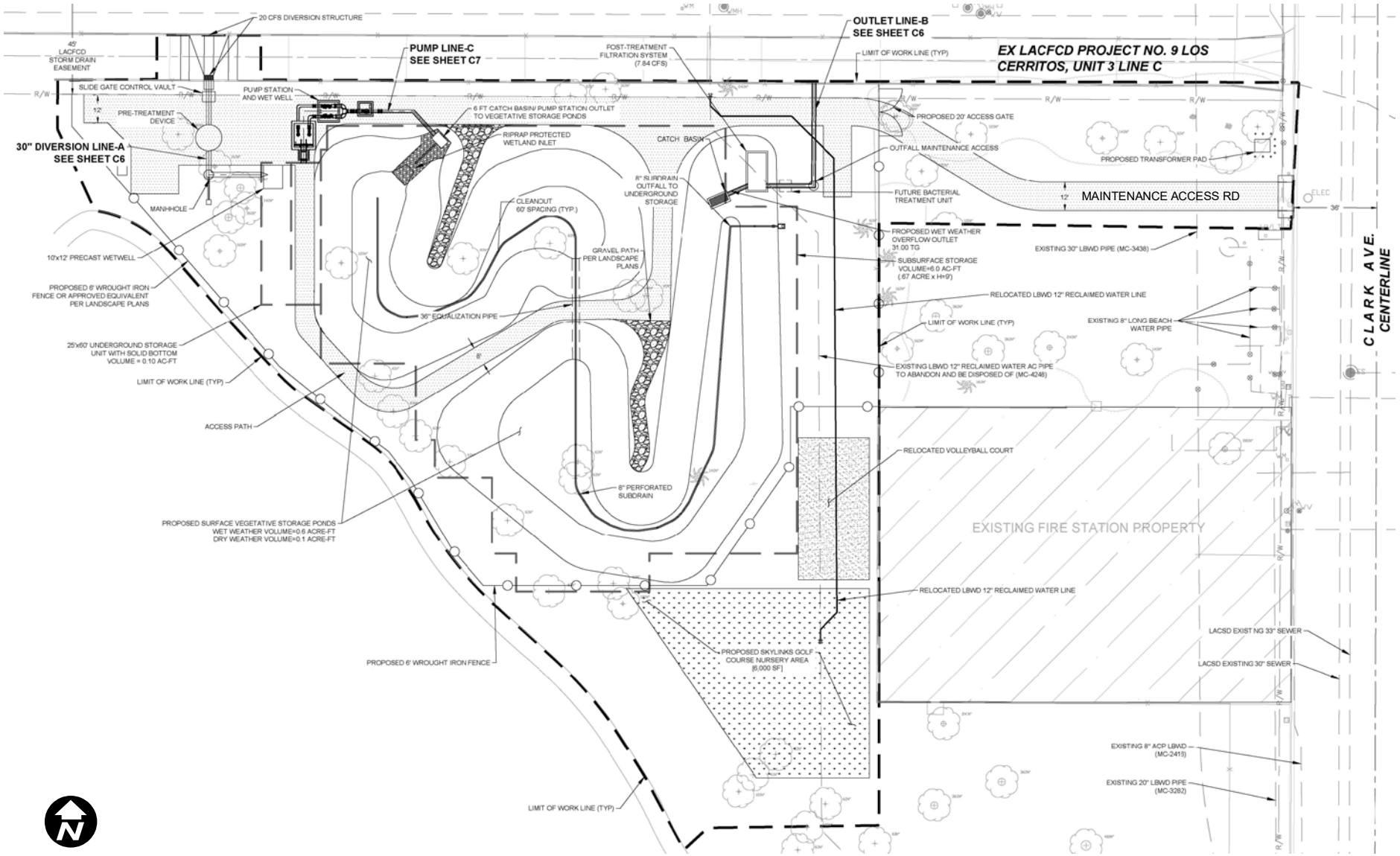

NOT TO SCALE

Area of Subsurface Volume = 6.0 ac-ft (0.67 ac x H = 9")

Limit of Work Line

Proposed 6' Wrought Iron Fence

Source: Tetra Tech 90% Design Submittal 2023

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT

Figure 4
Site Plan
Technical Drawing

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Adapted from:
Skylinks Golf Course at Wardlow Stormwater Capture Project, Community Meeting Presentation, March 29, 2023

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT

Figure 5
Site Plan
Schematic Drawing

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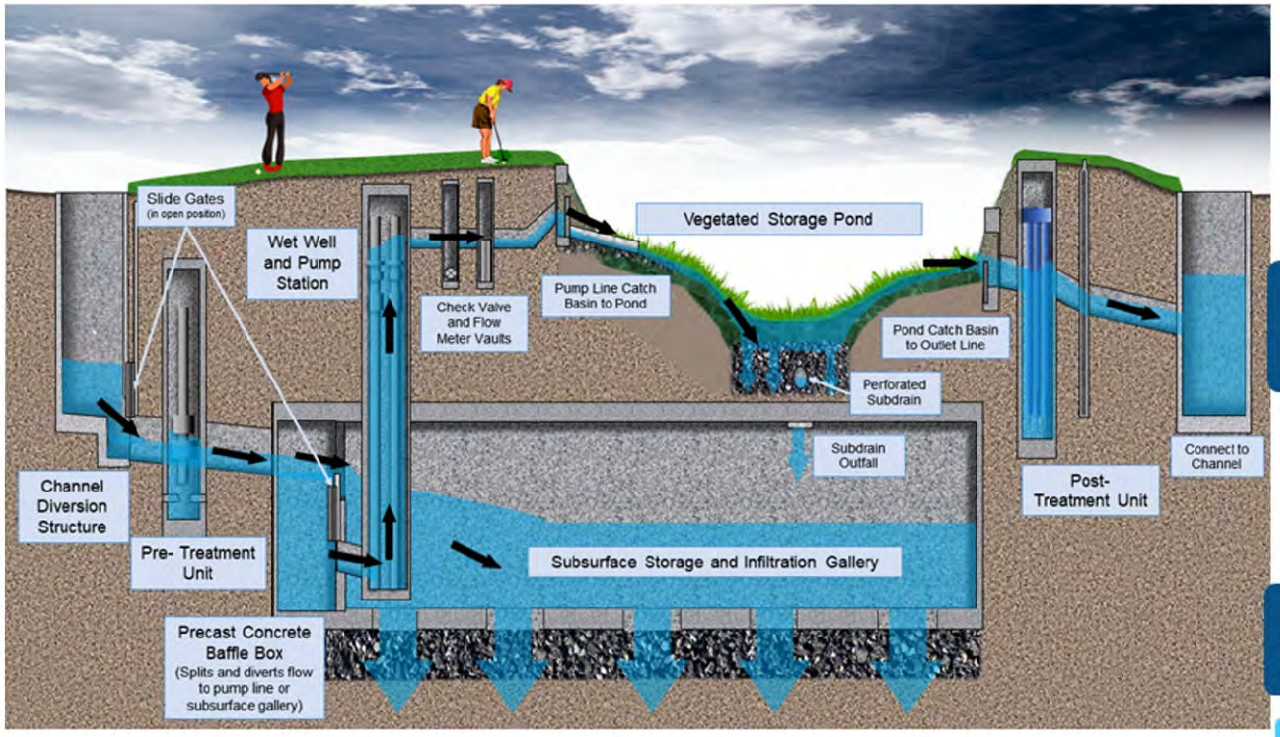

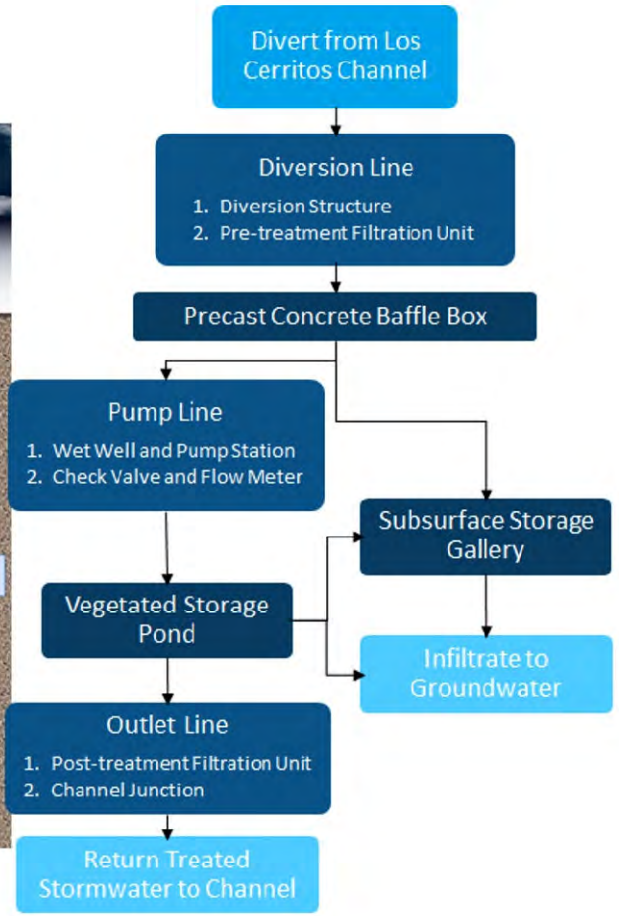

Adapted from:
Skylinks Golf Course at Wardlow Stormwater Capture Project, Community Meeting Presentation, March 29, 2023

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT

Figure 6
Stormwater Capture System Profile View

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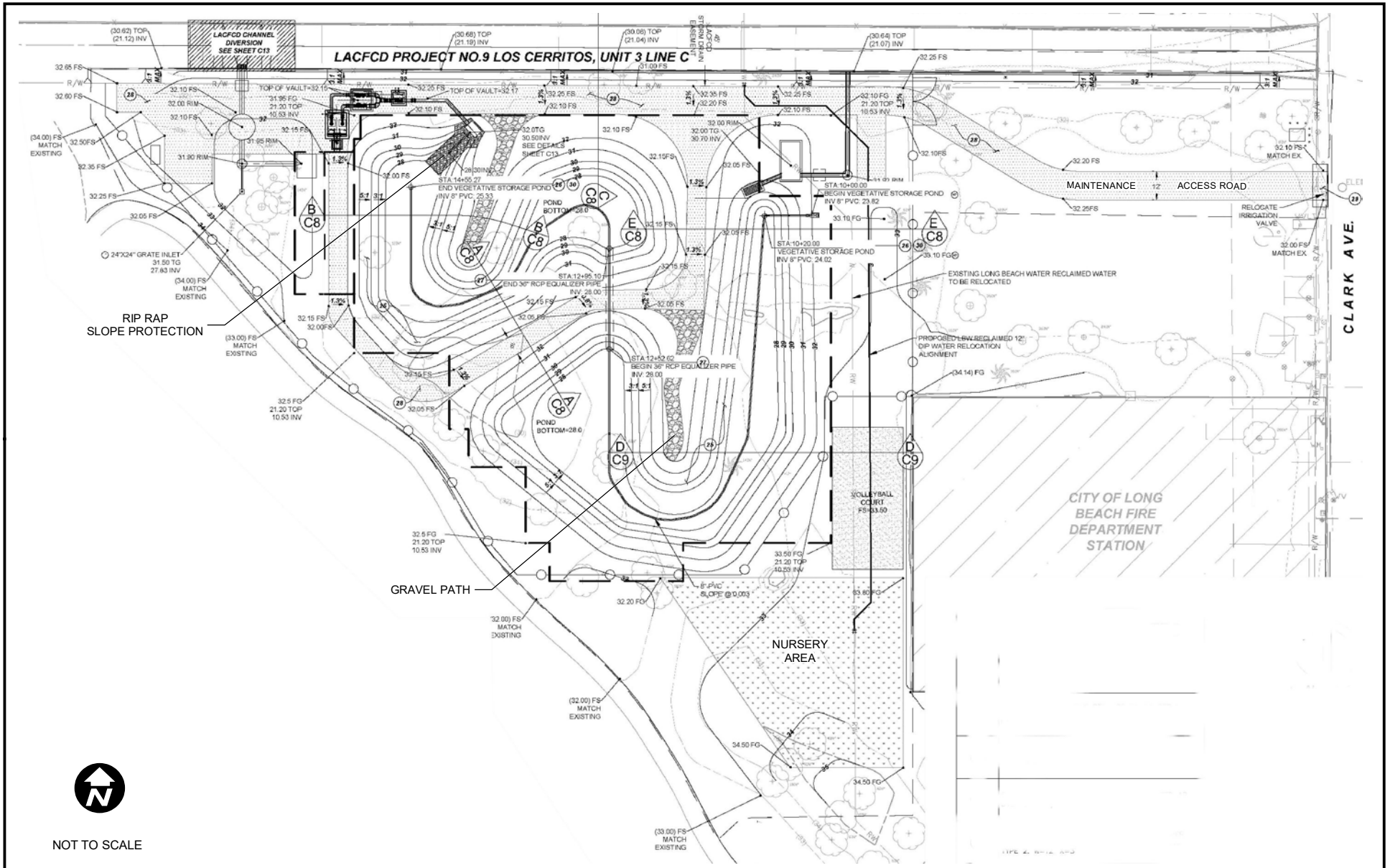

Source: Tetra Tech 90% Design Submittal 2023

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT

Figure 7

Grading Plan

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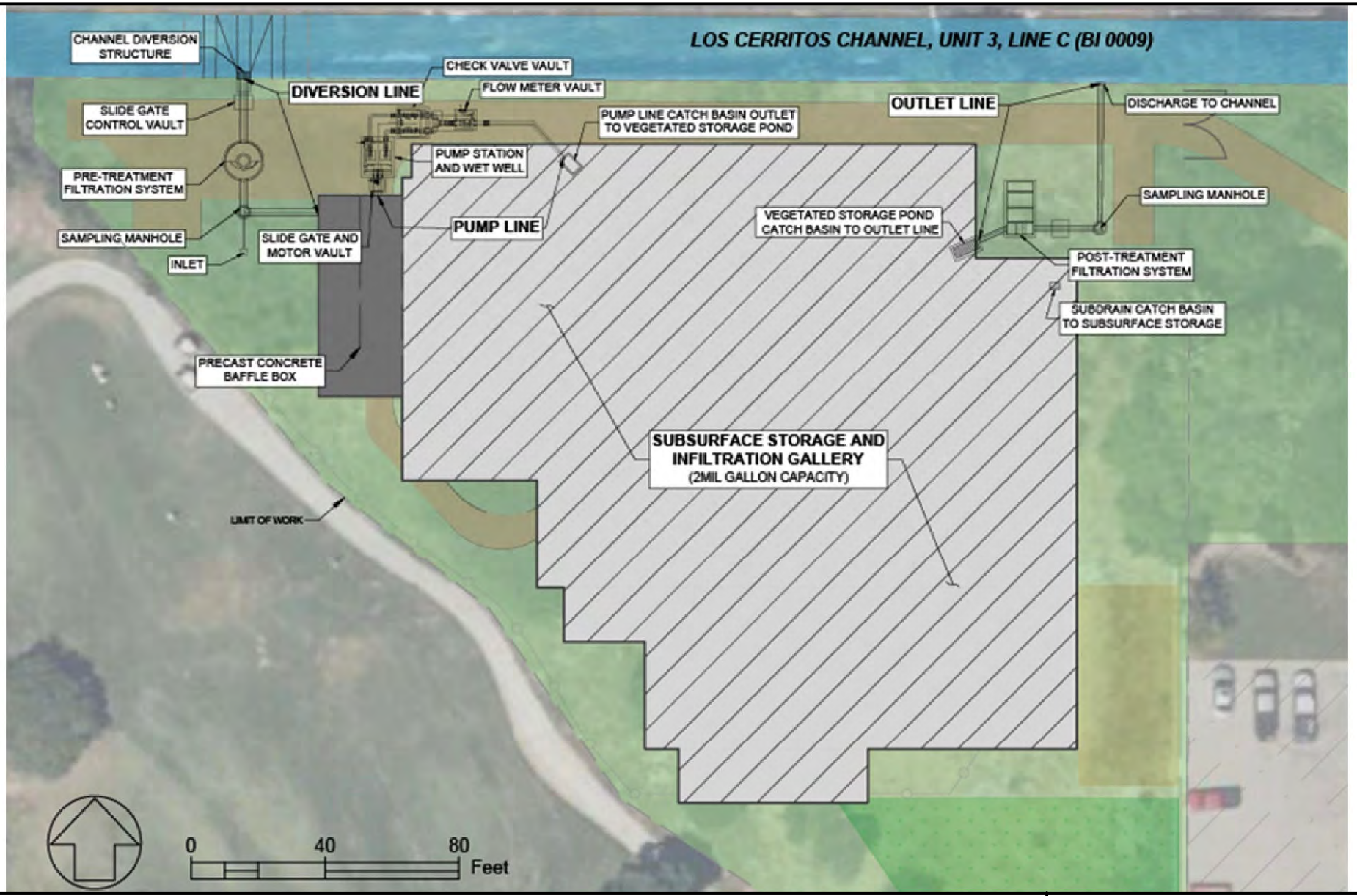

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT

Figure 8
Subsurface Stormwater Capture Design

Adapted from:
Skylinks Golf Course at Wardlow Stormwater Capture Project, Community Meeting Presentation, March 29, 2023

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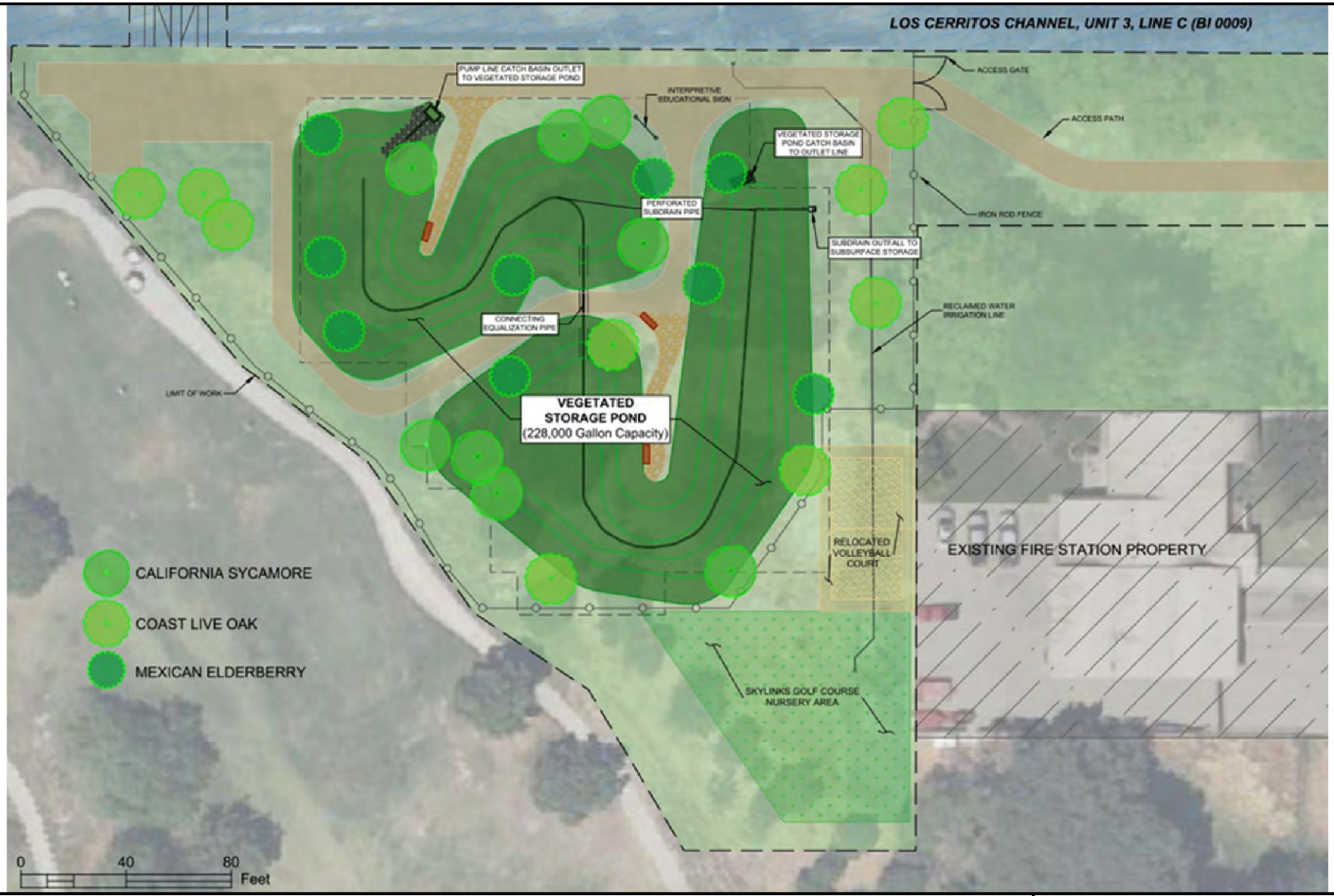

Adapted from:
Skylinks Golf Course at Wardlow Stormwater Capture Project, Community Meeting Presentation, March 29, 2023

SKYLINKS REGIONAL STORMWATER CAPTURE PROJECT

Figure 9
Surface Vegetated Storage Ponds and Simplified Landscaping Plan

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3.0 ENVIRONMENTAL CHECKLIST

3.1 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☒ Cultural Resources	☐ Energy
☒ Geology/Soils	☐ Greenhouse Gas Emissions	☒ Hazards & Hazardous Materials
☒ Hydrology/Water Quality	☐ Land Use/Planning	☐ Mineral Resources
☒ Noise	☐ Population/Housing	☐ Public Services
☐ Recreation	☒ Transportation	☒ Tribal Cultural Resources
☐ Utilities/Service Systems	☐ Wildfire	☒ Mandatory Findings of Significance

3.2 DETERMINATION

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

June 11, 2024

Signature Date

Tammy Takigawa, Civil Engineer

Name and Title

3.3 EVALUATION OF ENVIRONMENTAL IMPACTS

(1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained if it is based on project-specific factors as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

(2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

(3) Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

(4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies when the incorporation of mitigation measures has reduced an effect from a "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

(5) Earlier analyses may be used if, pursuant to tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration (Section 15063[c][3][D]). In this case, a brief discussion should identify the following:

   a. Earlier Analysis Used. Identify and state where earlier analyses are available for review.

   b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c. Mitigation Measures. For effects that are "Less Than Significant with Mitigation Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

(6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, when appropriate, include a reference to the page or pages where the statement is substantiated.

(7) Supporting Information Sources. A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

(8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

(9) The explanation of each issue should identify:

a. The significance criteria or threshold, if any, used to evaluate each question; and

b. The mitigation measure identified, if any, to reduce the impact to less than significant.

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3.4 ENVIRONMENTAL IMPACT ANALYSIS

3.4.1 AESTHETICS

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:					
a.	Have a substantial adverse effect on a scenic vista?			X	
b.	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?			X	
c.	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?				X
d.	Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?			X	

Existing Conditions:

The project site is located within a developed, urban environment at the northeast corner of the existing, approximately 1.6-acre portion of the approximately 160-acre Skylinks Golf Course. Fire Station #19 is adjacent to, and east of, the project site; single-family residential housing (the South of Conant neighborhood) is located further east on the opposite side of Clark Avenue. Rosie the Riveter Park and Long Beach City College Liberal Arts Campus Buildings 01 and 02 are adjacent to and north of the project site. Manufacturing and the remainder of Long Beach City College are located further to the north. The Long Beach Airport is located to the west, and commercial development is located to the south, of the project site.

The region is generally flat; the nearest hillsides to the project site is Signal Hill, located approximately 2.3 miles to the southwest.

The Urban Design Element of the City of Long Beach's General Plan includes the following as scenic routes: Ocean Boulevard and Livingston Drive, Ocean Boulevard on the Belmont Peninsula, the Promenade in Downtown, the Los Angeles River and San Gabriel River corridors, Appian Way along the Colorado Lagoon, Marine Stadium, Studebaker Road, the approach road to Rancho Los Cerritos, and the entire stretch of Pacific Coast Highway. All of these routes are well removed from the proposed project location (City of Long Beach 2019a). The nearest designated or eligible state scenic highway is 2.3 miles south of the proposed project site (i.e., a portion of East. Pacific Coast Highway, beginning at the Los Alamitos Traffic Circle and heading southeast) (California Department of Transportation [Caltrans] 2019).

Discussion:

a. Would the project have a substantial adverse effect on a scenic vista?

Less Than Significant Impact. A scenic vista generally provides focal views of objects, settings, or features of visual interest; or panoramic views of large geographic areas of scenic quality, primarily from a given vantage point. Substantial constraints occur if the proposed project would introduce incompatible visual elements within a field of view containing a scenic vista or substantially alters a view of a scenic vista. The project site is in a generally undeveloped portion of the Skylinks Golf Course that is located outside of the fairway and within a developed urban environment. The proposed project would include primarily subsurface infrastructure improvements, and the existing space would be developed and used as a public recreational facility. Given that the proposed water quality improvements would primarily be subsurface facilities and park conditions would be improved after construction, the nearest scenic vistas are more than two miles removed and would not be affected, and that the end conditions at project completion would be similar to existing conditions, the project's visual impact on scenic vistas would be less than significant.

b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a state scenic highway?

Less than Significant Impact. The project site is located within a developed, urban environment and is more than two miles from, and is not visible from, the nearest designated or eligible state scenic highway (California Department of Transportation 2019). However, the project would result in the removal of most of the existing trees on the project site (estimated at 64 trees, with 21 of them meeting the City's definition of a mature tree requiring replacement) during construction. This impact would be minimized by planting new trees at a 2:1 ratio in accordance with Long Beach Municipal Code requirements, and numerous shrubs as part of the proposed Landscaping Plan for the project. A simplified Landscaping Plan is shown on Figure 9. Tree removal and replacement is discussed in more detail in Section 3.4.4, Biological Resources. Therefore, any impact to scenic resources would be temporary, relatively minimal, and limited to the immediate vicinity of the project site. As such, the project's impact would be less than significant.

c. Would the project conflict with applicable zoning and other regulations governing scenic quality?

No Impact. The proposed project includes the construction and operation of a storm water infrastructure improvements within a generally undeveloped portion of the Skylinks Golf Course that is located outside of the fairway. Infrastructure improvements would be installed underground. Once installation is complete, fill would be placed back on top of the unit up to the existing open space grade and the area would be landscaped, and a volleyball court would be relocated. Since the infrastructure improvements would primarily occur underground, changes at the project site can be characterized as developing an existing, generally undeveloped portion of the Skylinks golf course that is located outside of the fairway and consists of non-native trees and grasses into a readily-accessible, landscaped park generally consisting of native trees and shrubs. No change to the character or use of the site would occur. Therefore, no project impact would result.

d. Would the project create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?

Less Than Significant Impact. Construction would take place during daylight hours; therefore, no night lighting would be required. Large construction equipment and soil stockpiles would periodically be left on site which may temporarily affect views from the golf course or fire station. As the site is set back from Clark Avenue, views from the neighborhood across the street would not be affected. This would be a less than significant impact. No new lighting is anticipated for the operation of the project because all stormwater infrastructure would be installed underground. Therefore, project operation would not create a new source of light or glare and no impact would result.

Mitigation Measures:

No mitigation measures are required.

3.4.2 AGRICULTURE AND FOREST RESOURCES

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b.	Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?				X
c.	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined in Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d.	Result in the loss of forest land or conversion of forest land to non-forest use?				X
e.	Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?				X

Existing Conditions: The project site is located on the existing, approximately 1.6-acre portion of the approximately 160-acre Skylinks Golf Course. The Skylinks Golf Course is located within a developed, urban environment. There are no agricultural or forestry uses located on or adjacent to the project site. The project site is not mapped by the Farmland Mapping and Monitoring Program according to the California Department of Conservation, Important Farmland Finder (California Department of Conservation 2022a).

Discussion:

a. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The project site is located on a portion of the existing Skylinks Golf Course and would continue to be utilized as a public recreational facility with implementation of the proposed project. There are no agricultural uses on or adjacent to the project site. The project site is also not mapped by the Farmland Mapping and Monitoring Program according to the California Department of Conservation, Important Farmland Finder (California Department of Conservation 2022a). Therefore, the proposed project would not convert farmland to non-agricultural uses and no project impact would result.

b. Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?

No Impact. The project site is a portion of the existing Skylinks Golf Course that would continue to be utilized as a public recreational facility with implementation of the proposed project. There are no agricultural uses on or within the vicinity of the project site. The project site is in the Park (P) Zoning District, is a generally undeveloped portion of the Skylinks Golf Course that is located outside of the fairway, and would be developed and used as a public recreational facility with implementation of the proposed project. Therefore, the proposed project would not conflict with existing zoning for agricultural use and no project impact would result.

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments which are much lower than normal because they are based upon farming and open space uses as opposed to full market value (California Department of Conservation 2022b). The project site is an existing City recreational facility (the Skylinks Golf Course) located within an urban environment that would not qualify for a Williamson Act Contract. Therefore, no project impact would result.

c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Public Resources Code section 12220(g)), timberland (as defined in Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. There are no forestry or timberland located on or adjacent to the project site. The project site is in the Park (P) Zoning District. The project site is currently utilized as a public recreational facility within a developed urban environment and would continue to do so with implementation of the proposed project. Therefore, no project impacts on forest or timberland would result.

d. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. There is no forest land located on or adjacent to the project site. Therefore, the proposed project would not result in the loss of forest land or conversion of forest land to a non-forest use and no project impact would result.

e. Would the project involve other changes in the existing environment that, due to their location or nature, could individually or cumulatively result in loss of Farmland to non-agricultural use or conversion of forest land to non-forest use?

No Impact. The proposed project would not involve changes to the existing environment which, due to their location or nature, could result in the conversion of Farmland to non-agricultural use. As identified above, the project site is located in a developed urban environment and there are no agricultural uses on or adjacent to the project site. The project site is currently developed and utilized as a public recreational facility and would continue to be used as a public recreational facility with implementation of the proposed project. Therefore, no project impact would result.

Mitigation Measures:

No mitigation measures are required.

3.4.3 AIR QUALITY

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:					
a.	Conflict with or obstruct implementation of the applicable air quality plan?			X	
b.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a non-attainment area for an applicable federal or state ambient air quality standard?			X	
c.	Expose sensitive receptors to substantial pollutant concentrations?			X	
d.	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

Existing Conditions:

Pursuant to the Clean Air Act Amendments of 1990, the USEPA has established National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. The NAAQS are classified as primary and secondary standards. Primary standards prescribe the maximum permissible concentration in the ambient air and are required to protect public health. Secondary standards specify levels of air quality required to protect public welfare, including materials, soils, vegetation, and wildlife, from any known or anticipated adverse effects. NAAQS are established for six pollutants (known as criteria pollutants): ozone (O_3), particle pollution (i.e., respirable particulate matter less than 10 microns in diameter [PM_{10}] and respirable particulate matter less than 2.5 microns in diameter [$PM_{2.5}$]), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead (Pb). The California Air Resources Board (CARB) has also established its own air quality standards in the state of California, known as the California Ambient Air Quality Standards (CAAQS). The CAAQS are generally more stringent than the NAAQS and include air quality standards for all the criteria pollutants listed under NAAQS plus sulfates (SO_4), hydrogen sulfide (H_2S), vinyl chloride, and visibility-reducing particulate matter.

The USEPA classifies the air quality within an Air Quality Control Region with regard to its attainment of federal primary and secondary NAAQS. An area with air quality better than the NAAQS for a specific pollutant is designated as being in attainment for that pollutant. Any area not meeting the NAAQS is classified as a nonattainment area. Where there is a lack of data for the USEPA to make a determination regarding attainment or nonattainment, the area is designated as unclassified and is treated as an attainment area until proven otherwise. Similarly, the CARB makes state area designations for the state criteria pollutants.

The proposed project is in the City of Long Beach within Los Angeles County, which is subject to the South Coast Air Quality Management District (SCAQMD) regulations. Pollutant concentrations within Los Angeles County are assessed relative to both the federal and state ambient air quality standards.

The county of Los Angeles is in attainment for all Federal criteria pollutants except for O_3, $PM_{2.5}$, and Pb, and is in attainment for all State criteria except O_3, $PM_{2.5}$, PM_{10} (CARB 2020).

Applicable SCAQMD rules are summarized here.

Rule 401, Visible Emissions, prohibits the discharge of visible emissions, with respect to Ringelmann Chart Shades Number 1 and Number 2, for a period or periods aggregating more than three minutes in any one hour.

Rule 402, Nuisance, prohibits the discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

Rule 403, Fugitive Dust, requires control measures for fugitive dust from active operations, open storage piles, or disturbed surface areas and prohibits activities that would cause visible dust emissions of 20 percent. The rule also prescribes best available control measures applicable to construction activity sources.

Discussion:

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. The federal CAA requires states to develop plans, known as State Implementation Plans (SIPs), stating how they will attain or maintain NAAQS. SIPs are a compilation of new and previously approved plans, programs, district rules, state regulations and federal controls. States and local air quality management agencies prepare SIPs for approval by the USEPA. To this end, the SCAQMD with contribution from and collaboration with CARB, the Southern California Association of Governments (SCAG), and the USEPA, has prepared the Final 2016 Air Quality Management Plan (AQMP) to ensure continued progress toward clean air and reach federal and state compliance requirements.

The AQMP incorporates emissions projections based on growth forecasts accounted for in local and regional general plans. Local governments maintain the authority to determine the types of land use that are allowed within their jurisdiction. For example, in a city's general plan, each parcel of land within that city is given a land use designation (i.e., residential, industrial, etc.). Land use types that do not comply with general plan designations are inconsistent with the general plan. A proposed project that is inconsistent with a local general plan is also inconsistent with the AQMP.

The proposed project is located within the South Coast Air Basin (SCAB) which is the geographic area under the jurisdiction of the SCAQMD. The SCAQMD is responsible for administering the Air Quality Management Plan (AQMP) for the SCAB. In line with the AQMP, the City of Long Beach has adopted an Air Quality Element as part of its General Plan (City of Long Beach Air Quality Element). Policies in the Air Quality Element are consistent with the Land Use Element and Mobility Element of the General Plan and contains goals and policies geared toward achieving federal and state air quality targets in the SCAB. Since the land use designation of the proposed project site would not change post project construction, and the proposed project would not include components that would result in significant air quality emissions such as additional vehicle trips, boilers, or generators). Therefore, the completed proposed project is not anticipated to conflict with, or obstruct implementation of the AQMP.

b. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a non-attainment area for an applicable federal or state ambient air quality standard?

Less Than Significant Impact. Per CEQA, a project is cumulatively considerable if the incremental effects of the project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. CEQA also prescribes that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements

in a previously approved plan (e.g., air quality attainment or maintenance plan) or mitigation program that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located (California Office of Administrative Law 2022). As discussed above, the proposed project is not anticipated to conflict or obstruct the AQMP which is the applicable air quality attainment plan for the SCAB. However, the construction of the proposed project could affect regional air quality in the short-term during construction. To determine the extent to which a project would impact air quality in the SCAB, the SCAQMD has established emission significance thresholds and indicators.

The SCAQMD has established significance thresholds for criteria pollutants generated during construction and operation, and a significant impact would occur if the proposed project would result in construction or operational emissions that exceed the established significance thresholds. Projects with emissions below established thresholds would not have a significant impact on air quality. Projects with emissions equal to or exceeding the established significance threshold would have a potentially significant adverse impact on air quality unless mitigation measures are implemented. A summary of the SCAQMD air quality significance thresholds is presented in Table 3-2.

Table 3-1. SCAQMD Air Quality Significance Thresholds

Pollutant	Construction (lb/day)	Operation(lb/day)
NOx	100	55
VOC	75	55
PM_{10}	150	150
$PM_{2.5}$	55	55
SOx	150	150
CO	550	550
Lead	3	3
TACs	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	

Notes:
CO carbon monoxide
lb/day pounds per day
NOx oxides of nitrogen (nitric oxide and nitrogen dioxide)
$PM_{2.5}$ respirable particulate matter less than 2.5 microns in diameter
PM_{10} respirable particulate matter less than 10 microns in diameter
SCAQMD South Coast Air Quality Management District
SOx oxides of sulfur
TACs toxic air contaminants
VOC volatile organic compounds

Construction Emissions

Construction emissions are temporary emissions occurring only while a project is being constructed and end when construction is complete. Construction emissions originate primarily from the combustion of fossil fuels used by mobile on-road sources (e.g., workers vehicles, material and equipment delivery trucks, soil haul trucks) and mobile off-road sources (e.g., concrete industrial saws, excavators, off-highway trucks, dozers, backhoes,

excavators, rollers, trenchers, skid steer loaders, welders, air compressors, cranes, pavers, water trucks, concrete delivery trucks, and cement and mortar mixers).

Emissions from the proposed project would result from construction activities including the following phases:

- Site Preparation: mobilization, clearing and grubbing, removal of debris in preparation for excavation and soil removal phase
- Grading: excavation, soil removal
- Construction: subgrade, utility installation, construction of treatment structure, and restoration of the site

Construction activities resulting from the proposed project would occur during calendar years 2024 and 2025. Air emissions resulting from construction activities of the proposed project were calculated based on a worst-case scenario where each equipment piece in each phase runs simultaneously. This approach assumes maximum daily operating time for all equipment assigned in each construction phase (i.e., Site Preparation, Grading, and Construction). Construction emissions were calculated using the California Emissions Estimator Model (CalEEMod). CalEEMod is widely accepted to provide a uniform platform to estimate potential emissions resulting from construction and operation activities of land use projects in California. The model uses pre-programed algorithms to calculate emissions based on data entered. The algorithms are designed to take information such as project size; construction length; vehicle and equipment types; number of vehicle trips and lengths; and equipment operating hours to calculate emissions of criteria pollutants and greenhouse gases. Emission calculations provided in this document factor dust control measures such as those prescribed in SCAQMD Rule 403 and off-road construction vehicles using a fleet average for Tier 4 engines.

CalEEMod input values and calculated air emission results for the proposed project are provided as Appendix A and summarized in Table 3-3. As shown in Table 3-3, project construction impacts would be less than significant.

Table 3-2. Project Construction Emissions of Criteria Pollutants (lb/day)

Calendar Year	VOCs	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
2024	0.32	5.81	13.41	0.04	2.92	1.40
2025	0.32	6.05	13.39	0.04	2.92	1.40
Threshold of Significance	75	100	550	150	150	55
LST	None	80	1558	N/A	21	7
Significant?	**No**	**No**	**No**	**No**	**No**	**No**

Notes:
CO carbon monoxide
lb/day pounds per day
LST localized significance threshold
N/A not applicable
NOx oxides of nitrogen (nitric oxide and nitrogen dioxide)
PM_{10} respirable particulate matter less than 10 microns in diameter
$PM_{2.5}$ respirable particulate matter less than 2.5 microns in diameter
SOx oxides of sulfur (sulfur dioxide and sulfur trioxide)
VOC volatile organic compounds

Operation Emissions

Once the proposed project is constructed, this area of the Golf Course/park would be restored, and its recreational use would resume mostly to pre-construction conditions (e.g., neighboring residents would visit the park for recreational purposes), with the exception of the fenced in vegetated storage pond area. The only day-to-day operational activities added by the proposed project would be the drainage pumps, which would operate on

electricity and would not be expected to generate direct emissions of criteria air pollutants. Maintenance workers would come to the site periodically for routine maintenance activities. A draft maintenance plan would be developed as part of the 100% final project design and would include details on equipment needed and standard practices and procedures. The final maintenance plan would be completed at the end of construction when more detailed information is available, but only a nominal number of vehicles are anticipated for operations and maintenance. Overall, operational emissions from the proposed project are not expected to be significant.

c. Would the project expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. The project site is primarily surrounded by open space, industrial and institutional facilities, low density residential, and regional serving facilities.

The SCAQMD has established localized significance thresholds (LSTs) to address the impacts that pollutant concentrations could have on nearby receptors.

LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard and are developed based on the ambient concentrations of that pollutant for each source receptor area and distance to the nearest sensitive receptor. LSTs are applicable for projects that generate oxides of nitrogen (NOx), CO, PM_{10}, and $PM_{2.5}$. LSTs are based on the following criteria: geographic location of the project, project site size, and proximity between the project site and the nearest sensitive receptor such as residences and schools (SCAQMD 2022).

Construction Thresholds

The SCAQMD has prepared LST guidance to help lead agencies assess localized air quality impacts from projects that are less than five acres and generate NOx, CO, PM_{10}, and $PM_{2.5}$. The methodology for analyzing localized air quality impacts from proposed projects is presented in the SCAQMD *Final Localized Significance Threshold Methodology* document (SCAQMD 2008a). The methodology includes look-up tables with localized significance thresholds according to source receptor area for one-, two- and five-acre projects. The LST methodology and associated mass rates are not designed to evaluate localized impacts from mobile sources traveling over the roadways. Thus, only emissions generated by construction equipment and vehicles while at the site are used to evaluate LST. Construction emissions would have a localized impact if they exceeded LST.

Construction Analysis

The project Site is located in the City of Long Beach in Los Angeles County. The nearest sensitive receptors to the project site are residential housing units to the east. The estimated proximity of the nearest housing unit to the project site is approximately 50 meters (164 feet). The maximum area disturbed per day based on equipment use is 1.5 acres. Thus, LSTs were based on the 2-acre LST lookup table and compared against emissions calculated using CalEEMod. Based on the LST analysis, project construction emissions are below LSTs. LSTs and the associated significance test are summarized in Table 3-3.

Toxic Air Contaminants

The SCAQMD prescribes toxic air contaminant thresholds (TACs) that, if exceeded, would result in a significant impact to nearby sensitive receptors. Toxic air contaminants (TACs) are substances that can cause cancer or other serious health effects. One route of exposure to TACs is through breathing contaminated air. Health risks associated with TACs are estimated by determining how hazardous a substance is and how much of this substance a receptor is exposed to. Sources of TACs include passenger cars, construction vehicles, manufacturing plants, and refineries.

Emissions of TACs associated with the proposed project would be emitted primarily through the combustion of diesel fuel used by construction equipment during the construction of the project. These emissions are temporary and would stop once the construction phase is completed.

The operation of the proposed project is not anticipated to add any significant sources of toxic air contaminant, and therefore, would have a less than significant impact on sensitive receptors.

Emissions of TACs from mobile sources are regulated at the state level through the implementation of measures and programs including the pursuit of low-emission vehicle programs, low carbon fuel standards and heavy-duty vehicle emissions regulations. Applicable measures for the proposed project are the CARB's In-Use Off-Road Diesel Fueled Fleets Regulation and the In-Use On-Road Diesel-Fueled Vehicles. Both regulations are enforced by CARB, and fleet owners (e.g., construction companies, equipment rental companies, brokers) are responsible for meeting compliance requirements. Tier 4 engines in off-road vehicles have been factored into the emissions calculations for this project as this group of engines is anticipated to be predominant in off-road vehicles at the time of construction. Tier 4 engines are part of an emission reduction measure being pursued by the State of California. The SCAQMD has neither adopted nor recommended methodology for assessing health risk analysis associated with mobile sources at construction sites.

The Office of Environmental Health Hazard Assessment (OEHHA), in its Guidance Manual for Preparation of Health Risk Assessments associated with stationary sources, recommends that a 30-year exposure duration be used as the basis for estimating cancer risk at the maximum exposed individual resident in the Hot Spots Program and the 9 and 70- year cancer risk as supplemental information (OEHHA 2015). Since the Hot Spot Program is aimed at stationary sources and long-term exposure, and the proposed project would neither have stationary sources nor result in long term exposure to nearby residents, the construction, operation, and maintenance of the proposed project is expected to have a less than significant impact on sensitive receptors.

d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less Than Significant Impact. Construction of the proposed project would result in some odors associated with diesel emissions from construction equipment. Odors from construction sources would be significant if they were to become a nuisance pursuant to SCAQMD Rule 402. To become a nuisance, odor resulting from the proposed project would need to generate multiple valid odor complaints. Diesel odors are common in urbanized environments, and during project construction, would be temporary and localized, and not expected to result in substantial odor impacts.

Air emissions resulting from the proposed project, including odors, during operation are anticipated to be absent or minimal. Therefore, operation of the proposed project is not expected to result in substantial odors.

Mitigation Measures:

No mitigation measures are required.

3.4.4 BIOLOGICAL RESOURCES

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			X	
b.	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?				X
c.	Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X	
d.	Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X	
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	-
f.	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

Existing Conditions:

The project site is located within a highly urbanized region in the City of Long Beach and southern Los Angeles County near the Long Beach Airport. The site is within the Skylinks Golf Course, the concrete Los Cerritos Channel is located along the northern boundary of the site, and Long Beach Fire Station #19 is located directly southeast of the site. The site is generally surrounded by industrial buildings to the north, residential development to the east, and the Skylinks Golf Course to the south and west.

A general biological field survey was conducted at the project site on September 9, 2021. An arborist conducted a tree field survey in early 2023 (Perry 2023). A monarch butterfly (*Danaus plexippus*) and tree field survey was also conducted at the site on February 21 and March 13, 2023 by Tetra Tech. The biological survey report and

the monarch butterfly and tree survey report are provided in Appendix B. The tree survey report includes the findings of the arborist tree field survey. A total of 64 trees were measured on the project site (15 by the arborist who focused on larger trees and 49 by the Tetra Tech biologist who focused on all trees on the site). Vegetation at the site was a mixture of non-native ornamental trees, non-native grasses, and cultivated grass, as described below. One stand of mature non-native Aleppo pine (*Pinus halepensis*) consisting of six trees (1 to 2 feet in diameter) was also located directly southeast of the site. No native habitats, wetlands, or riparian habitats were found within the project site. The concrete Los Cerritos Channel that runs along the northern site boundary had no hydrologic connection to the upland areas within the Skylinks Golf Course.

Grassland and ornamental vegetation covered a majority of the project site in the center, north, south, and west portions of the site. This vegetation type was a mix of non-native grasses (*Bromus* sp., *Avena* sp., *Hordeum* sp., and *Cynodon* sp.) and ornamental non-native trees, including Chilean pepper trees (*Schinus polygama*), Brazilian pepper trees (*Schinus terebinthifolia*), fern pines (*Afrocarpus gracilior*), carrotwood (*Cupaniopsis anacardioides*), jacaranda (*Jacaranda mimosifolia*), Peruvian pepper trees (*Schinus molle*), and eucalyptus (*Eucalyptus* sp.).

Chinese elm (*Ulmus parvifolia*) and ornamental trees overlap with the eastern portion of the project site in a small area. This vegetation was comprised of a stand of primarily non-native Chinese elm trees, several of which are well established mature trees. Other ornamental tree species in this stand include weeping bottlebrush (*Melaleuca viminalis*), Mexican ash (*Fraxinus uhdei*), fan palms (*Washingtonia* sp.), Chinese rain tree (*Koelreuteria elegans*), tree-of-heaven (*Ailanthus altissima*), and Chilean and Brazilian pepper trees.

Cultivated grass comprised of Bermuda grass (*Cynodon dactylon*) also overlaps with the eastern portion of the project site in a small area. This area is an expanse of cultivated and irrigated grass that is open to the sidewalk. The area is also fenced-off from the Skylinks Golf Course by a fence extending from the northwest corner of the Fire Station due north to the Los Cerritos Channel.

Bird species habituated to human uses were observed onsite during the biological survey including crows (*Corvus* sp.) and mockingbirds (*Mimus polyglottos*) but no nests were observed. Small spiny lizards (*Sceloporus* sp.) were observed in dirt patches within the grassland and ornamentals area. Several bumble bees were also observed surrounding Brazilian and Peruvian pepper trees at the site. In addition, California ground squirrels (*Otospermophilus beecheyi*) were observed burrowing throughout site. Additional bird species were also observed incidentally during the monarch butterfly and tree survey conducted in 2023.

Discussion:

a. Would the project have a substantial adverse impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

Less than Significant Impact. A query of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) was conducted to determine known occurrences of candidate, sensitive, or special-status species or habitats within the project site and surrounding Long Beach quadrangle (Table 3-4). The species presented in Table 3-4 are those with any potential of occurring within or adjacent to the project site based on regional occurrence (CDFW 2022a). One rare plant, Horn's milk-vetch (*Astragalus hornii* var. *hornii*), has a previous record from 1896 that overlaps with the project site, but this record occurs in a large area with very low accuracy (5-mile radius) and is listed as extirpated (CDFW 2022a). In addition, habitat for this species does not occur on the site. No other species listed in Table 3-4 has been previously observed within the project site (CDFW 2022a). Since the site is comprised of non-native grassland and ornamental trees, species that only inhabit dune, playas, marsh, coastal, wetland, vernal pool, riparian, chaparral, or scrub habitats have not been included in the table, since those habitats are not present within or adjacent to the site.

Table 3-3. Special-Status Species with Potential to Occur

Common Name	Scientific Name	Federal Status / State Status	Other Status
Plants			
Coulter's saltbush	*Atriplex coulteri*	- / -	1B.2
Southern tarplant	*Centromadia parryi* ssp. *australis*	- / -	1B.1
Lyon's pentachaeta	*Pentachaeta lyonii*	FE / SE	1B.1
San Bernardino aster	*Symphyotrichum defoliatum*	- / -	1B.2
Birds			
Yellow warbler*	*Setophaga petechia**	- / -	SSC
Reptiles and Amphibians			
Coast horned lizard	*Phrynosoma blainvillii*	- / -	SSC
Invertebrates			
Crotch bumble bee	*Bombus crotchii*	- / -	Tracked by CDFW
Monarch butterfly	*Danaus plexippus*	FC / -	Tracked by CDFW

Source: CDFW 2022a

Notes: FE = Federally Listed Endangered SE = State Listed Endangered
FC = Federal Candidate SSC = CDFW Species of Special Concern
California Native Plant Society, California Rare Plant Rank
1B = Plants Rare, Threatened, or Endangered in California and elsewhere
0.1 = Seriously threatened in California (over 80% of occurrences threatened)
0.2 = Moderately threatened in California (20-80% occurrences threatened)
*This species was observed as a transient during the monarch and tree survey conducted in 2023 but is unlikely to nest on the project site since riparian nesting habitat is not present.

The biological field survey conducted in September 2021 assessed habitats and potential occurrence of candidate, sensitive, or special-status species (Appendix B). No candidate, sensitive, or special-status species were observed within or adjacent to the project site in 2021. One transient yellow warbler (*Setophaga petechia*), a CDFW Species of Special Concern, was observed incidentally during the monarch and tree survey conducted in 2023 (Appendix B). However, yellow warbler is unlikely to nest on the project site since riparian habitat is not present. Although some of the plants listed in Table 3-4 would not have been flowering at the time of the biological field survey in 2021, no evidence of these species or their habitat was found during the survey. In addition, all records of these species near the project area are historical from 1932 and/or listed as extirpated/possibly extirpated. Overall, special-status plant species have a low potential to occur due to disturbance at the site and use as a golf course that has resulted in a high cover of non-native grasses and ornamental plants.

The coast horned lizard (*Phrynosoma blainvillii*) prefers chaparral, coastal scrub, riparian scrub, riparian woodland, and valley and foothill grassland habitats. While the project site may provide low quality non-native grassland habitat in some areas, the site is heavily trafficked, small, and disconnected from adjacent habitats that may support this species. Therefore, this species has a low potential to be present in the project site. No impact to this species is expected to occur.

Several bumble bees were observed during the biological survey. However, none of the preferred food plants for Crotch bumble bees (*Bombus crotchii*) were observed, including *Phacelia*, *Clarki*, *Antirrhinum*, *Dendromecon*,

Eschscholzia and *Eriogonum* spp. Therefore, Crotch bumble bee has a low potential to occur in the project site. No impact to this species is expected to occur.

Monarch butterfly roosts are typically located in wind-protected tree groves with nectar and water sources nearby. The nearest roosting records of this species are approximately 0.5 mile northeast of the Project site from 1998 at Heartwell Park, and 3 miles southeast of the site from 2016 at El Dorado Nature Center; however, surveys in 2017 and 2021 at both locations did not find any overwintering monarchs (CDFW 2022a). No monarchs or overwintering roosts were found on the project site during the two field surveys in 2023 and limited nectar sources were observed. Additional details on the monarch survey results are provided in Appendix B. No impact to this species is expected to occur.

Overall, due to the lack of natural habitats and use of the project site as a golf course, the potential of the site to support the species listed in Table 3-4 is low and these species are unlikely to occur or reside on the site. No impact to these species are expected to occur.

However, mature trees within the project site may provide habitat for nesting birds. Therefore, removal of vegetation, use of heavy machinery, and/or significant ground disturbance during construction activities has the potential to significantly impact nesting birds if present. While trees that could provide habitat for nesting birds would be removed during construction, the project site would be re-planted with native trees and shrubs after construction. Regulatory Compliance Measure BIO-1 would require any trees removed as part of the project to be replaced with native trees in accordance with the City of Long Beach Municipal Code requirements. The new trees would, in time as they mature, provide habitat for nesting birds. In addition, Regulatory Compliance Measure BIO-2 would require a pre-construction nesting bird survey to be completed by a qualified biologist or ornithologist to determine if active nests of special-status birds or bird species protected by the Migratory Bird Treaty Act (MBTA) and/or the California Fish and Game Code, are present in the project site or within 300 feet of the site. If vegetation removal were to occur during the nesting bird season (January 1 through September 30), a pre-construction survey would be required to ensure that any active nests are identified, and appropriate measures taken to ensure that impacts to nesting species are in compliance with regulations established in the Migratory Bird Treaty Act of 1918 (MBTA), thereby protecting any nesting birds that may occur on the site. Therefore, with implementation of Regulatory Compliance Measures BIO-1 and BIO-2, project impacts to candidate, sensitive, or special-status species would be less than significant.

b. Would the project have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

No Impact. The CNDDB did not identify any CDFW sensitive natural communities in the project area (CDFW 2022a). The project site is within the Skylinks Golf Course and consists of non-native ornamental trees and non-native grasses. No riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or protected by the CDFW or USFWS was observed within or adjacent to the site during the September 2021 biological survey, nor during the early 2023 surveys for trees and monarch butterflies. Therefore, the proposed project would have no impact on riparian habitat or other sensitive natural community.

c. Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant Impact. The concrete Los Cerritos Channel is located along the northern boundary of the project site and a small portion of the Channel would be impacted during construction. The Los Cerritos Channel is unvegetated and wetland hydrology was found in 2023 within the Channel in the form of standing surface water that was about 0.5 inches deep. The Los Cerritos Channel is hydrologically connected to the Los Cerritos Channel and is a Waters of the United States (U.S.) per Section 404 of the CWA since the channels are tributaries to the Alamitos Bay (Traditional Navigable Water). No other potential jurisdictional areas (including

wetlands or riparian habitats) were found in the project site during the field surveys. Since impacts would occur within the Los Cerritos Channel (i.e., discharge of dredged or fill material), a Section 404 permit would be required in accordance with Regulatory Compliance Measure BIO-3. Obtaining a Section 404 permit would ensure that these impacts are less than significant under CEQA. With the implementation of Regulatory Compliance Measure BIO-3, potential impacts from the project to federally protected Section 404 wetlands and waters of the U.S. would be less than significant.

d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?

Less than Significant Impact. Habitats adjacent to the project site include additional portions of the Skylinks Golf Course to the west and south, industrial development to the north, and Clark Avenue and residential development to the east. The concrete Los Cerritos Channel also runs along the northern site boundary. No native habitats are present on or adjacent to the project site. There are no migration corridors within the Skylinks Golf Course or within a greater than one-mile radius from the project site (CDFW 2022b). Therefore, impacts to established wildlife corridors would not occur. While trees that could provide habitat for nesting birds and monarchs (i.e., potential wildlife movement or nursery sites) would be removed during construction, the project site would be re-planted with native trees and shrubs after construction. Regulatory Compliance Measure BIO-1 would require trees removed as part of the project to be replaced with native trees in accordance with the City of Long Beach requirements. In addition, Regulatory Compliance Measure BIO-2 would protect nesting birds, if present through compliance with the MBTA and/or the California Fish and Game Code. Therefore, and with the implementation of Regulatory Compliance Measures BIO-1 and BIO-2, potential impacts from the project to the movement of any native resident or migratory wildlife species, established native resident or migratory wildlife corridors, or the use of native wildlife nursery sites would be less than significant.

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less than Significant Impact. A total of 64 trees were noted at the Project site , including 15 trees measured during the arborist survey conducted at the site and 49 trees measured during the follow on tree survey. All trees observed within the Project site were non-native. Additional details on the trees are provided in Appendix B. All trees on the project site would be removed during construction, but the site would be re-planted with native trees and shrubs. Of the 64 trees at the project, 21 meet the definition of a mature tree that would be subject to the City of Long Beach Municipal Code Chapter 14.28 – Trees and Shrubs, and the City Tree Maintenance Policy. In general, this refers to trees that are at least 5 inches in diameter at breast height (DBH) and meet the definition of a mature tree according to the City of Long Beach. These trees would be required to be replaced at a ratio of 2:1 if removed by project activities. No trees adjacent to the project site would be removed or impacted. As previously described in Regulatory Compliance Measure BIO-1, all tree removal and planting on the project site would be conducted in accordance with City of Long Beach Municipal Code, including using trees from the Approved Street Tree List. A total of 42 trees would be planted as part of the proposed project. Therefore, With adherence to existing regulations, the proposed project would not conflict with any local polices or ordinances protecting biological resources and impacts would be less than significant.

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. The project site is not included in an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. The only Natural Community Conservation Plan (NCCP) or Habitat Conservation Plan (HCP) in Los Angeles County is the City of Rancho Palos Verdes NCCP/HCP (CDFW 2023), which is 10 miles away from the project site. The site is within a developed urban area and the Skylinks Golf Course. Therefore, the proposed project would not conflict with the

provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan and no impact would occur.

Regulatory Compliance Measures:

RCM BIO-1 Tree Removal and Replacement. Tree removal and replacement shall be performed in accordance with the City of Long Beach Municipal Code Chapter 14.28 – Trees and Shrubs, and the City Tree Maintenance Policy, including using the trees from the Approved Street Tree List. All trees removed that meet criteria for replacement need to be replaced at a 2:1 ratio. Trees that need to be removed and replaced shall be approved by the City of Long Beach.

RCM BIO-2 Compliance with Migratory Bird Treaty Act (MBTA). Tree and vegetation removal shall be restricted to outside the active nesting season (January 1 through September 30). If construction is proposed between January 1 and September 30, a qualified biologist or ornithologist familiar with local avian species and the requirements of the MBTA and the California Fish and Game Code shall conduct a pre-construction nesting bird survey to determine if active nests of special-status birds or bird species protected by the (MBTA) and/or the California Fish and Game Code, are present in the project site or within 300 feet of the site. The survey shall be conducted within 3 days prior to initiation of project activities that would occur during the nesting bird season (January 1 to September 30). The results of the survey shall be recorded in a memorandum and submitted to the City of Long Beach (City) Director of Community Development, or designee, within 48 hours. If the survey is positive, and the nesting species are subject to the MBTA or the California Fish and Game Code, the memorandum shall be submitted to the California Department of Fish and Wildlife (CDFW) to determine appropriate action. If an active nest is found, a qualified biologist or ornithologist shall be retained to monitor, and a no-activity buffer shall be established by the biologist or ornithologist based on the bird species and construction activity. Construction within the no-work buffer shall be postponed or halted, at the discretion of the biologist or ornithologist, until the nest is vacated, juveniles have fledged, and adults and young are no longer reliant on the nest for survival.

RCM BIO-3 Permits for Jurisdictional Resources. As the project proponent, the City of Long Beach will obtain the following permits related to jurisdictional resources that would be directly or indirectly impacted by the proposed project:

- U.S. Army Corps of Engineers (USACE) Clean Water Act (CWA) Section 404 Permit
- RWQCB CWA Section 401 Water Quality Standards Certification
- California Department of Fish and Game (CDFW), Lake and Streambed Alteration Agreement under Section 1602 of the California Fish and Game Code

The permits shall be obtained prior to beginning construction and all permit measures and conditions shall be followed.

Mitigation Measures:

No mitigation measures are required.

3.4.5 CULTURAL RESOURCES

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?			X	
b.	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?		X		
c.	Disturb any human remains, including those interred outside of dedicated cemeteries?		X		

Existing Conditions:

Research Overview

A desktop study of and field surveys for cultural resources were conducted for the project site. The desktop study included a records search via the South-Central Coastal Information Center (SCCIC), review of available historic maps and aerial imagery and archival sources, a Native American Heritage Commission (NAHC) sacred land file search, and literature review of existing information for the project site (Appendix C).

In addition, the study included a review to ensure compliance with:

- City of Long Beach General Plan, Historic Preservation Element (2010)
- CEQA (California Code, Public Resources Code, Section 21084.1)
- California Code of Regulations (CCR), Title 14, Chapter 3, § 15064.5 Determining the Significance of Impacts to Archaeological and Historical Resources
- California Health and Safety Code § 7050.5 (for addressing human remains).

In addition, a Phase I archaeological field survey of the site was conducted on March 27, 2023, and a historic evaluation of the Los Cerritos Channel (Wardlow Channel) was conducted on April 25, 2023 (Appendix C).

Research and Survey Results

The project site is located in the Peninsular Ranges Geomorphic Province, within the Los Angeles Basin. During the Pleistocene epoch (the last two million years), the region was warped gently upward until the present shoreline and topography (Leighton 2016). Deposits within the project site consist of Holocene age young alluvium (Saucedo et al. 2016). Intact Holocene (10,500 years before present [BP] to present) age deposits are considered to have the potential to contain archaeological material. Soils across the Project site consist of Urban land – Biscailuz-Hueneme composed of loam to loamy fine sand, fine sandy loam, to silt loam at a depth of 79 inches.

Prior to water diversions in the nineteenth century for agricultural use and the introduction of nonnative species, Los Angeles County had a variety of vegetation zones and biological diversity that was supported by climatic and hydrological conditions conducive to abundant resource availability and subsistence procurement by pre-contact populations and historic populations. The San Gabriel River is within 1.5 miles east of the project site. The Pacific Ocean and coastline are approximately 5.5 miles to the south. Prior to historic and modern alterations to the landscape, the region was characterized by ecological communities such as coastal, marshlands, riverine, and grassland with upland areas. Wildlife in the region included deer, rabbits, foxes, small rodents, various birds,

reptiles, and insects and coastal fauna. Based on historic aerial imagery, the project site appears as an agricultural field in 1952. Between 1963 and 1972 the project site appears as a golf course with some introduced vegetation (trees). This suggests the project site has incurred some level of surface and subsurface disturbance (at an unknown depth).

A record search of the cultural resources site and project file collection at the SCCIC, California State University, Fullerton, of the California Historical Resources Information System, was conducted on March 1, 2022 (Record Search File No.: 23500.9552) for the project site and a 1-mile buffer surrounding the boundary of the project site. The SCCIC record search did not identify any previously recorded historical resources or archaeological resources within the project site. One prehistoric habitation site and a funerary feature, and a historic building were previously recorded within one mile of the project site. The prehistoric site was identified five feet below the ground surface. The NAHC sacred land file search results were positive (see Section 3.4.18, Tribal Cultural Resources for further discussion).

On March 27, 2023, a team of two Tetra Tech archaeologists conducted a Phase I pedestrian survey of the entire project site using 5-meter interval east to west transects. The project site is overgrown with vegetation, with ground surface visibility at approximately 15 percent due to dense non-native grasses and overgrown shrubs. No cultural material was identified as a result of the field survey.

Based on historic aerial imagery, the Long Beach Fire Department Station #19 was constructed between 1949 and 1963. This resource is adjacent to the eastern boundary of the Project site, and is historic in age, but would be avoided by project construction. The Los Cerritos Channel, immediately north of the project site, was constructed in 1960 by the Los Angeles County Flood Control District, and would require a modification as part of the proposed project.

Discussion:

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

Less Than Significant. No historical resources are previously recorded within the project site and the project site has not been previously surveyed for historical resources. Based on historic aerial imagery, the Long Beach Fire Department Station #19 is of historic age as it was constructed between 1949 and 1963. This resource would be avoided by project construction. While the building has not been evaluated for eligibility as a historic resource under CEQA, its historic significance is not relevant as there would be no change to it (direct) or its setting (indirect) that would result in a significant impact to this building.

The Los Cerritos Channel, immediately north of the project site, was constructed in 1960 by the Los Angeles County Flood Control District. Project design indicates a modification to the existing Los Cerritos Channel is proposed to divert runoff. A Tetra Tech Historian/Architectural Historian who exceeds the Secretary of the Interior's Professional Qualifications Standards (PQS) assessed this channel for potential historic significance with respect to the California Register of Historic Resources (CRHR) under Criteria 1 through 4. The Los Cerritos Channel does not meet any of the 4 criteria for listing in the CRHR and therefore is recommended not eligible for listing. The results of this evaluation are provided in Appendix C, with the full evaluation provided on California Department of Parks and Recreation (DPR) 523 forms, which are provided as Attachment 4 to Appendix C.

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less Than Significant with Mitigation Incorporated. The cultural resource record search and field survey did not identify any existing cultural resources within the Project site. The NAHC SLF was positive and the NAHC recommended contacting the Gabrieleno/Tongva San Gabriel Band of Mission Indians for additional information. The City of Long Beach consulted with interested tribes under Assembly Bill (AB) 52. As a result of the City's consultation with the Gabrieleno Band of Mission Indians - Kizh Nation and the Gabrielino Tongva Indians of California (GIOTC), mitigation measures are provided for tribal cultural resources that are included in Section 3.4.18, Tribal Cultural Resources.

Based on the natural setting, NAHC SLF results, SCCIC records search results and preliminary literature review, distribution patterns of previously recorded sites near the project site, and previous disturbance to native soils (i.e., golf course development), the project site is assessed as having an overall moderate sensitivity for significant buried precontact archaeological resources and a low sensitivity for historic archaeological resources within undisturbed native subsurface deposits. Therefore, there is a possibility that buried archaeological deposits may be encountered during Project-related subsurface excavation within undisturbed native soils (e.g., Holocene age deposits), which is proposed at depths up to approximately 25 feet. If construction ground disturbance depths range within native soils, there would be a potential to impact previously unrecorded subsurface archaeological resources. Mitigation Measure CUL-1 would require worker awareness training for all construction personnel working on the project. The training would include an overview of potential cultural resources that could be encountered during ground-disturbing activities to facilitate worker recognition, avoidance, and subsequent notification to a qualified archaeologist for further evaluation and action, as appropriate; and penalties for unauthorized artifact collecting or intentional disturbance of archaeological resources. This would reduce potentially significant impacts by having construction personnel aware of the importance of watching out for and notifying appropriate personnel (such as the on-site cultural resources monitor) regarding otherwise undiscovered cultural resources during ground-disturbing activities. Mitigation Measure CUL-2 provides a process by which the inadvertent discovery of archaeological resources would be handled. This includes halting construction when such resources are discovered, until a qualified professional can assess the significance of the find and address it appropriately. This would reduce potentially significant impacts by providing construction personnel a process for addressing inadvertent discoveries. Mitigation Measure CUL-3 requires that a qualified cultural resource monitor be retained for the project to monitor all subsurface ground disturbing activities due to the archaeological sensitivity and potential for subsurface cultural material at the project site. This would reduce potentially significant impacts by having a monitor onsite with the authority to halt construction in the vicinity of an inadvertent discovery until the appropriate personnel (project archaeologist) can assess the significance of the find. This would ensure that any archaeological resources discovered during construction are looked at quickly and addressed appropriately before construction can recommence. With implementation of Mitigation Measures CUL-1 through CUL-3, impacts to previously unrecorded subsurface cultural resources would be less than significant.

c. Disturb any human remains, including those interred outside of dedicated cemeteries?

Less than Significant Impact with Mitigation Incorporation. Ground disturbance within native soils may potentially contain unanticipated human remains, including those interred outside of formal cemeteries. Implementation of Mitigation Measure CUL-2 would reduce the potential impact to a less than significant level because any identified human remains would be treated as per Public Resource Code, and Health and Safety Guidelines.

Mitigation Measures:

MM CUL-1 Worker Environmental Awareness Training. A qualified archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Standards for professional archaeology, shall be retained for the project to carry out all mitigation measures related to archaeological and historical resources. Prior to the start of any ground-disturbing activities, the City shall ensure that the qualified archaeologist has conducted a cultural

resource Worker Environmental Awareness Training for all construction personnel working on the project. The training shall include an overview of potential cultural resources that could be encountered during ground disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the qualified archaeologist for further evaluation and action, as appropriate; and penalties for unauthorized artifact collecting or intentional disturbance of archaeological resources. A sign-in sheet shall be completed, retained by the project construction contractor for the duration of project construction to demonstrate attendance at the awareness training, and provided to the City upon the completion of project construction. If requested, a local tribal representative(s) shall be invited to participate in the environmental training to discuss or provide text from a tribal cultural perspective regarding the cultural resources within the region.

MM CUL 2 Inadvertent Discovery of Archaeological Resources. The project archaeologist will prepare an Inadvertent Discovery Plan for the project that will outline procedures and identify contacts for an inadvertent discovery. During project-level construction, should subsurface archaeological resources be discovered by project personnel, all activity within 100 feet of a “find” shall stop and the project archaeologist shall be contacted to assess the significance of the find according to CEQA Guidelines Section 15064.5. The archaeologist shall have the authority to halt any project-related construction activities that could impact potentially significant resources. If any find is determined to be significant, the archaeologist shall determine, in consultation with the implementing agencies and any local Native American groups expressing interest, appropriate avoidance measures or other appropriate mitigation. Ground-disturbing activities shall not continue until the discovery has been assessed and the appropriate approvals are obtained. The archaeologist shall be afforded the necessary time to assess the find. With monitoring, construction activities may continue on other areas of the project site during evaluation and treatment of an archaeological resource. Under CEQA Guidelines Section 15126.4(b)(3), preservation in place is the preferred means to avoid impacts to archaeological resources qualifying as historical resources. Methods of avoidance may include, but shall not be limited to, (i) project re-route or re-design, (ii) project cancellation, or (iii) identification of protection measures such as capping or fencing. Consistent with CEQA Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures, such as data recovery or other appropriate measures, in consultation with the implementing agency and any local Native American representatives expressing interest in prehistoric or tribal resources. If an archaeological site does not qualify as an historical resource but meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site shall be treated in accordance with the provisions of Section 21083.2. The qualified archaeologist shall prepare a report documenting evaluation and/or additional treatment of the resource. A copy of the report shall be provided to the County, appropriate Native American representatives (as applicable), and to the SCCIC. Construction can recommence based on direction of the qualified archaeologist with the County’s agreement. Existing regulations require that if human remains and/or funerary items defined by the Health and Safety Code, Section 7050.5, are inadvertently discovered, all work in the vicinity of the find would cease and the Los Angeles County Coroner would be contacted immediately. If the remains are found to be Native American as defined by Health and Safety Code, Section 7050.5, the coroner will contact the NAHC by telephone within 24 hours. The NAHC shall immediately notify the person it believes to be the Most Likely Descendant (MLD) as stipulated by California PRC, Section 5097.98. The MLD(s), with the permission of the landowner and/or authorized representative, shall inspect the site of the discovered remains and recommend treatment regarding the remains and any associated grave goods. The MLD shall complete their inspection and make their recommendations within 48 hours of notification by the NAHC. Any discovery of human remains would be treated in accordance with Section 5097.98 of the Public Resources Code (PRC) and Section 7050.5 of the Health and Safety Code.

MM CUL 3 Cultural Resource Monitor. Due to the archaeological sensitivity and potential for subsurface cultural material, a qualified cultural resource monitor shall be retained for the project to monitor all subsurface ground disturbing activities. The project archaeologist shall prepare a Monitoring Plan that outlines the protocols and schedule for monitoring. In general, the cultural monitor will conduct on-site daily archaeological monitoring of construction subsurface ground disturbance, provide daily documentation of construction activity and any findings

to the project archaeologist, prepare a daily monitoring log, and submit it daily to the project archaeologist via email; and be responsible for implementing the requirements outlined in the Project's monitoring plan. If the monitor discover archaeological resources during construction, the monitor will have authority to halt construction in the vicinity of the find and will notify the project archaeologist. A monitoring report summarizing all monitoring activities, any inadvertent discoveries and resolution, will be prepared at the conclusion of construction activity. The report will be prepared by the project archaeologist and submitted to the City, interested Native American tribes (as appropriate), and the SCCIC.

3.4.6 ENERGY

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b.	Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				X

Existing Conditions:

The project site is located on a portion of the existing Skylinks Golf Course, and is covered primarily by a mixture of non-native ornamental trees and non-native grasses.

Discussion:

a. Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less Than Significant Impact. Construction of the stormwater capture project would create temporary increased demands for electricity and vehicle fuels compared to existing conditions and would result in short-term transportation-related energy use. Natural gas is not generally required to power construction equipment, and therefore is not anticipated to be used during construction phases. Electrical energy needed for construction would be available for use during construction from existing power lines and connections, minimizing or avoiding the use of generators that are less efficient than tying into existing SCE infrastructure. Construction would increase demand for gasoline and diesel fuel needed for construction equipment and construction worker vehicles. This would be a temporary increase that would cease upon completion of project construction. Once the project is complete, the only power needed at the site would be electricity for drainage pumps, as described in Section 2.3.1. This power would come from tying into a SCE connection. Overall, energy and fuel demands associated with the project would be temporary and mostly associated with project construction vehicles and equipment (including graders, loaders, backhoes, dozers, cranes, forklifts, and generators), and would not be any more inefficient, wasteful, or unnecessary than similar development projects. Emissions from the use of these vehicles and equipment is addressed in Section 3.4.3, Air Quality. These impacts would be less than significant.

b. Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact. The City of Long Beach adopted the Sustainable City Action Plan in 2010 (Long Beach 2010). The Plan is designed to guide the City's future operational and policy, and financial decision to create a more sustainable Long Beach. Chapter 5, Urban Nature, discusses the importance of urban nature, which includes trees, parks, wetlands, and beaches. The proposed project would replace ornamental landscaping with native trees and shrubs, and includes constructed vegetated storage ponds through which runoff water would flow to an underground capture system and stored until it is able to infiltrate into the ground. As such, the project is consistent with this plan, and no impacts would occur.

The City of Long Beach adopted the Long Beach Climate Action Plan (CAP) in 2022 (Long Beach 2022c). The CAP provides actions for the City to take to fulfill the vision to create a more sustainable, resilient, and equitable

city by addressing climate change in a way that remedies existing environmental health disparities while also improving health, quality of life, and enhancing economic vitality throughout Long Beach. One of the goals in the CAP is to address drought by having a more sustainable and diverse water supply that reduces dependence on imported water and improves long-term water security. The objectives under this goal are to maximize water efficiency and conservation, and to maximize water that is captured and reused locally. The proposed project is consistent with and fully meets these objectives. As such, the project is consistent with this plan, and no impacts would occur.

Mitigation Measures:

No mitigation measures are required.

3.4.7 GEOLOGY AND SOILS

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	i.) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	
	ii.) Strong seismic ground shaking?			X	
	iii.) Seismic-related ground failure, including liquefaction?			X	
	iv.) Landslides?				X
b.	Result in substantial soil erosion or the loss of topsoil?			X	
c.	Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?			X	
d.	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?			X	
e.	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of waste water?				X
f.	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		

Existing Conditions:

The following is based on the *Geotechnical Exploration Report TDML Compliance Plan Los Cerritos Channel Sub-Basin 4 Drainage Area City of Signal Hill, California* (Leighton 2016) (Appendix D).

The project site is located within the Skylinks Golf Course in the southern portion of the Los Angeles Basin of the Peninsular Ranges geomorphic province of Southern California. The Peninsular Ranges geomorphic province is

characterized by the northwest trend of prominent topographic features. Prominent geologic structures such as the San Andreas, Whittier and Newport-Inglewood faults are also aligned along a northwest trend. Signal Hill, one of the series of low-lying hills oriented in this northwesterly direction, is located approximately 2 miles south-southwest of the site. The synclinal Los Angeles Basin includes up to 4,200 feet of relatively unconsolidated Quaternary Marine and non-marine sediments.

Based on the review the Geologic Map or the Long Beach 30'X60' Quadrangle (Saucido, et al 2016) and the geologic log in the project geotechnical report (Leighton 2016), the project Site is underlain at the ground surface by Pliestocene-Holocene Young Alluvium approximately 11,000 years old primarily consisting of medium dense sandy and silty soils and stiff to very stiff clayey soils. to at least 51 feet below ground surface (bgs).

Groundwater was encountered at depths of 27 to 36 feet below existing grade in Borings LB-1 through LB-12 during 2016 (Leighton 2016), at depths 36.2 feet below existing grade in Borings B-1 through B-12 during 2020, and at 33.9 feet below existing grade in Boring B-3 during 2021 (Tetra Tech 2021). This is consistent with a report by the California Division of Mines and Geology (CDMG) (CDMG 1998) that describes the historically high groundwater level for this area, on the order of 20 to 30 feet bgs. The Leighton Report indicates that depending on the depth of the stormwater capture system, groundwater may be encountered during construction. If groundwater is encountered during excavation, temporary dewatering will be required. To minimize the potential for impacting the surrounding improvements, the report recommends using localized sump pumps within the excavation to remove the groundwater that enters the excavation. It is the responsibility of the contractor to design and install the dewatering system. Discharge of groundwater during excavation should comply with all environmental regulations.

No active faults are mapped or known to cross the site and the site is not located within an Alquist-Priolo Earthquake Fault Zone. However, known regional active faults that could produce significant ground shaking at the site include the Los Alamitos, Newport-Inglewood, Puente Hills Blind Thrust, Compton Blind Thrust, THUMUS-Huntington Beach. Palos Verdes, and Elsinore faults located approximately 0.9 miles, 2.0 miles, 5.6 miles, 6.1 miles, 7.4 miles, 9.4 miles, and 13.5 miles, respectively, from the site. (Tetra Tech 2021);

Discussion:

a. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

I. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less than Significant Impact. The project site is not located within an Alquist-Priolo (AP) Earthquake Fault Zone (California Geological Survey [CGS] 1986, 1999) and no active faults are known to cross the project site. As such, the probability of damage due to surface ground rupture is low. The proposed project has been designed in accordance with adherence to the current California Building Code (CBC) and local ordinances and laws regulating construction to minimize impacts related to fault rupture. In addition, no people would occupy structures at the site. The operation of the proposed project, therefore, is not anticipated to expose people or structures to potential substantial adverse effects, including risk of loss, injury, or death from the rupture of a known earthquake fault. The impact would be less than significant.

II. Strong seismic ground shaking?

Less than Significant Impact. The project is located within the seismically active Southern California region and is likely to experience strong ground shaking from seismic events generated on regionally active faults. The intensity of ground shaking at a given location depends primarily on the earthquake magnitude, distance from the source, and site response characteristics (Leighton 2016). The project has been designed in accordance with the

current CBC and local ordinances and laws regulating construction to minimize impacts related to seismic ground shaking. In addition, no people would occupy structures at the site. The operation of the proposed project, therefore, is not anticipated to expose people or structures to potential substantial adverse effects from strong seismic ground-shaking. The impact would be less than significant.

III. Seismic-related ground failure, including liquefaction?

Less than Significant Impact. Based on the Seismic Hazard Zone Map for the Long Beach Quadrangle (CGS 1986, 1999), the proposed project site is located within an area identified by the State of California as being potentially susceptible to the occurrence of liquefaction. Liquefaction occurs when saturated granular soils lose their inherent shear strength due to increased pore water pressures that may be induced by earthquake activity. The project site is potentially susceptible to liquefaction, due to the shallow depth to groundwater and the granular nature of the underlying deposits. However, the project liquefaction analysis presented in the project geotechnical report indicates that potential onsite coarse-grained soils generally have a low susceptibility for liquefaction pump station site is very low\. Analyses of the sensitivity of the saturated fine-grained soils encountered at a depth range between 40 and 50 feet found that the plasticity Index of these soils was equal or higher than 18 indicating that the soils are potentially susceptible to cyclic softening, However, the sensitivity as estimated from Peck and Mesri is below 4.4 , therefore the soils are not considered likely to undergo cyclic softening, The potential for dry dynamic settlement of granular soils is estimated to be no greater than 0.35 inches over a horizontal distance of 30 feet. Therefore, although some seismic settlement may occur under the design seismic event, structural mitigation is considered to be an adequate means to alleviate the effects of the combined dynamic settlement (Tetra Tech 2021). In addition, construction of the proposed project would comply with applicable measures of the current CBC and local ordinances and laws regulating construction, and the Bureau of Engineering Standard Project Specifications regarding construction in a liquefaction zone and other seismic safety measures. Furthermore, no people would occupy structures at the site. Operation of the proposed project would not expose people or structures to substantial impacts involving seismic-related ground failure from liquefaction; therefore, a less than significant impact would occur.

IV. Landslides?

No Impact. Based on the Seismic Hazard Zone Map for the Long Beach Quadrangle (CGS 1986, 1999) the project site is not located in a landslide area. The proposed project site and the surrounding properties are relatively flat; thus, no impact from landslides is anticipated.

b. Would the project result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. Soil erosion would potentially occur during construction activities, including site grading, structure assembly, and utility extension. Regulatory Compliance Measure GEO-1 requires implementation of standard erosion mitigation measures and best management practices (BMPs), including the use of straw wattles and other erosion control devices as determined by site-specific conditions, and soil wetting, applied as required under applicable regulatory guidelines and standards. These measures and BMPs would be prescribed in a Storm Water Pollution Prevention Plan (SWPPP). This is also discussed in Section 3.4.10, Hydrology and Water Quality. With implementation of Regulatory Compliance Measure GEO-1, this impact would be reduced to a less than significant level because construction-related soil erosion would be controlled and managed onsite. These measures would also reduce potential air quality impacts and sedimentation. Since topsoil at the site would be removed as part of construction and replaced with engineered fill, and the site would be landscaped as described in Section 2.3.2, potential erosion impacts from project operation would be less than significant.

c. Is the project located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse?

Less than Significant Impact. Based on the analysis provided in Response (a.) (iv) above, no impact would be experienced related to on-site or off-site landslides. The project liquefaction analysis presented in the project geotechnical report indicates that the on-site coarse-grained soils generally have a low susceptibility to liquefaction (Tetra Tech 2021). Liquefaction-induced lateral spreading is defined as the finite lateral displacement of gently sloping ground as a result of pore pressure build-up or liquefaction in a shallow underlying deposit during an earthquake. Lateral spreading is unlikely because the project site is generally flat and there is no presence of free faces on or near the project site. The field percolation testing performed for the project site geotechnical report indicated water infiltration rates 0.14, 0.51, and 0.75 inches per hour. The percolation results from the project geotechnical report indicate a design infiltration rate of 0.51 inches/hour. This design infiltration rate is greater than the acceptable minimum of 0.3 inches/hour required by the County of Los Angeles Department of Public Works (LACDPW) Guidelines (LACDPW 2021). The low infiltration rate of 0.14 inches per hour was attributed to the high content of silt within the silty sand. Based on the results from the infiltration testing, infiltration of stormwater at the Site is considered a possibility if the invert of the infiltration facilities is placed at a depth between 21.5 and 24 feet. The recommended design infiltration rate is 0.50 inches/hour (Tetra Tech 2021).Construction of the project would comply with applicable measures of the current CBC and local ordinances and laws regulating construction, and the Bureau of Engineering Standard Project Specifications regarding construction in a liquefaction hazard zone and other seismic safety measures. The operation of the proposed project would not expose people or structures to substantial impacts involving seismic-related ground failure from liquefaction; therefore, a less than significant impact would occur.

d. Is the project located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Less than Significant Impact. Expansiveness refers to the potential to swell and shrink with repeated cycles of wetting and drying and is a common feature of fine-grained clayey soils. This wetting and drying causes damage due to differential settlement within buildings and other improvements. The project geotechnical report indicates that the Expansion Index of 3 selected surficial samples at the Site (within the upper 5 feet) were 15, 22, which indicates that the surficial soils at the site have a low expansion potential and thus expansive soils are not likely to be a hazard to the project's surficial improvements. The Expansion Index of a clay sample taken at a depth of 10 feet was 58 indicating medium expansive potential. Structures planned at a depth between 10 and 20 feet will need to consider the medium expansive potential of these soils. Sands encountered below a depth of 20 feet are not considered expansive (Tetra Tech 2021). The project would be required to comply with the current CBC and local ordinances and laws regulating construction in order to minimize the potential for hazards due to expansive soils. Therefore, a less than significant impact would occur.

e. Would the project have soils that are incapable of supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?

No Impact. No septic tanks or alternative wastewater systems would be constructed as part of the project, and no impacts would occur.

f. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant with Mitigation Incorporated. Based on the review the Geologic Map or the Long Beach 30'X60' Quadrangle (Saucido, et al 2016) and the geologic log in the project area geotechnical report (Leighton 2016), the project site is underlain at the ground surface by Pliestocene-Holocene Young Alluvium approximately 11,000 years old to at least 51 feet bgs. This is consistent with the project-specific geotechnical report which identified native young alluvial deposits encountered on the project site to the maximum depth explored of 51.5 feet (Tetra Tech 2021). Typically, younger Holocene deposits do not contain paleontological resources, although older alluvial deposits, upper Pleistocene and older deposits have the potential to contain paleontological resources. Grading activities and excavation (up to 25 feet bgs) during project construction are unlikely to encounter Pleistocene deposits and paleontological resources are unlikely to be impacted. Mitigation Measure

GEO-1 states that If a fossil is unearthed during grading/earthwork operations, the construction manager will be advised immediately upon discovery of an unearthed fossil and earthwork in the vicinity of the discovery will immediately be halted. A qualified paleontologist shall be retained by the City to evaluate the discovery. With the implementation of Mitigation Measure GEO-1, this impact would be reduced to a less than significant level.

Regulatory Compliance Measure:

RCM GEO-1 Erosion Control Measures. Potential soil erosion that would occur during construction activities, including site grading, structure assembly, and utility extension shall be reduced to a less than significant level with standard erosion mitigation measures, including the use of hay bales and other erosion control devices as determined by site-specific conditions, and soil wetting, applied as required under applicable regulatory guidelines and standards. Prior to issuance of a grading permit, the City of Long Beach's (City) Director of Community Development, or designee, shall confirm that BMPs associated with construction activities have been developed to ensure that the potential for soil erosion and sedimentation is minimized and to reduce pollutant discharges to the City MS4 as a result of construction activities in compliance with Long Beach Municipal Code (LBMC) Section 8.96.120. These BMPs shall be included in the project plan specifications and implemented by the project contractor. In addition, the project would be enrolled in the California Construction General Permit (WQO 2009-0009) through the State Water Resources Control Board, which includes preparation of a SWPPP.

Mitigation Measures:

MM GEO-1 Paleontological Resources Inadvertent Discovery. If a fossil is unearthed during grading/earthwork operations, the construction manager shall be advised immediately upon discovery of an unearthed fossil and earthwork in the vicinity of the discovery shall immediately halt. A qualified paleontologist shall be retained by the City to evaluate the discovery. Earthwork shall be diverted to other areas of the project until the significance of the fossil discovery can be assessed by the qualified paleontologist. If the fossil discovery is deemed significant, the fossil shall be recovered using appropriate recovery techniques based on the type, size, and mode of preservation of the unearthed fossil. Earthwork may resume in the area of the fossil discovery once the fossil has been recovered, and the qualified paleontologist deems the site has been mitigated to the extent necessary. Additional earthwork following the fossil discovery may be monitored for paleontological resources on an as-needed basis, at the discretion of the qualified paleontologist.

3.4.8 GREENHOUSE GAS EMISSIONS

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b.	Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?			X	

Existing Conditions:

Significant changes in global climate patterns have been associated with global warming, an average increase in the temperature of the atmosphere near the Earth's surface, attributed to accumulation of greenhouse gas (GHG) emissions in the atmosphere. GHGs trap heat in the atmosphere, which in turn heats the surface of the earth. Some GHGs occur naturally and are emitted to the atmosphere through natural processes while others are anthropogenic (i.e., created and emitted solely through human activities).

Regulated GHGs consist of carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen triflouride (NF_3) (California Health and Safety Code 38505). GHGs are commonly quantified in the equivalent mass of CO_2, denoted CO_2e, which takes into account the global warming potential of each individual GHG compound.

Carbon dioxide enters the atmosphere through the process of burning fossil fuels (coal, natural gas, and oil), solid waste, trees and wood products, and as a result of certain chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle. Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills. Nitrous oxide is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste. Hydrofluorocarbons, PFCs, SF_6, and NF_3 are synthetic, powerful GHGs that are emitted from a variety of industrial processes. These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes referred to as High Global Warming Potential gases ("High GWP gases"). HFCs and PFCs are sometimes used as substitutes for stratospheric ozone-depleting substances (e.g., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). SF6 is employed in electricity transmission and distribution and semiconductor manufacturing. NF_3 results from semiconductor manufacturing processes (CARB 2022). The most common GHG that results from human activity is CO_2, followed by CH_4 and N_2O.

Discussion:

a. Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than Significant Impact. GHG thresholds are not established for temporary sources, and there are no other federally, statewide, or regionally established significance thresholds to support impact assessments of GHG emissions from land use projects. Instead, the state has pursued other initiatives to meet GHG reduction

goals. Some of those initiatives include the pursuit of low-emission vehicle programs, low carbon fuel standards, heavy-duty vehicle GHG regulations, and renewable energy technologies (e.g., wind and solar power).

On December 5, 2008, pursuant to state law (i.e., CEQA Guidelines 15064.7) the SCAQMD Governing Board adopted a proposal for an interim GHG significance threshold for projects where the SCAQMD is lead agency. The significance threshold is applicable for stationary sources and can be used for determining significant impacts for proposed projects (SCAQMD 2008b). Under the interim significance thresholds projects can emit up to 10,000 metric tons (MT) per year of CO2eq before being deemed as having significant air quality impacts. While this threshold is for stationary source, it is used as a reference to gage the level of impact that construction emissions may have on the environment.

Greenhouse gas emissions would result primarily from material delivery trucks, off-road equipment used to remove and load soil, and as a result of transporting large amounts of soil from the site to a designated landfill during the construction of the proposed project. Construction emissions were, therefore, calculated using CalEEmod. CalEEMod output results are included as Appendix A. The total calculated GHG construction emissions, reference thresholds, and assessment of significance are summarized in Table 3-5. As presented in Table 3-5, GHG emissions from construction activities do not exceed reference significant thresholds, and, therefore, represent a less than significant impact.

Table 3-4. Project GHG Construction Emissions

Calendar Year	GHG (MTCO2eq/yr)
2024	253
2025	5
Total	258
Average Annual Emissions Amortized over 30 years	8.6
Significance Threshold	10,000
Significant?	**No**

Notes: GHG greenhouse gas
MTCO2eq/yr metric tons of carbon dioxide equivalent per year

GHG emissions resulting from the operation of the proposed project are anticipated to be minimal. The project site is an open area and would continue to be used as a recreational facility with implementation of the proposed project. Operation activities would be similar to existing conditions, with the addition of electrical pumps needed for drainage as described in Section 2.3.1 and would not be expected to generate substantial levels of greenhouse gases. Project operational impact is anticipated to be less than significant.

GHG emissions resulting from the operation of the proposed project may be calculated and reassessed once the final maintenance plan is completed at the end of construction phase when more detailed information is available.

b. Would the project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant Impact. GHG emissions would conflict with applicable plans, policy or regulations if the proposed project conflicts with any of the plans, policies or regulations adopted for the purpose of reducing GHG emissions in the City of Long Beach. On August 16, 2022, the City of Long Beach approved its first-ever Long Beach Climate Action Plan (CAP) also known as the Climate Action and Adaptation Plan, which is intended to address the need to reduce GHG emissions, prepare the community for the impacts of climate change, improve

the quality of life, and enhance economic vitality in Long Beach. This plan is also discussed in Section 3.4.6, Energy.

The CAP is designed to help the City achieve its part of the GHG goals addressed in the California Climate Change Scoping Plan (Scoping Plan), which lays out California's strategy for meeting the GHG emission reduction goals of Assembly Bill (AB) 32. AB 32 was signed into law on September 27, 2006, and it requires the ARB to develop and implement regulations and initiatives to reduce GHG emissions to 1990 levels, or lower, by 2020. GHG emission reduction goals are primarily based on strategies aimed at reducing both energy usage and pollution. Since the proposed project would not result in an increase of either population (which requires energy) nor emissions sources and does not require a general plan amendment, it is consistent with and would have a less than significant impact on the implementation of the City of Long Beach General Plan, the CAP, and the State's Climate Change Scoping Plan.

Mitigation Measures:

No mitigation measures are required.

3.4.9 HAZARDS AND HAZARDOUS MATERIALS

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b.	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c.	Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?			X	
d.	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?		X		
e.	For a project located within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?			X	
f.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g.	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?				X

Existing Conditions:

The project site is located at the northeast corner of the existing, approximately 1.6-acre portion of the Skylinks Golf Course located north of East Wardlow Road. Fire Station #19 is adjacent to, and east of, the project site. Rosie the Riveter Park and Long Beach City College Liberal Arts Campus Buildings 01 and 02are adjacent to and north of the project site. Single-family residential housing is located east of Clark Avenue. A Phase I Environmental Site Assessment (ESA) was completed for the project site in April 2023, updated in November 2023 (Appendix E). The assessment included visual observations of the site, inspection of the surrounding

properties from adjacent streets, review of historic ownership and use, review of regulatory listings, and review of internet resources. The following conclusions have been drawn regarding the project site:

- No historical recognized environmental conditions (HRECs), potential environmental concerns (PECs), or business environmental risks (BERs) have been found in connection with the site.
- Two *de minimis* conditions were identified at the site:
    - Two 3-gallon plastic containers marked “waste oil” and a plastic oil changing tray were observed just inside the site boundary on the east side of Fire Station #19.
    - Periodic transient encampments occupy the north central area of the site.
- One REC was identified in connection with the site, associated with previous agricultural use of the site.

In terms of the *de minimis* conditions, the plastic containers and plastic oil changing tray belonged to Fire Station #19 and have been removed from the site. This appears to have resolved this condition. If any waste oil or other soil staining is discovered in this area in the future, soil sample collection and laboratory analysis should be performed to assess the nature and extent of the impacted soil and a removal action should be performed. The transient camp sites should be removed, with any waste found properly disposed of prior to construction.

Review of historical aerial photographs indicates that the site was used for row crop agricultural production from at least 1947 to 1959, and as the Skylinks Golf Course since 1959. Therefore, there is a potential that organochlorine pesticides (OCPs) and arsenic-based pesticides were formerly used at the site. OCPs were used for insect control on farms throughout the United States from the 1940s through 1972, when they were banned by legislation due to their toxic characteristics. They persist in the environment and are commonly found on lands that were farmed from the 1940s through 1972. Some OCPs, such as DDT, are human carcinogens.

In the Phase I ESA, a municipal water well belonging to the City of Long Beach was identified as being located approximately 100 feet north of the site in Rosie the Riveter Park. Based on groundwater sample results and groundwater flow direction, this well was not considered to be a REC in the Phase I ESA. However, given that infiltration of runoff as part of the proposed project may reach local groundwater and the proximity of the well to the site, the City required that a hydrogeological study be completed to provide a hydrogeological evaluation to determine potential impacts to the active extraction well. This is discussed in more detail in Section 3.4.10, Hydrology and Water Quality.

As part of the Phase I ESA, a search was conducted of the California Department of Toxic Substances Control’s (DTSC) EnviroStor database and the State Water Resources Control Board’s (SWRCB) GeoTracker site to identify nearby sites of concern (DTSC 2022, SWRCB 2022) (Appendix E). Neither search showed any current records of current RECs associated with the Site and the Skylinks Golf Course. The GeoTracker database identified a closed hydraulic oil cleanup site at the former site of the Alteon flight training facility located at the current site of the Long Beach City College Community Outreach and Services Facility just north of the Site. The cleanup site at the former Alteon flight training facility was granted regulatory closure in 2008 by the RWQCB, Los Angeles Region. The EnviroStor database identified a voluntary cleanup of groundwater impacted with chromium, hexachrome, and tetrachloroethylene (PCE) at the McDonnell-Douglas Aircraft facility approximately 0.25 mile west of the Site. Due to the distance, it is not likely that the Site is impacted by the constituents released to groundwater at the McDonnell-Douglas Aircraft facility.

Schools located near site include the Long Beach City College Liberal Arts Campus with the Community Outreach and Services Facility located adjacent to the north side of the site across the Los Cerritos Channel and the Burcham Elementary School located approximately 0.66 miles to the east.

The site is located within 2 miles of a public airport or public use airport. The nearest airport to the site is the Long Beach Airport located approximately 0.32 miles to the southwest on the other side of the Skylinks Golf Course across Lakewood Boulevard.

The City of Long Beach Department of Disaster Preparedness is the designated lead agency for emergency response and coordinates the development, maintenance, and implementation of the City of Long Beach Natural

Hazard Mitigation Plan (City of Long Beach 2022b). This Plan serves as a guide for the City's response to emergencies/disasters.

The City of Long Beach Natural Hazard Mitigation Plan does not address fire hazard severity zones (City of Long Beach 2022b). Figure 12.5 of the Los Angeles County General Plan identifies the Fire Hazard Severity Zones (FHSZs) in Los Angeles County, including in the City of Long Beach. The project site is not located within or near a FHSZ (Los Angeles County Department of Regional Planning 2021).

Discussion:

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than Significant Impact. The short-term construction process for the proposed project would involve routine transport, use, or disposal of small amounts of hazardous materials including fuels, lubricating fluids such as paints and adhesives, and solvents. Fuels and solvents for construction would be stored and utilized pursuant to existing regulatory requirements.

The construction contractor would be required to comply with all relevant and applicable federal, state, and local laws and regulations that pertain to the transport, storage, use, and disposal of hazardous materials and waste during construction of the proposed project, therefore, short-term construction impacts would be less than significant.

The proposed project would not use chemicals for treatment, instead would use passive treatment techniques that capture stormwater and then reduce pollutant loads and stormwater volumes through containment and filtration. Operation of the proposed project would generally require minimal to no transport, usage, or disposal of hazardous materials for purposes of operating equipment (e.g., weed-whackers), maintenance activities, and the transport of workers in vehicles. All relevant and applicable federal, state, and local laws and regulations that pertain to the transport, storage, use, and disposal of hazardous materials and waste during operation of the proposed project would be required to be complied with, therefore, operation impacts would be less than significant.

b. Would the project create a significant hazard to the public or the environment through the reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?

Less than Significant Impact. The existing storm sewer systems convey stormwater and dry-weather flows to receiving waters that ultimately flow to the ocean. The proposed project would not increase the potential for accidental releases of hazardous materials into the environment. Because of the project's function as a water conveyance system, it would collect and retain sediment and chemicals from urban runoff, along with any accidental or illicit spills of hazardous materials. The introduction of hazardous materials into the storm sewer system could occur in large events as in a catastrophic spill or could occur in small concentrations as in petroleum hydrocarbons and heavy metals picked up and carried by stormwater in urban runoff from the streets.

The proposed project would slow and retain spills. This retention would help to minimize impacts of large spills compared to existing conditions. The City of Long Beach Fire Department leads emergency response activities within City of Long Beach that would include responses to large hazardous spills. The City of Long Beach Department of Disaster Preparedness has prepared a Natural Hazard Mitigation Plan to coordinate response efforts. The responsibility for responding to and remediating spills would be similar to existing conditions.

In the case of small concentrations of contaminants either from small spills or the accumulation of contaminants from urban runoff, the proposed project would collect and retain pollutants on site. Potential contaminants include typical urban runoff contaminants, such as fuels, oil and grease, pesticides, PCBs, PAHs, metals, and nutrients, as well as sediment that would clog filter media (e.g., soil) or reduce volume capacity. Proposed project operation and maintenance activities would be required to ensure the diversion structure, pre-treatment device,

underground storage vault, and outflow filters are free of debris, so sediment and larger materials do not accumulate. If the water is pumped back into the Los Cerritos Channel, routine inspection and maintenance of the irrigation system would also be conducted. The material rinsed from the cartridges would be disposed of following City of Long Beach requirements. All relevant and applicable federal, state, and local laws and regulations that pertain to the operation of the proposed project would be required to be complied with, including the United States Environmental Protection Agency (USEPA) "hazardous waste" regulations, the Hazardous Materials Transportation Act, the Resource Conservation and Recovery Act, and the California Code of Regulations (CCR, Title 22). The City of Long Beach oversees hazardous materials management through the Certified Unified Program Agency (Unified Program), which is the administering agency for the chemical inventory and business emergency plan regulations for the City. The Unified Program combines both the Long Beach Fire Department (LBFD) and the Health Department into one primary agency responsible for hazardous materials management in the City. The Long Beach Unified Program makes information regarding the appropriate handling, storage, and disposal of all hazardous chemical waste generated in the City publicly available to all residents and workers in the City. Because these resources are available to anyone in the City and the LBFD is responsible for administering the Unified Program, it is reasonable to conclude that LBFD workers and contractors on the site would use such programs to properly dispose of hazardous waste. Therefore, operation impacts would be less than significant.

c. Would the project emit hazardous emissions or handle hazardous materials or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

Less than Significant Impact. The Long Beach City College Campus Community Outreach and Services Facility is located adjacent to the north side of the Site across the Los Cerritos Channel. There is a potential for release of hazardous emissions or handling of hazardous materials and substances during the short-term construction activities for the proposed project. However, because substantial federal, state, and local regulations addressing the transport, use, storage and disposal of hazardous materials are in place, the potential for substantial effects to schools would be less than significant (refer to subfactor b in Section 3.4.9, above). Compliance with applicable hazardous materials regulations would reduce the likelihood of unsafe release of hazardous emissions to less than significant levels.

d. Is the project located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Less Than Significant with Mitigation Incorporated. As discussed above, the project site is not on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. It is possible that a proposed project may be on an unknown hazardous materials site not yet included in the databases. Contaminated soil and/or groundwater could be encountered during excavation posing a health hazard to construction crews, the public, and the environment. In addition, based on the results of the Phase I ESA, there is the potential for OCPs to occur at the site due to previous agricultural use of the site. Mitigation Measure HAZ-1 requires a Phase II ESA to be performed prior to the initiation of any construction requiring ground-disturbing activities to assess potential OCPs in the soil at the site. The Phase II ESA field work sampling program should be planned and performed in accordance with DTSC guideline. The results of Phase II studies, if necessary, will be submitted to the local overseeing agency and any required remediation or further delineation of identified contamination will be completed prior to commencement of construction. Implementation of Mitigation Measure HAZ-1 would reduce the potential impacts to less than significant.

e. For a project located within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

Less Than Significant Impact. The project site is located within approximately 0.32 miles northeast of the Long Beach Airport, which is owned by the City of Long Beach. Long Beach Airport is classified as a small-hub airport

based on its share of U.S. total enplanements. Based on total passengers in calendar year 2017, Long Beach Airport was the ninth largest airport in California and the 66th largest airport in the United States (Unison Consulting 2019). The project does not include construction of a multi-story building which could create a potential safety hazard for flight for flights to and from the airport. A crane may be used to lift in place some project components, but would not conflict with flight operations at the Long Beach Airport because the Federal Aviation Administration (FAA) only regulates structures greater than 200 feet above ground level (AGL) near an airport. In addition to being 0.32 miles northeast of the airport, a crane used for this project would be well below this height limit. In addition, once construction is complete, the project site would revert to a similar passive recreational use for the public as before. There would be no conflicts or safety issues with the airport. Impacts would be less than significant.

f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact. Construction of the proposed project would be confined to the project site and would not obstruct access to the surrounding lots or otherwise hinder emergency evacuation within the surrounding properties. Refer to Section 3.4.17 Transportation item (d) for additional discussion regarding emergency access to the site. There would be partial, temporary lane closures along Clark Avenue during construction, but only for a brief time when equipment is being brought to and from the site. At no time would any of the surrounding streets be completely closed to traffic to accommodate construction equipment or activities. The impact would be less than significant.

g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

No Impact. The project site is located in an urbanized and fully developed area, and it is not located within or near any wildland areas and is not within or near lands classified as very high hazards severity zones. As discussed in Section 3.4.20, Wildfire, the project site is not within or near a State Responsibility Area or Federal Responsibility Area (California Office of the State Fire Marshall 2022a). No lands within the City of Long Beach, including the project site, are designated as a Very High Fire Hazard Severity Zone (California Office of the State Fire Marshall 2022a), and no areas within Long Beach are recommended by the California Department of Forestry and Fire Protection (CAL FIRE) to be included as a Very High Fire Hazard Severity Zone within the Local Responsibility Area (California Office of the State Fire Marshall 2022b).. Therefore, no impact would occur.

Mitigation Measures:

MM HAZ-1 Perform a Phase II Environmental Site Assessment. Prior to the initiation of any construction requiring ground-disturbing activities, a Phase II ESA shall be performed to assess potential OCPs in the soil at the site. The Phase II ESA field work sampling program should be planned and performed in accordance with DTSC guidelines for completing a Preliminary Environmental Assessment (PEA) including the *Preliminary Endangerment Guidance Manual* (DTSC January 1994, Revised October 2015) (PEA Guidance Manual) and the *Interim Guidance for Sampling Agricultural Properties (Third Revision)* (DTSC 2008) (Agricultural Fields Guidance). The results of Phase II studies, if necessary, shall be submitted to the local overseeing agency and any required remediation or further delineation of identified contamination shall be completed prior to commencement of construction.

3.4.10 HYDROLOGY AND WATER QUALITY

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
b.	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
c.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
	i.) result in substantial erosion or siltation on- or off-site;			X	
	ii.) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;			X	
	(iii.) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or			X	
	(iv.) impede or redirect flood flows?			X	
d.	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
e.	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

Existing Conditions:

Per the *Skylinks Golf Course at Wardlow Project Preliminary Design Report* (Craftwater Engineering 2019, Appendix F), the approximately 1.6-acre project site lies at the northeast corner of Skylinks Golf Course within a 1,655-acre drainage area (Figure 10). The project is located with Los Cerritos Channel Watershed, which is a largely built-out, urbanized watershed of approximately 17,711 acres in the Los Cerritos and Alamitos Bay Watershed Management Area (Tetra Tech 2021) .

Stormwater runoff from the drainage area is conveyed through the storm drain network to Los Cerritos Channel (BI 0009 Unit 3, Line C), a 19-foot-wide by 9.5-foot-deep rectangular concrete channel, which runs east-west along the length of the project to the north. The channel is managed by the Los Angeles County Flood Control

District (LACFCD). The project site drains to the west and south. The project's drainage area lies within the Los Cerritos Channel Watershed, which is an urbanized watershed of approximately 17,711 acres (Craftwater Engineering 2019, Tetra Tech 2021, Appendix F). The site is undeveloped and covered primarily by non-native ornamental trees and grasses.

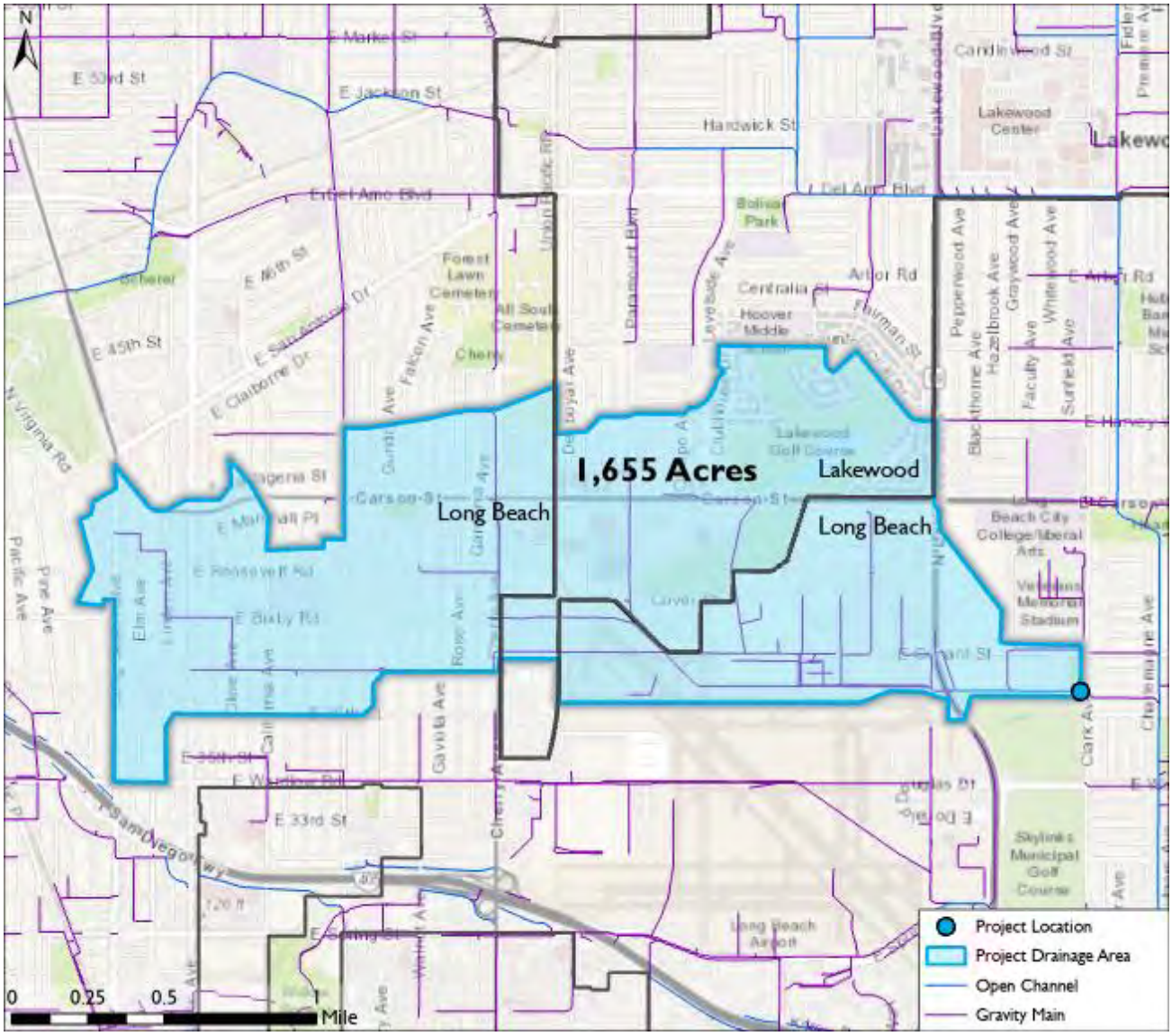

Figure 10. Skylinks Project Drainage Area

Discussion:

a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less Than Significant Impact.

Overview

The proposed project would provide permanent infrastructure restoration of the water conveyance system. The project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality because it would be implemented in accordance with required pre-construction and post-construction permits, as described in Regulatory Compliance Measures HYD-1 and HYD-2. Regulatory Compliance Measure HYD-1 identifies pre-construction permits that must be enrolled in and complied with, including the Construction General Permit (WQO 2009-0009), LACFCD Major Modification Permit, and USACE Clean Water Act Section 404 Permit (if applicable). Regulatory Compliance Measure HYD-2 identifies post-construction permits that must be enrolled in and complied with including the City of Long Beach entering into a Use and Maintenance Agreement with LACFCD to accept responsibility for maintenance of the City's proposed diversion structure within the LACFCD system, a Maintenance Plan and a Monitoring Plan, and a LACFCD Discharge Permit for the discharge of treated water into Los Cerritos Channel. The goal of the project is to improve water quality by treating and diverting runoff from the greater watershed. The preliminary identified constituents of concern are metals (copper, lead, and zinc), bacteria, nutrients, and trash (Craftwater Engineering 2019, Appendix F), as the channel is listed as “impaired” for these (and other pollutants) on the *303(d) List of Impaired Water Bodies* (State Water Resources Control Board 2018).

The project’s runoff treatment and storage system would divert 30 cubic feet per second (cfs) from the adjacent Los Cerritos Channel to a pretreatment system (hydrodynamic separator), and then discharge to a vegetated storage pond and underlying subsurface storage. Settling in the subsurface storage structure would also remove/reduce the targeted pollutants. A post-treatment system would further filter runoff that would be discharged back into Los Cerritos Channel. Water pumped from the underground structure to the post-treatment filtration system would treat an additional 88% of targeted pollutants prior to discharge into the flood control channel (Craftwater Engineering 2019).

A portion of the diverted runoff would infiltrate in the project’s bioswales and be used for evapotranspiration by on-site vegetation. Flows that exceed the inflow design capacity of 30 cfs would bypass the system but would be treated by a membrane filter. Targeted pollutants include metals (copper, lead, and zinc), bacteria, nutrients, and trash The system is designed to divert and treat runoff that would flow to the impaired Los Cerritos Channel and, thus, improve water quality long-term in the channel and also provide flood mitigation.

Construction

Surface Water Quality

Soil would be exposed during grading, excavation, and stockpiling activities. Additionally, construction of pump structures, underground storage facilities, and other structures could release pollutants in storm water runoff. However, construction of the project would disturb more than one acre of land; therefore, the project would be enrolled in the Construction General Permit (WQO 2009-0009). The permit’s requirements are intended to prevent discharges of pollutants related to construction activities by developing and implementing a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP is to prescribe BMPs specific to site construction activities, describe maintenance of the BMPs, and detail a monitoring and reporting plan. The permit also requires the project to manage runoff from new impervious areas; however, no new impervious area would be installed as part of this project.

Impacts to surface water quality during construction would be less than significant with implementation of RCM HYD-1 and RCM HYD-2.

Groundwater Quality

The 2016 geotechnical investigation near the site encountered groundwater at depths of 27 to 36 feet below existing grade (Leighton Consulting, Inc. 2016) and the 2021 geotechnical investigation of the project site itself (Tetra Tech 2021) indicated that expected groundwater depth at the project site to be at about 34 feet. With an excavation to 25 feet below existing grade being required for the project, groundwater may not be encountered during construction but could be encountered depending on site conditions at the time of construction, in which case, temporary dewatering would be required. To minimize the potential for impacting the surrounding improvements, localized sump pumps would be used within the excavation to remove the groundwater that enters the excavation. It is the responsibility of the contractor to design and install the dewatering system. If dewatering water is discharged to Los Cerritos Channel, the project would be required to enroll in *Order No. R4-2018-0125, General NPDES Permit No. CAG994004, Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties*. The California Construction General Permit (WQO 2009-0009) allows discharges of uncontaminated groundwater dewatering; however, the Los Angeles RWQCB General NPDES Permit supersedes this allowance. The Los Angeles RWQCB General NPDES Permit requires submittal of a Report of Waste discharge that describes (but not limited to) the discharge (flow volume, route, etc.), provides sampling results and comparison to Permit Attachment E Effluent Limitations, describes BMPs and treatment methodology, and verification that it is infeasible to discharge to a sanitary sewer system or to re-use or infiltrate the dewatered groundwater. The Los Angeles RWQCB may prescribe a Dewatering Monitoring and Reporting Program as part of the permit enrollment.

Since construction would occur within the Los Cerritos Channel (i.e., discharge of dredged or fill material), a Section 404 CWA permit would be required in accordance with existing regulatory requirements as described in Regulatory Compliance Measure HYD-1 (and RCM BIO-3). The Section 404 permit is intended to reduce or eliminate impacts to the channel; therefore, the impacts would be less than significant under CEQA.

A Los Angeles County Flood Control District Major Modification Permit would likely be required, since a water diversion structure is considered a drainage facility modification. The City of Long Beach would be required to coordinate with the County regarding permitting requirements.

Infiltration of runoff during construction is not expected to impact groundwater quality. During the 2016 geotechnical investigation of a nearby area, groundwater was encountered at depths of 27 to 36 feet below existing grade. These findings are concurrent with the California Geologic Survey's recorded historically high groundwater level for this area (1998, Plate 1.2), which is on the order of 20 to 30 feet below the ground surface. Fluctuations of the groundwater level, localized zones of perched water, and an increase in soil moisture should be anticipated during and following the rainy seasons or period of locally intense rainfall or storm water runoff. Irrigation of landscape areas and the adjacent golf course and introduction of surface water could also cause localized fluctuations of groundwater levels (Leighton Consulting, Inc. 2016, Appendix D).

Impacts to groundwater quality during construction would be less than significant.

Operation and Maintenance

Surface Water Quality

Operation and maintenance of the facility would be the responsibility of the City of Long Beach, LACFCD, and the Skylinks Golf Course. The City of Long Beach would enter into a Use and Maintenance Agreement with LACFCD to accept responsibility for maintenance of the City's proposed diversion structure within the LACFCD system. A draft maintenance plan would be developed as part of the 100% final project design and would include details on equipment needed, frequency of maintenance, and standard practices and procedures to be utilized. The final maintenance plan would be completed at the end of construction when more detailed information is available. In addition, prior to any work within the LACFCD right-of-way, a Water Diversion Plan would be prepared and submitted to LACFCD for review and approval.

A full monitoring plan would be developed as a part of the 100% final design documentation. The preliminary identified constituents of concern are metals (copper, lead, and zinc), bacteria, nutrients, and trash and would be monitored. Monitoring locations would be established to allow for monitoring the system performance and to assess the effectiveness of the system over time and would include monitoring these constituents. Additionally, the project would likely be required to enroll in a LACFCD Discharge Permit for the discharge of treated water into Los Cerritos Channel. These controls are expected to prevent violating any water quality standards or waste discharge requirements, or otherwise substantially degrade surface water quality, over time.

Once operational, the proposed project would result in the beneficial impact of improved surface water quality in the area.

Groundwater Quality

As discussed in Section 3.4.9, Hazards and Hazardous Materials, the Phase I ESA (Appendix E) identified an active City of Long Beach groundwater supply well, known as Citizens 9 Well, located approximately 100 feet northeast of the project site in Rosie the Riveter Park and approximately 200 feet northeast of the portion of the project site where the infiltration system would be installed. The *Los Angeles County Guidelines for Geotechnical Investigation and Reporting for Low-Impact Development Stormwater Infiltration* (Los Angeles County Public Works 2021) does not recommend stormwater infiltration within 100 feet of any groundwater production wells used for drinking water. Even though this well is over 100 feet from where the project's infiltration system is proposed, as a precaution, the City requested an evaluation of the potential impact to this and any other wells in the area.

Thus, a hydrogeological evaluation was conducted to determine potential impacts to Citizens 9 Well (Appendix H). The hydrogeological evaluation also identified a second, inactive groundwater well located approximately 200 feet east of the project site, known as the Annex 26 Well. The hydrogeological evaluation included groundwater flow and mass transport model simulations on the fate of infiltrated surface water and the active Citizens 9 Well, as it is the closest well and has a greater risk of impact because its well casing perforation is shallower (300 feet versus 364 feet) than Annex Well 26. If the results show no impact to Citizens 9 Well, it is unlikely that Annex Well 26 and other wells would require further analysis because they are at greater distance from the project area. The results of the hydrogeological evaluation indicated that infiltration of surface water from the project site would not cause any significant water quality impact to Citizens 9 Well based on the following:

- The proposed stormwater capture facility includes several layers of filtration and treatment of surface water to remove or reduce the contaminant levels prior to infiltration.
- Groundwater from shallow aquifers such as Artesia and Gage aquifers are typically not used for potable purposes locally, e.g., Citizens 9 Well is perforated 300 feet and deeper, not perforated in the shallow Artesia or Gage aquifers.
- Presence of thick (hundreds of feet) fine-grained soil will impede vertical groundwater flow to the water supply well production zone located greater than 300 feet depth, as described in borehole logs of water wells in the vicinity.
- Groundwater data and groundwater model simulations indicate low downward vertical gradient and infiltration rate. The infiltrated surface water from the Project will make up only a very small portion of the water produced by Citizens 9 Well, and therefore, the surface water contaminants are not likely to significantly impact Citizens 9 Well water quality.

Based on the hydrogeologic study results, no additional monitoring or mitigation measures would be necessary, as there would be several layers of filtration and water treatment at the proposed stormwater capture facility prior to water infiltration, provided that the existing routine compliance water quality monitoring at Citizens 9 Well and nearby wells would still occur and that inactive Annex 26 Well is properly decommissioned to minimize potential route of groundwater contamination (Appendix H).

Infiltration of runoff during project operation and maintenance is not expected to adversely impact groundwater quality. The stormwater capture system, by design, would treat and improve surface water quality in the area and would remove a portion of pollutants of concern before the water is either allowed to infiltrate to groundwater or discharge back into Los Cerritos Channel. Impacts to groundwater would be less than significant.

Implementation of Mitigation Measures HYD-1 and HYD-2, which include regulatory agency and permitting requirements, would ensure that impacts would be less than significant.

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less Than Significant Impact. The project is not anticipated to substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. This project is connected to a managed water supply aquifer (Central Basin of the Coastal Plain, Los Angeles aquifer), but is expected to augment groundwater supplies (initial estimates are up to 454 acre-feet on an average annual basis, if infiltration rates are favorable). The geotechnical study infiltration rates at a nearby location were measured at 22.1 inches per hour (Leighton Consulting, Inc. 2016). Infiltration rates of the underground system are as yet unknown, but could augment groundwater supplies by up to 454 acre-feet on an average annual basis if infiltration rates are favorable, which would be beneficial to groundwater recharge (Watson 2020). This would be a less than significant impact.

c. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces in a manner that would:

(i) result in substantial erosion or siltation on- or offsite;

(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

(iv) impede or redirect flood flows?

Less Than Significant Impact. The project would alter the existing drainage pattern of the site or area; however, the alterations would be a benefit to the watershed. Water from Los Cerritos Channel would be diverted to an inlet by gravity to a drop inlet structure at a maximum rate of 30 cfs and total inflow of 21.1 acre-feet. The proposed discharge pump would flow through a post-treatment unit at a rate of 7.8 cfs. As a result, this system will incorporate an infiltration, treat, and release component to increase the 24-hour treatment volume to 37.0 acre-feet.

i. The project is not expected to cause erosion or siltation on- or off-site. The project would require excavation for the underground structures and grading of the existing undeveloped open space (Craftwater Engineering 2021), but as stated in Section 3.4.10.a, implementation of the requirements of the Construction General Permit (WQO 2009-0009) would prevent substantial erosion and siltation on- and off-site during construction. As part of the project's final stabilization phase, groundcover would be installed that would prevent erosion long-term term, such as installing vegetation in vegetated storage ponds, upland areas, and bioswales; and decomposed granite would be installed for trails, as shown on Figure 7, Layout for Landscape Plan.

ii. The project would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. The diversion flowrate and pre-treatment rate for this facility is designed for 30 cfs. The proposed discharge pump would flow through a post-treatment unit at a rate of 7.8 cfs. As

a result, this system would incorporate an infiltration, treat, and release component to increase the 24-hour treatment volume to 37.0 acre-feet.

A portion of the diverted runoff would infiltrate in the project's bioswales and would be used by on-site vegetation. A post-treatment system would further filter runoff that would be discharged back into Los Cerritos Channel. Flows that exceed the inlet and hydrodynamic separator's design capacity of 30 cfs would bypass the system but would be treated by a membrane filter. The pre-treatment hydrodynamic separator would remove up to 80% of the pollutants. Settling in the subsurface storage structure would also remove/reduce the pollutants. A pump station and post-treatment cartridge filtration unit would treat an additional 88% of the pollutants prior to discharge into the flood control channel (Craftwater Engineering 2021).

Project inlet flows are based on a water budget calculation over 24 hours for the unit, considering hourly flows to the diversion point on an hourly basis and subject to storage. The bioswales would be sized to convey all flows from the surface drainage and are designed promote infiltration into the groundwater (Craftwater Engineering 2021).

iii. The project is not expected to create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. The project is specifically designed to augment the storage capacity of the storm water drainage system and reduce pollutants in runoff. The project is a major component for implementing the Los Cerritos Channel Watershed Management Plan, which is a long-term plan to achieve pollutant reductions in the waterbodies of the Watershed. The drainage area encompasses portions of the City of Long Beach and the City of Lakewood and provides both with substantial water quality benefits. The benefits would be two-fold: (1) a reduction in targeted pollutants in the Los Cerritos Channel, by treatment via hydrodynamic separator, filtration in vegetated storage ponds, infiltration into a retention structure where settling occurs, and post-treatment filtration and (2) a reduction of flow volume in the channel due to evaporation by plants in landscaping and vegetated storage ponds and infiltration from the detention structure into the underlying groundwater basin (infiltration footprint area is 0.67 acres).

iv. It is anticipated that the project would not impede or redirect flows; the detention capabilities would contribute towards enhanced flood retention capabilities of the upstream storm drain system. The drainage area has limited Los Angeles County Flood Control drainage infrastructure and the infrastructure that does exist is of insufficient capacity, resulting in system-wide backups during moderate rain events. The project provides storage and infiltration of a portion of the excess volume providing a small relief during rain events (Craftwater Engineering 2021). Infiltration rates are as yet unknown but could augment groundwater supplies by up to 454 ac-ft on an average annual basis if infiltration rates are favorable (Watson 2020).

As previously discussed, Regulatory Compliance Measure HYD-1 identifies pre-construction permits that must be enrolled in and complied with, and Regulatory Compliance Measure HYD-2 identifies post-construction permits that must be enrolled in and complied with. Impacts to drainage patterns on the site and in the area would be less than significant with implementation of Regulatory Compliance Measures HYD-1 and HYD-2.

d. Would the project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Less Than Significant Impact. The project site is over four miles from the nearest shoreline. It is not located in a tsunami zone, according to the California Department of Conservation, Los Angeles County Tsunami Hazard Area map (California Department of Conservation 2024), No impact from a tsunami would occur.

The project site is in an area of reduced flood risk due to a levee (FEMA 2022). Therefore, the risk of release of pollutants due to project site inundation from a flood is low. This is a less than significant impact.

Seismic seiches are standing waves set up on rivers, reservoirs, ponds, and lakes when seismic waves from an earthquake pass through the area. They are in direct contrast to tsunamis which are giant sea waves created by the sudden uplift of the sea floor. While the Los Cerritos Channel is just north of the project site, there are no enclosed water bodies in the project vicinity that could result in inundation due to a seiche. No impact would occur.

Overall, less than significant impacts would occur to the project as a result of a flood, tsunami, or seiche..

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less Than Significant Impact. The project is not expected to conflict with or obstruct implementation of the Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (RWQCB, Los Angeles Region 2014). As discussed in Section 2.2, the project is a major component for implementing the Los Cerritos Channel Watershed Management Plan by achieving pollutant load reductions for the watershed. The project is specifically designed to improve water quality in the Los Cerritos Channel and reduce flows by treating and storing/infiltrating runoff, thereby having the same impact downstream and benefitting the watershed in the project area. Additionally, a portion of the runoff diverted to the system is anticipated to infiltrate soils beneath the project site and to recharge the groundwater aquifer. Due to the use of a pretreatment system prior to infiltration to groundwater, negative impacts to the aquifer are unlikely. This is a less than significant impact.

Regulatory Compliance Measures:

The project proponent, the City of Long Beach, would need to obtain the permits identified in Regulatory Compliance Measures HYD-1 and HYD-2 prior to project construction.

RCM HYD-1. Obtain Pre-Construction Permits. The regulatory compliance measures during construction are to enroll and comply with the:

- Construction General Permit (WQO 2009-0009)
- Los Angeles County Flood Control District Major Modification Permit
- Department United States Army Corps of Engineers Clean Water Act Section 404 Permit (if applicable)

RCM HYD-2. Obtain Post-Construction Permits. The mitigation measures post-construction and long term are to enroll and comply with the:

- City of Long Beach would enter into a Use and Maintenance Agreement with the LACFCD to accept responsibility for maintenance of the City's proposed diversion structure within the LACFCD system
- A Maintenance Plan and a Monitoring Plan
- Los Angeles County Flood Control District Discharge Permit for the discharge of treated water into Los Cerritos Channel

Mitigation Measures:

- No mitigation measures are required.

3.4.11 LAND USE AND PLANNING

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Physically divide an established community?				X
b.	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				X

Existing Conditions:

The project site, on the west side of Clark Avenue, is located on a portion of an existing recreational facility, the Skylinks Golf Course, which is within a developed, urban environment.

The project site has a General Plan PlaceType of Open Space (OS). The OS PlaceType is for open space recreational uses, such as parks, beaches, golf courses, marinas, flood control channels and basins, rivers, utility rights-of-way, oil islands, inland bodies of water, nature preserves, marine habitats, estuaries, wetlands, and lagoons (City of Long Beach 2002, 2019b). Amenities at the Skylinks Golf Course, as noted in the Open Space and Recreation Element of the General Plan, include green space and a gymnasium (in addition to the golf course). The project site is in the Park (P) Zoning District. Section 21.35.010 of the Long Beach Municipal Code states:

> The Park (P) district is established to set aside and preserve publicly owned natural and open areas for active and passive public use for recreational, cultural and community service activities. Parks are established to promote the mental and physical health of the community and provide physical and psychological relief from the intense urban development of the City. Such areas are characterized by landscaped open space, beaches or inland bodies of water. Table 35-2 indicates the name, type and zoning classification of the various parks located within the City of Long Beach.

Table 35-2, within Chapter 21.35 of the Municipal Code, also dedicates the Skylinks Golf Course for use as a golf course.

Discussion:

a. Would the project physically divide an established community?

No Impact. The proposed project would not physically divide an established community. The project site is currently used as a public recreational facility and would continue to be used as such with implementation of the proposed project. Implementation of the proposed project would result in primarily subsurface improvements to the stormwater system. At the completion of construction, additional project components would include interior trails, a relocated volleyball court, and bioswales, as described in Section 2.3.1, *Project Components*, of this IS/MND. Therefore, no project impact would result.

b. Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. The project site has a General Plan PlaceType of Open Space (OS), and is in the Park (P) Zoning District. The project site is in a generally undeveloped portion of the Skylinks Golf Course that is located outside of the fairway. Implementation of the proposed project would keep the surface of the project site as a public recreational facility with the addition of trails and benches as described in Section 2.3.1, *Project Components*.

The OS PlaceType includes parks, beaches, golf courses, marinas, flood control channels and basins, rivers, utility rights-of-way, oil islands, inland bodies of water, nature preserves, marine habitats, estuaries, wetlands, lagoons and similar open space resources. The existing golf course would continue to operate as a golf course and vegetated area upon completion of the project. The project area would include added site improvements related to new trees and stormwater treatment improvements. As such, the project directly corresponds to Land Use Element (LUE) polices related to maximizing benefits of existing open spaces, while also using best management practices and cutting-edge technologies to become a regional trendsetter in environmental stewardship. This includes transforming underutilized open spaces to have a dual-purpose stormwater feature for the improvement of the regional watershed. The applicable policies include:

- LU Policy 18-4: Increase the number of trees, first prioritizing areas identified as tree deficient, to provide the maximum benefits of improved air quality, increased carbon dioxide sequestration, reduced stormwater runoff and mitigated urban heat island effect.
- LU Policy 20-5: Prevent stormwater runoff and pollutants from entering natural water bodies, wildlife habitats, wetlands, rivers and the Pacific Ocean.
- LU Policy 20-11: Coordinate with other agencies to reduce stormwater runoff by capturing runoff for groundwater recharge, irrigation and recycling purposes.

The completed project would be consistent with its current General Plan PlaceType and Zoning designation. As part of the project, existing trees would also be removed and replaced with native trees and shrubs, as discussed in Section 3.4.1, Biological Resources, item (e). With implementation of Regulatory Compliance Measure BIO-1, impacts would be less than significant. Therefore, the proposed project would not conflict with existing land use plans, policies, regulations, and zoning, and a less than significant impact would result.

Regulatory Compliance Measure:

No land use mitigation measures are required. Regulatory Compliance Measure BIO-1 would apply as described for item (b).

Mitigation Measures:

No mitigation measures are required.

3.4.12 MINERAL RESOURCES

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b.	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?				X

Existing Conditions:

The California Department of Conservation protects mineral resources to ensure adequate supplies for future production. The California Surface Mining and Reclamation Act of 1975 (SMARA) was adopted to encourage the production and conservation of mineral resources, prevent or minimize adverse effects to the environment, and protect public health and safety. Mineral resources are commercially-viable aggregate or mineral deposits, such as sand, gravel, and other construction aggregate. The Los Angeles metropolitan area produces and consumes more construction aggregate than any other metropolitan area in the country. Mineral resources also includes areas that are appropriate for the drilling for the production of oil and natural gas.

As discussed in Section 3.4.9, Hazards and Hazardous Materials, the project site was previously used for agriculture and is currently part of a golf course. As such, it has not been used for mineral extraction. In addition, a search of the California Geologic Energy Management Division's (CalGEM) online mapping application Well Finder tool indicates that the project site has not been used for production of oil and natural gas (California Department of Conservation 2023).

Discussion:

a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. Based on the lack of historic and/or active mineral extraction activities on or surrounding the project site, the project would not result in the loss of availability of a mineral resource. Therefore, no project impacts to mineral resources would occur.

b. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

No Impact. The project site is not on a City of Long Beach General Plan Map showing a locally important mineral resource recovery site, and is not in a Long Beach Oil Operating Area (City of Long Beach Gas & Oil Department 2017). Therefore, no project impacts to a mineral resource recovery site would occur.

Mitigation Measures:

No mitigation measures are required.

3.4.13 NOISE

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:					
a.	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
b.	Generation of excessive groundborne vibration or groundborne noise levels?			X	
c.	For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			X	

Existing Conditions:

The existing ambient sound environment consists of noise associated with Long Beach Airport, vehicle noise from local street traffic on East Conant Street and Clark Avenue, and noise associated with Long Beach Fire Station #19. The City of Long Beach General Plan designated adjacent land uses include Open Space (Park), Industrial, and Institutional located to the north, Long Beach Fire Station #19 and Low Density Residential to the east, Open Space (Skylinks Golf Course) to the south, and Open Space (Skylinks Golf Course) and Regional Serving Facility (Long Beach Airport) to the west. The nearest residence to the proposed access road entrance to the site on Clark Avenue is about 150 feet. This residence and other residences in the neighborhood are approximately 300 feet from the east edge of project grading (Figure 5). That back of Fire Station #19 is approximately 100 feet from the limits of project grading.

The City of Long Beach Noise Element Existing Conditions Report (City of Long Beach 2018) provides ambient measurement data within the City of Long Beach. The closest ambient noise measurement location referenced in the City of Long Beach Noise Element Existing Conditions Report is at 3402 Clark Avenue, approximately 1,500 feet south of the project site, and shows a 65 A-weighted decibel (dBA) equivalent-continue sound level (Leq) over a 15-minute period. The City Long Beach Noise Element Existing Conditions Report also shows traffic noise contours of between 60 dBA day-night exposure level (Ldn) and 65 dBA Ldn at the project site, as well as a community noise equivalent level (CNEL) under 65 dBA resulting from airport noise. These ambient noise levels resulting from traffic and airport operations are consistent with the measured ambient noise level of 65 dBA Leq.

Discussion:

a. Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant with Mitigation Incorporated. The City of Long Beach is committed to creating a healthy noise environment throughout the metropolitan City. The Long Beach Noise Ordinance (Chapter 8.80 of the Long

Beach Municipal Code) is intended to protect people from non-transportation noise sources such as construction activities, commercial operations, machinery, and nightlife. Enforcement of the noise ordinance requires new developments to show compliance with the ordinance, including operating in accordance with noise levels recommended in the City's updated Noise Element (City of Long Beach 2023). The City of Long Beach has established criteria concerning noise within the City of Long Beach Municipal Code Section 8.80. The Noise Element Existing Conditions Report (City of Long Beach 2018) recommends a maximum single hourly peak noise level of 70 dBA between 7:00 AM and 10:00 PM, and 60 dBA from 10:00 PM to 7:00 AM for residential land use. Section 8.80.160 of the City's Municipal Code assigns the Project's receiving properties as district one land use, which includes an exterior noise limit of 45 dBA between 10:00 PM and 7:00 AM, and 50 dBA between 7:00 AM and 10:00 PM. The Section also sets a 5 dB penalty for tonal noise:

> In the event that alleged offensive noise contains a steady audible tone such as a whine, screech, or hum, or is a repetitive noise such as hammering or riveting or contains music or speech conveying informational content, the standard limits set forth shall be reduced by five (5) decibels.

Section 8.80.150 provides the following criteria when assessing compliance with the exterior noise limit:

> No person shall operate or cause to be operated any source of sound at any location within the incorporated limits of the City or allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, which causes the noise level when measured from any other property, either incorporated or unincorporated, to exceed:
>
> - The noise standard for that land use district as specified in Table A in Section 8.80.160 for a cumulative period of more than thirty (30) minutes in any hour; or
> - The noise standard plus five (5) decibels for a cumulative period of more than fifteen (15) minutes in any hour; or
> - The noise standard plus ten (10) decibels for a cumulative period of more than five (5) minutes in any hour; or
> - The noise standard plus fifteen (15) decibels for a cumulative period of more than one (1) minute in any hour; or
> - The noise standard plus twenty (20) decibels or the maximum measured ambient, for any period of time

Section 8.80.202 limits construction activity to 7:00 AM to 7:00 PM on weekdays, 9:00 AM to 6:00 PM on Saturdays, and is not authorized on Sundays unless a permit from the Noise Control Office is granted.

Project construction activities are anticipated to occur in phases that include site preparation, grading, and building construction. Acoustic emission levels for activities associated with Project construction were based upon the levels in the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Guidance Manual. The expected construction equipment per phase and the associated acoustic emission levels are provided in Table 3-6 below.

Table 3-5. Project Construction Acoustic Emissions

Construction Phase	Construction Equipment	Maximum Equipment Noise Level at 50 feet (dBA, L_{max})
Site Preparation	(1) Grader	85
	(1) Dozer	85
	(1) Loader	85
Grading	(1) Grader	85
	(1) Dozer	85
	(1) Loader	85
Building Construction	(1) Crane	83
	(1) Forklift	85
	(1) Generator Set	81
	(1) Loader	85
	(3) Welder	73

Source: FTA, 2006

Using acoustic emission levels in Table 3-6 as input to a basic propagation model, construction noise levels were calculated at the nearest residence. The basic model assumed spherical wave divergence from a point source. Furthermore, the model conservatively assumed that all pieces of construction equipment associated with an activity would operate simultaneously for the duration of that activity. An additional level of conservatism was built into the construction noise model by excluding potential shielding effects due to intervening structures and buildings along the propagation path from the site to receiver location. The closest sensitive receptor is a residential neighborhood located approximately 150 feet east of the project grading area (Figure 2). The noise level at this location is expected to reach a maximum of 76 dBA during the construction activities.

Noise associated with construction would result in a temporary increase to the ambient noise level to the nearest residences above the established threshold of a maximum single hourly peak noise level of 70 dBA for daytime hours. However, project construction would be temporary and would adhere to Mitigation Measure NOI-1, Construction Activity Limitations, which includes requirements that construction equipment and trucks use best available noise control techniques, stationary sources of noise be kept as far from sensitive receptors as possible, tools and equipment be hydraulically or electrically powered wherever possible, and construction be limited to daytime hours on weekdays and Saturdays. With implementation of Mitigation Measure NOI-1, the temporary construction impacts are considered to be less than significant.

The only operational Project noise source are the drainage pumps associated with the pump station. These pumps are expected to be two 15-horsepower (hp) pumps. The acoustic emission level of the pumps has been conservatively estimated at 88 dBA at 3 feet, based on previous projects using similarly sized equipment. Using this conservative estimate, the noise level will be below 43 dBA at the residential neighborhood 500 feet to the east of the pump locations, which is below the residential exterior noise limit of 50 dBA for daytime hours. Given the size of the pumps and that they would be enclosed within the pump house enclosure, the noise levels generated from the proposed project would comply with the applicable noise regulations and recommendations. Therefore, these noise levels are considered to be less than significant.

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant. Operation of the pumps being installed as part of the project would not generate vibration; however, construction of the underground storage facilities and site grading would require the use of equipment that could generate vibration. Sources of vibration consists of the equipment shown in Table 3-6. No blasting would be required at the project site.

The highest construction vibration levels are expected to be generated from grading that could occur within approximately 150 feet from single family residences to the east of the Project. According to the Federal Transit Administration (FTA) guidelines, a vibration level of 65 VdB is the threshold of perceptibility for humans. For a significant impact to occur, vibration levels must exceed 80 VdB during infrequent events (Federal Transit Administration 1995) at residences and 83 VdB for institutional land uses with primarily daytime use. Based on the levels published by the FTA (Federal Transit Administration 2006) the grading would generate a level of 71 VdB at the residential neighborhood 150 feet to the east of the Project (below the 80 VdB threshold for residences), and 76 VdB at the fire station which will be 100 feet from the grading (below the 83 VdB threshold for institutional land uses). This vibration level is considered less than significant as it is below the threshold of perceptibility for humans and below the impact levels cited by the FTA. The nearest residences are approximately 150 feet away from the project site entrance, across Clark Avenue and about 300 feet from the east edge of project grading. Groundborne vibration or groundborne noise impacts to these residences would be less than significant.

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Less Than Significant. The project is approximately 2,000 feet east of the Long Beach Airport. The City of Long Beach Noise Element Update Existing Conditions Report shows the project site has a CNEL under 65 dBA resulting from airport noise. The noise levels generated from the operation of the Project would be less than 43 dBA at the nearest sensitive receptor, which would not exceed the levels from airport noise or the 60 to 65 dBA Ldn from traffic noise. Therefore, these noise levels are considered to be less than significant.

Mitigation Measure:

NOI-1. Construction Activity Limitations. The Project applicant shall require construction contractors to limit standard construction activities as follows:

- Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds, wherever feasible).
- Stationary noise sources shall be located as far from adjacent receptors as possible and shall be muffled and enclosed within temporary sheds, incorporate insulation barriers or other measures to the extent feasible.
- If needed impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically-powered tools. However, where use of pneumatically powered tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used where feasible, and this could achieve a reduction of 5 dBA. Quieter procedures shall be used such as drilling rather that impact equipment whenever feasible.
- Electrically-powered equipment will be used instead of pneumatic or internal combustion powered equipment, where feasible.

- Material stockpiles and mobile equipment staging, parking, and maintenance areas will be located as far as practicable from noise-sensitive receptors.
- The use of noise-producing signals, including horns, whistles, alarms, and bells, will be for safety warning purposes only.
- Construction activities will be limited to 7:00 AM to 7:00 PM on weekdays, 9:00 AM to 6:00 PM on Saturdays, and is not authorized on Sundays unless a permit from the Noise Control Office is granted.

3.4.14 POPULATION AND HOUSING

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?			X	
b.	Displace a substantial number of existing people or housing units, necessitating the construction of replacement housing elsewhere?				X

Existing Conditions:

The proposed project site is within the developed, urban, and incorporated City of Long Beach within Los Angeles County. The City of Long Beach population was estimated at 456,062 individuals as of July 1, 2021 (U.S. Census Bureau 2022).

Discussion:

a. Would the project induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?

Less Than Significant Impact. Construction of the proposed project would provide short-term construction jobs over an approximately 8-month period. Many of the construction jobs would be temporary and would be specific to the variety of construction activities. The workforce would include a variety of craftspeople, such as carpenters, equipment operators, plumbers, and laborers. Generally, construction workers are only at a job site for the timeframe in which their specific skills are needed to complete that phase of construction. Although the proposed project would increase the number of employees at the project site during construction activities, it is expected that local and regional construction workers would be available to serve the proposed project's construction needs. Project-related construction workers would not be expected to relocate their household's place of residence as a consequence of working on the proposed project.

During long-term project operations, workers would be needed for routine maintenance activities to be performed by the City of Long Beach, as discussed in Section 2.3.1, *Project Components*. However, the proposed project is not anticipated to generate a substantial number of new jobs.

Therefore, the proposed project would induce substantial population growth or demand for housing, and the impact would be less than significant.

b. Would the project displace a substantial number of existing people or housing units, necessitating the construction of replacement housing elsewhere?

No Impact. As previously stated, the project proposes the construction of a stormwater system in a portion of an existing golf course where there are no residences. Therefore, the project would not result in a loss of housing or displace any persons living on the project site, nor require or necessitate the development of replacement housing elsewhere. Therefore, no impact would occur.

Mitigation Measures:

No mitigation measures are required.

3.4.15 PUBLIC SERVICES

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
	i.) Fire protection?				X
	ii.) Police protection?				X
	iii.) Schools?				X
	iv.) Parks?				X
	v.) Other public facilities?				X

Existing Conditions:

Fire Protection Services

The City of Long Beach Fire Department provides fire protection services to the project site, and currently has 23 stations located throughout the city. The nearest fire station is Station #19 (3559 Clark Avenue), which is abutting the east side of the project site.

Police Protection Services

The project site is served by Long Beach Police Department and is in the East Police Division of the City. The nearest police station is located at 4800 Los Coyotes Diagonal, Long Beach, approximately 1.5 mile south of the project site.

Public Education

The project site falls within the boundary of the Long Beach Unified School District, which educates 68,000 students, from preschool to high school, in 85 public school located in the cities of Long Beach, Lakewood, Signal Hill, and Avalon (on Catalina Island). The nearest public school is Burcham Elementary School at 5610 E Monlaco Road, Long Beach, approximately 0.66 mile east of the site.

Parks

Long Beach Parks, Recreation and Marine serves the community with recreation programs and services that are offered at dozens of parks. The Skylinks 18-hole golf course, a public course owned by the City of Long Beach, was originally opened in 1959 and underwent renovation in 2004. The portion of the golf course property where the project is proposed is adjacent to (but not part of) the usable fairway for golf activities and, as such, is not used for golf or active recreation. Rosie the Riveter Park is north of the site, across Los Cerritos Channel. A sand volleyball court is on the site adjacent to Fire Station #19 that is used by the firefighters and golf course staff.

Discussion:

a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

I. Fire Protection

No impact. A portion of the project site would continue to be used for passive recreation with implementation of the proposed project. No buildings or additional people would be using the site that would warrant the need for new or physically altered fire facilities. Demand for fire protection services would remain similar to existing conditions. Therefore, no project impacts to fire protection services would occur.

II. Police Protection

No Impact. Similar to the discussion for fire protection services, no additional people would be using the site that would warrant the need for additional police protection services. Therefore, demand for police protection services would remain similar to existing conditions. No project impacts to police protection services would occur.

III. Schools

No Impact. Similar to the discussion for fire and police protection services, no additional people would be using the site that would result in additional demand for local schools. Therefore, demand for schools would remain similar to existing conditions. No project impacts to schools would occur.

IV. Parks

No Impact. The project site would continue to be used as a public for passive recreation. Once the underground structures are installed, the 1.6-acre project site would be landscaped with native trees and shrubs as described in Section 2.3.2 in the Project Description and Section 3.4.3 - Biological Resources, and would include paths make up of decomposed granite, benches, an interpretive sign, and a relocated volleyball court. A portion of the project site would be fenced to keep the public out of the vegetated storage ponds that would be created for the project. No project impacts to parks would occur.

V. Other Public Facilities

No impact. Demand for public services is typically linked to an increase in population growth in the area through the development of new housing units or the generation of new jobs. The proposed project includes passive recreation improvements that would not increase housing or induce population growth through the generation of a substantial number of new jobs that could, in turn, increase the need for public facilities. Therefore, there would be no impacts to public facilities associated with the project.

Mitigation Measures:

No mitigation measures are required.

3.4.16 RECREATION

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X	
b.	Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?			X	

Existing Conditions:

As discussed in the previous section, the Long Beach Parks, Recreation and Marine department serves the community with recreation programs and services that are offered at dozens of parks. Recreation programs and services are offered at 169 parks with 26 community centers, two historic sites, two major tennis centers, one of the busiest municipal golf systems in the country with five courses, the largest municipally operated marina system in the nation, and six miles of beaches. The proposed project site is located on the Skylinks 18-hole public golf course, which was originally opened in 1959 and underwent renovation in 2004. The portion of the golf course property where the project is proposed is adjacent to (but not part of) the usable fairway for golf activities and, as such, is not used for golf or active recreation. The project site includes a mixture of non-native ornamental trees and non-native grasses and is accessed from the existing golf course. Rosie the Riveter Park is north of the site, across Los Cerritos Channel. A sand volleyball court is on the site adjacent to Fire Station #19 that is used by the firefighters and golf course staff.

Discussion:

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Less Than Significant Impact. Demand for park and recreational services is typically linked to an increase in population growth in the area through the development of new housing units or the generation of new jobs. The project would not result in an increase in population growth in the area and, therefore, would not increase demand for the use of the Skylinks Golf Course or other parks in the area such that substantial physical deterioration of the facility would occur or be accelerated. In addition, the project site is on the property where the existing Skylinks golf course is located, but is not part of the usable fairway for golf activities. The golf course would remain open and would not be directly affected by construction or operation of the project. The existing degraded sand volleyball court would be relocated slightly south of its current location and improved for continued use by the firefighters and golf course employees. A less than significant impact would occur.

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

Less Than Significant Impact. Once the project is complete, and the underground structures are installed, the project site would be landscaped with native trees and shrubs, and would include paths made up of decomposed granite, benches, an interpretive sign, and a relocated volleyball court. There would also be vegetated swales and

bioswales strategically placed through the vegetated storage ponds. The project includes a publicly accessible pedestrian pathway along the flood control channel and usable space within the current open and undeveloped area for educational purposes. This would allow the project site to continue as a public recreational facility and would not have an adverse physical effect on the environment. The vegetated storage ponds and other surface elements critical to water treatment and function of the water quality treatment system would be off limits to public access, while remaining visible for the public to see and learn about. These improvements would be considered a beneficial impact to park facilities as part of long term operations. A less than significant impact would occur.

Mitigation Measures:

No mitigation measures are required.

3.4.17 TRANSPORTATION

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			X	
b.	Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			X	
c.	Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
d.	Result in inadequate emergency access?		X		

Existing Conditions:

Primary access to the site is from the golf course. Pedestrian access to the project site is also from Clark Avenue, which runs north-south and is designated as a “Minor Avenue” in the Long Beach Mobility Element (City of Long Beach 2013), which indicates that it provides for the movement of traffic to neighborhood activity centers and serves as a route between neighborhoods. It also serves as a primary bicycle route and local transit route. Carson Street and Spring Street are east-west “Major Avenues” which are defined as major routes for the movement of traffic within the City as well as a connector to neighboring cities, and are truck routes within the City. Lakewood Boulevard is a north-south “Regional Corridor” that connects State Route (SR) 91 to I-405, north and north of the project site, respectively. A regional corridor is designed for intraregional and intercommunity mobility. Bellflower is a north-south “Boulevard” characterized by a long-distance, medium speed corridor that traverses an urbanized area. Both Lakewood Boulevard and Bellflower Boulevard are designated by the City as truck routes.

Discussion:

a. Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Less Than Significant Impact. The proposed project involves the construction and operation of a regional stormwater capture and filtration facility located beneath an undeveloped area at the northeast corner of the Skylinks Golf Course. During construction, there would be a short-term and temporary increase in vehicle trips associated with construction workers and equipment. Anticipated truck haul routes would be accessed from N. Lakewood Boulevard and I-405, which is consistent with City-identified truck routes. Site access would be provided along the existing maintenance and access road on the northern edge of the Los Cerritos Channel, and via a temporary access created as an opening in the golf course fence, south of the Fire Station #19. Both access routes are accessible from Clark Avenue. There would also be temporary partial lane closures along Clark Avenue during some aspects of construction, particularly when equipment is being brought to the site. The project staging area would be located on site in the southern area, south of the existing fire station and is anticipated to be 100 feet by 75 feet, approximately 0.17 acre in area. The proposed project would not make any permanent changes to the circulation system or street capacities and would not add additional vehicle trips as part of long-term project operations. Therefore, project impact would be less than significant.

b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Less Than Significant Impact. Project construction trips would be short term and temporary. After project construction is complete, trips generated by the long-term project operation of the proposed project are not expected to occur on a daily basis and are considered nominal.

According to the City of Long Beach Traffic Impact Guidelines (City of Long Beach 2020), construction of the project would be considered a "Low Trip Generator" (less than 500 average daily trips) and, therefore, is presumed insignificant with respect to Vehicle Miles Traveled (VMT). This means that the project is consistent with CEQA Guidelines Section 15064.3, subdivision (b). In addition, once completed, the project would only require a nominal number of trips for maintenance personnel, which would be similar to existing conditions. As such, a VMT analysis is not required. Therefore, project impact is less than significant.

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. No changes to the existing street system are proposed as part of the project. The proposed project is the construction of a regional stormwater capture and filtration facility located beneath an undeveloped area. Following installation of the system, the project site would be backfilled with native material and returned to elevations consistent with the pre-construction surface grade. Therefore, no project impact to roadways or circulations system would result.

d. Would the project result in inadequate emergency access?

Less Than Significant Impact with Mitigation Incorporated. The proposed project may result in temporary congestion and delay associated with construction trips on Clark Avenue which could temporarily block emergency access to the project site or to emergency vehicles along Clark Avenue, including at Fire Station #19. A partial lane closure on Clark Avenue may be needed, especially when equipment is being brought to the site. Clark Avenue is a four-lane road, and per standard construction traffic procedures, truck ingress and egress would be controlled by a flagman, or other equivalent means determined appropriate by the City of Long Beach, which would minimize the potential for vehicular hazards associated with truck activity on and adjacent to the project site. In addition, emergency vehicles would be granted right-of-way in cases of emergency. Traffic control would be necessary during construction to ensure that local traffic and access to and from Fire Station #19 are not impeded. Implementation of Mitigation Measure TRF-1 would mitigate this impact. Therefore, impacts would be less than significant with mitigation incorporated.

Mitigation Measures:

TRF-1 Construction Traffic Management Plan. A Construction Traffic Management Plan (CTMP) shall be prepared for approval by the City of Long Beach Traffic Engineer, or designee, and implemented during proposed project construction. The CTMP shall also include the name and phone number of a contact person who can be reached 24 hours per day regarding construction traffic complaints or emergency situations. The CTMP may include, but not be limited to, the following:

- Construction activities shall be scheduled to reduce the effect on traffic flow on arterial streets.
- Construction truck haul routes shall be identified and routed to reduce travel on congested streets.
- The construction contractor shall keep haul routes clean and free of debris including but not limited to gravel and dirt as a result of its operations. The construction contractor shall clean adjacent streets, as directed by the City Traffic Engineer, or designee, of any material which may have been spilled, tracked, or blown onto adjacent streets or areas.
- Construction vehicles, including construction personnel vehicles, shall not park on public streets.
- Construction vehicles shall not stage or queue where they interfere with pedestrian and vehicular traffic or block access to nearby businesses.

- If feasible, any traffic lane closures will be limited to off-peak traffic periods, as approved by the City of Long Beach Public Works Department.
- The general public shall be notified in advance of any traffic lane closures so that motorists can plan accordingly.
- The Long Beach Police Department and the Long Beach Fire Department (including Fire Station #19) shall be notified a minimum of 24 hours in advance of any lane closures or other roadway work.

3.4.18 TRIBAL CULTURAL RESOURCES

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
	i.) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or		X		
	ii.) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		X		

Existing Conditions:

The project is within the ethnographic territory traditionally inhabited by the Gabrieliño (Tongva). The Gabrieliño occupied most of Los Angeles and Orange counties, including the watersheds of the Los Angeles, San Gabriel (approximately 1.5 miles east of the project site), and Santa Ana rivers, the Los Angeles basin to the Santa Monica and Santa Ana mountains, along the coast from Aliso Creek in the south to Topanga Creek in the north, and the islands of San Clemente, San Nicolas, and Santa Catalina. As discussed in Section 3.4.5, Cultural Resources, the SCCIC records search did not identify any historical resources within the project site. One prehistoric habitation site and funerary feature and a historic building were previously recorded within one mile of the project site. The NAHC's sacred lands file search results were positive for the project. The NAHC advised to contact the Gabrieleno/Tongva San Gabriel Band of Mission Indians as well as other interested tribes, for additional information. As specified in the PRC Section 21080.31, as amended by AB 52, lead agencies must provide notice inviting consultation to California Native American tribes that are traditionally and culturally affiliated with the geographic area of a proposed project if the Tribe has submitted a request in writing to be notified of proposed projects.

As discussed in Section 2.5 – California Native American Tribe Consultation, the City of Long Beach sent formal AB 52 notification letters via certified mail on August 19, 2022 to the following: tribes that were identified by the Native American Heritage Commission (NAHC) as having knowledge of and interest in cultural resources in the project area:

- Andrew Salas, Chairperson, Gabrieleno Band of Mission Indians – Kizh Nation
- Anthony Morales, Chairperson, Gabrieleno/Tongva San Gabriel Band of Mission Indians
- Sandonne Goad, Chairperson, Gabrielino/Tongva Nation
- Robert Dorame, Chairperson, Gabrielino Tongva Indians of California Tribal Council
- Christina Conley, Tribal Consultant and Administrator, Gabrieleno Tongva Indians of California Tribal Council
- Charles Alvarez, Gabrielino-Tongva Tribe
- Joyce Perry, Tribal Manager, Juaneno Band of Mission Indians Acjachemen Nation – Belardes
- Matias Belardes, Chairperson, Juaneno Band of Mission Indians Acjachemen Nation – Belardes
- Lovina Redner, Tribal Chari, Santa Rosa Band of Cahuilla Indians
- Joseph Ontiveros, Cultural Resource Department, Soboba Band of Luiseno Indians
- Isaiah Vivanco, Chairperson, Soboba Band of Luiseno Indians

As of October 27, 2022, City staff held a consultation meeting with tribal representatives (including Chairperson Andrew Salas) from the Gabrieleno Band of Mission Indians – Kizh Nation. In addition, a phone conversation was held on November 2, 2022 with Christina Conley, the Tribal Consultant and Administrator of the Gabrieleno Tongva Indians of California Tribal Council (GTIOC). Mitigation measures were provided to City staff on November 2, 2022 from the Gabrieleno Band of Mission Indians – Kizh Nation, which are provided here as mitigation measures TCR-1, TCR-2, and TCR-3. Mitigation Measures were included at the request of Christina Conley, Native American Cultural Resource Monitor for the GIOTC, which are provided here as TCR-4, TCR-5, and TCR-6.

Discussion:

a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

I. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

Less Than Significant Impact with Mitigation Incorporated. No California Register of Historic Place (CRHR)-eligible resources or resources listed in a local register of historic resources have been identified at the project site and no specific resources important to interested tribes have been identified following AB 52 consultation. However, consultation with Gabrieleno Band of Mission Indians – Kizh Nation and GTIOC resulted in the proposition of mitigation measures acceptable to each tribe.

Mitigation Measures TCR-1 through TCR-3 were provided by the Gabrieleno Band of Mission Indians – Kizh Nation. TCR-1 requires Native American (Gabrieleno Band of Mission Indians – Kizh Nation) tribal monitoring of ground-disturbing activities associated with project construction. Mitigation Measures TCR-4 through TCR-6 were provided by the GTIOC. TCR-4 requires Native American (GTIOC) tribal monitoring of ground-disturbing activities associated with project construction. Tribal monitors from both groups shall only be on-site when these ground-disturbing activities occur. Tribal monitoring shall continue until the conclusion of ground-disturbing activities on the project site that disturb sediments a first time. Inclusion of Mitigation Measures TCR-1 through TCR-6 include treatment and reburial procedures established by each tribe in the event tribal cultural resources are discovered. These measures would reduce potentially significant impacts to Tribal Cultural Resources to less than significant by providing for Native American monitors to be onsite during construction to ensure that construction can be halted if any unanticipated discoveries of human remains and funerary objects are found and defines a process by which these discoveries would be handled. With implementation of Mitigation Measures TCR-1 through TCR-6, impacts would be reduced to less than significant.

II. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less Than Significant with Mitigation Incorporated. The records search did not identify any significant tribal cultural resources within the project site. The NAHC sacred land file search results were positive. There would be no impact on any known Tribal Cultural Resources from the proposed project. However, to ensure that no such impacts would occur to previously unknown resources, Mitigation Measures TCR-1 through TCR-6 would be implemented and would reduce potential impacts to less than significant. As discussed for item (a)(i), These measures would reduce potentially significant impacts to Tribal Cultural Resources to less than significant by providing for Native American monitors to be onsite during construction to ensure that construction can be halted if any unanticipated discoveries of human remains and funerary objects are found, and defines a process by which these discoveries would be handled.

Mitigation Measures:

Mitigation measures TCR-1, TCR-2, and TCR-3 were provided by the Gabrieleño Band of Mission Indians – Kizh Nation and apply to the monitoring and treatment by this tribe:

TCR-1 Retain a Native American Monitor Prior to Commencement of Ground-Disturbing Activities.

A. The project applicant/lead agency shall retain a Native American Monitor from or approved by the Gabrieleño Band of Mission Indians – Kizh Nation. The monitor shall be retained prior to the commencement of any "ground-disturbing activity" for the subject project at all project locations (i.e., both on-site and any off-site locations that are included in the project description/definition and/or required in connection with the project, such as public improvement work). "Ground-disturbing activity" shall include, but is not limited to, demolition, pavement removal, potholing, auguring, grubbing, tree removal, boring, grading, excavation, drilling, and trenching.

B. A copy of the executed monitoring agreement shall be submitted to the lead agency prior to the earlier of the commencement of any ground-disturbing activity, or the issuance of any permit necessary to commence a ground-disturbing activity.

C. The monitor will complete daily monitoring logs that will provide descriptions of the relevant ground-disturbing activities, the type of construction activities performed, locations of ground-disturbing activities, soil types, cultural-related materials, and any other facts, conditions, materials, or discoveries of significance to the Tribe. Monitor logs will identify and describe any discovered TCRs, including but not limited to, Native American cultural and historical artifacts, remains, places of significance, etc., (collectively, tribal cultural resources, or "TCR"), as well as any discovered Native American (ancestral) human remains and burial goods. Copies of monitor logs will be provided to the project applicant/lead agency upon written request to the Tribe.

D. On-site tribal monitoring shall conclude upon the latter of the following (1) written confirmation to the Kizh from a designated point of contact for the project applicant/lead agency that all ground-disturbing activities and phases that may involve ground-disturbing activities on the project site or in connection with the project are complete; or (2) a determination and written notification by the Kizh to the project applicant/lead agency that no future, planned construction activity and/or development/construction phase at the project site possesses the potential to impact Kizh TCRs.

E. Upon discovery of any TCRs, all construction activities in the immediate vicinity of the discovery shall cease (i.e., not less than the surrounding 50 feet) and shall not resume until the discovered TCR has been fully assessed by the Kizh monitor and/or Kizh archaeologist. The Kizh will recover and retain all

discovered TCRs in the form and/or manner the Tribe deems appropriate, in the Tribe's sole discretion, and for any purpose the Tribe deems appropriate, including for educational, cultural and/or historic purposes.

TCR-2 Unanticipated Discovery of Human Remains and Associated Funerary Objects.

A. Native American human remains are defined in PRC 5097.98 (d)(1) as an inhumation or cremation, and in any state of decomposition or skeletal completeness. Funerary objects, called associated grave goods in Public Resources Code Section 5097.98, are also to be treated according to this statute.

B. If Native American human remains and/or grave goods discovered or recognized on the project site, then all construction activities shall immediately cease. Health and Safety Code Section 7050.5 dictates that any discoveries of human skeletal material shall be immediately reported to the County Coroner and all ground-disturbing activities shall immediately halt and shall remain halted until the coroner has determined the nature of the remains. If the coroner recognizes the human remains to be those of a Native American or has reason to believe they are Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission, and Public Resources Code Section 5097.98 shall be followed.

C. Human remains and grave/burial goods shall be treated alike per California Public Resources Code section 5097.98(d)(1) and (2).

D. Construction activities may resume in other parts of the project site at a minimum of 200 feet away from discovered human remains and/or burial goods, if the Kizh determines in its sole discretion that resuming construction activities at that distance is acceptable and provides the project manager express consent of that determination (along with any other mitigation measures the Kizh monitor and/or archaeologist deems necessary). (CEQA Guidelines Section 15064.5(f).)

E. Preservation in place (i.e., avoidance) is the preferred manner of treatment for discovered human remains and/or burial goods. Any historic archaeological material that is not Native American in origin (non-TCR) shall be curated at a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County or the Fowler Museum, if such an institution agrees to accept the material. If no institution accepts the archaeological material, it shall be offered to a local school or historical society in the area for educational purposes.

F. Any discovery of human remains/burial goods shall be kept confidential to prevent further disturbance.

TCR-3 Procedures for Burials and Funerary Remains.

A. As the Most Likely Descendant ("MLD"), the Koo-nas-gna Burial Policy shall be implemented. To the Tribe, the term "human remains" encompasses more than human bones. In ancient as well as historic times, Tribal Traditions included, but were not limited to, the preparation of the soil for burial, the burial of funerary objects with the deceased, and the ceremonial burning of human remains.

B. If the discovery of human remains includes four or more burials, the discovery location shall be treated as a cemetery and a separate treatment plan shall be created.

C. The prepared soil and cremation soils are to be treated in the same manner as bone fragments that remain intact. Associated funerary objects are objects that, as part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later; other items made exclusively for burial purposes or to contain human remains can also be considered as associated funerary objects. Cremations will either be removed in bulk or by means as necessary to ensure complete recovery of all sacred materials.

D. In the case where discovered human remains cannot be fully documented and recovered on the same day, the remains will be covered with muslin cloth and a steel plate that can be moved by heavy equipment placed over the excavation opening to protect the remains. If this type of steel plate is not available, a 24-hour guard should be posted outside of working hours. The Tribe will make every effort to recommend diverting the project and keeping the remains in situ and protected. If the project cannot be diverted, it may be determined that burials will be removed.

E. In the event preservation in place is not possible despite good faith efforts by the project applicant/developer and/or landowner, before ground-disturbing activities may resume on the project site, the landowner shall arrange a designated site location within the footprint of the project for the respectful reburial of the human remains and/or ceremonial objects.

F. Each occurrence of human remains and associated funerary objects will be stored using opaque cloth bags. All human remains, funerary objects, sacred objects and objects of cultural patrimony will be removed to a secure container on site if possible. These items should be retained and reburied within six months of recovery. The site of reburial/repatriation shall be on the project site but at a location agreed upon between the Tribe and the landowner at a site to be protected in perpetuity. There shall be no publicity regarding any cultural materials recovered.

G. The Tribe will work closely with the project's qualified archaeologist to ensure that the excavation is treated carefully, ethically and respectfully. If data recovery is approved by the Tribe, documentation shall be prepared and shall include (at a minimum) detailed descriptive notes and sketches. All data recovery data recovery-related forms of documentation shall be approved in advance by the Tribe. If any data recovery is performed, once complete, a final report shall be submitted to the Tribe and the NAHC. The Tribe does NOT authorize any scientific study or the utilization of any invasive and/or destructive diagnostics on human remains.

Mitigation measures TCR-4, TCR-5, and TCR-6 were provided by the Gabrielino Tongva Indians of California (GTIOC) and apply to the monitoring and treatment by this tribe:

TCR-4 Retain a Native American Monitor.

A. A qualified and certified indigenous tribal member of Gabrielino Tongva Indians of California (GTIOC) and direct lineal descendant of the project site (NAGPRA section 10.14) to provide the professional Native American Monitoring required for only the *ground disturbing activity* on the site. Ground disturbances including but not limited to the removal of asphalt/cement/slurry, trenching, boring, excavation, auguring, grubbing, tree removal, grading and drilling will be monitored. The Tribal Monitor will only be required on site when these ground disturbing activities occur.

B. The GTIOC monitor will be responsible for observing all mechanical and hand labor excavations to include paddle scrappers, blade machines, front-end loaders, back hoe, boring and drill operations as well as hydraulic and electric chisels. Associated work using tools such as picks and other non-electric or gasoline tools that are not regarded as mechanical will be monitored for their soil disturbances.

C. Soils that are removed from the work site are considered culturally sensitive and are subject to inspection. These soils whether placed in a dump truck or spots piles are to be inspected. The monitor will temporarily hold excavations until a determination is made on the sensitivity of the of the soil. If the soils are sensitive, an archeological monitor will verify the find and notify site supervisor.

D. The GTIOC monitor may make recommendations during the course of the project when a cultural area has been impacted. The GTIOC monitor will be authorized to halt or redirect excavation activities to another area as an assessment is made. Both archeological and GTIOC will work together to insure that the area is warranted as being culturally sensitive before a determination is made. Avoidance and directing an alternative route from this culturally sensitive area is highly recommended.

E. Any artifacts associated within the site that are not associated with any burials are subject to collection by the designated archaeologist for purposes of data and information vital for their final report. The GTIOC monitor does not collect artifacts for any reason. Unauthorized removal of artifacts will jeopardize sites orientation and successful data recovery. Only a qualified archeologist will remove artifacts for their reports. The land owner will work with the GTIOC monitor to ensure that a proper repository is established. A final report will be issued to the cultural consultant by the archeological company.

F. It is the sole responsibility of the GTIOC monitor to provide the client with a written daily field report that includes photos of his/her accounting of the soil disturbances of the daily activities. This perspective of the daily activities by the GTIOC monitor will enhance the information gathered by the field archeologist. The daily report will include observations the GTIOC visually observed the project site at the beginning of each work day (i.e., weather conditions, overnight disturbances). Written daily monitoring reports will include daily observations on surface soil as well as disturbed soil. Photographic documentation is included in the daily reports. When project is completed, GTIOC will certify that work performed was done so within compliance of AB52 and SB18 within 5 days of completion of the Native American monitoring aspect of the project.

TCR-5 Procedures for the treatment and disposition of human remains and associated grave goods at Gabrielino Tongva ancestral sites.

A. **Treatment plan for human remain discovery.** If any archaeological or paleontological, or cultural deposits, are discovered, including but not limited to skeletal remains and grave related artifacts, artifacts of traditional cultural, religious, or spiritual sites, or any other artifacts relating to the use or habitation sites, all construction shall cease within at least 50 feet of the discovery and held until the proper authorities are contacted. Authorities, to include the county corner and law enforcement, will evaluate and make a determination and a formal review of the find. The county coroner has the legal responsibility for determining whether or not the remains are native indigenous people.

   If it is established that the remains are of native indigenous people, the Native American Heritage Commission (NAHC) will be contacted by the coroner under the California Health and Safety Code (Senate Bill 297, Chapter 1492, statutes of 1982 and section 7050.50).

   A Most Likely Descendent (MLD) will be assigned by the NAHC to ensure the ancestor(s) will be treated with dignity and respect (Public Resource Code 5097.98).

   ****The MLD may not be a Native American Monitor assigned to monitor the site where human remains were unearthed. GTIOC deems that to be a conflict of interest.****

   A certified osteologist will be retained to verify the human remains authenticity and work to help remove the ancestor(s) from the site area with the discretion and advise from the MLD. The GTIOC monitor(s) assigned to the project will assist the osteologist and archeological monitors in the recovery process. The MLD will determine where the ancestors will be housed pending a final decision for the reinterment of the ancestor(s).

B. **Confidentiality.** Any and all information provided about the location of an archeological or sacred site by our GTIOC cultural consultant will not be disclosed reproduced both digitally or on paper. Furthermore, the location must not be published for public viewing which includes any reports either preliminary or final and must be kept confidential to maintain the integrity and compliance of the archeological or sacred site.

TCR-6 Recovery and Reburial Procedures.

A. Specific methods of recovery and reburial procedures have been developed and adopted by the Gabrielino Tongva Indians of California and are required to adhere to when recovering Gabrielino Tongva remains. Conditions may arise where altering some of these guidelines will be considered. Consultation

with the Most Likely Descendant (MLD) and the GTIOC monitor(s) assigned to the site should then be scheduled to determine other procedures that may be acceptable to the Gabrielino Tongva Indians of California Nation.

B. Excavation:

1. Consultation between the MLD and the archeological firm must take place before the the recovery of the remains and during the process of extraction.
2. A 50 foot perimeter for each uncovered burial will be required to safeguard further destruction until the area is examined for additional remains and associated grave goods.
3. In the event blade machines are operating in an adjacent area, a maximum of 2” cuts or less will be permitted in all cultural areas.
4. If more than one area is being excavated for extraction of remains simultaneously, an additional GTIOC must be required. Each excavated burial will be monitored exclusively.
5. Wooden tools are preferred for process of recovery; electric chisels and other power tools should be avoided.
6. If remains are pedestaled, they will be placed on plywood for removal. If remains cannot be pedestaled due to soil conditions, remains just be carefully placed in cloth bags.
7. Soils adjacent to burials will be saved for reburial in plastic containers.
8. No photography (both film and digital) or video is allowed to be taken of the remains or the site. Drawings of remains are permitted to retain the orientation of the ancestors for reinterment purposes only. Coroner photographs of the remains may not be published for any purpose.

C. Testing:

1. DNA testing cannot be undertaken.
2. No invasive testing which would compromise the integrity of the remains is permitted.
3. Macroscopic analysis is permitted.
4. Any associated grave goods (such as shell) may be used for dating purposes of each burial.
5. When remains are unearthed, the 1’X 1’ test pits will be allowed to establish the extent of the burial area when necessary.
6. All windrows within a 50 foot area must be screened (either wet or dry).

D. Storage:

1. Natural cotton bags and sheeting or cotton drop cloths will be used to store remains until the time of reinterment. Deer or other native hides may be used to cover the bagged and wrapped remains until the reburial and may become the burial wrapping.
2. Bone fragments are also subject to be bagged in cotton.
3. Until the scope of the project is completed, storage of ancestors should be done in close proximity to location of excavation or protected area must be provided by landowner or archeologist.

E. Reburial:

1. Efforts should be made to keep the remains within the same location or in close proximity to the removal site as possible. It is preferable to repatriate the remains within a 1/2 mile radius of the

original grave site. If it is not possible to identify a proper location within the 1/2 mile radius, a secure location will be valued over distance.

2. If the preponderance of remains is uncovered in or excavated from one area, the reinterment should be in that area.
3. The reburial site should offer the best long-term protection against any additional disturbances.
4. Each reburial requires approximately 4’ X 51/2’ when fully articulated and should be at a depth of 6-10 feet. The purpose of this depth is to ensure difficulty in disturbing the reburial and to allow adequate room for capping if necessary.
5. Any isolated bone fragments uncovered on site may be buried together in an individual burial pit with indigenous animal skins, sea weed, or the cotton cloth used for all bagged fragments.
6. All associated grave goods and artifacts along with soils will be buried together with the ancestors.
7. No drawings of any other images of ancestral remains may be used for publication without consultation and the approval of the GTIOC monitors and appointed MLD for the site.

F. Costs:

1. The landowner(s) will be responsible for all costs related to the proper storage and reburial of remains excavated on their property to include all burial materials as required in these procedure guidelines.
2. Landowner(s) will be financially responsible for providing reburial plots that are acceptable by the MLD.

3.4.19 UTILITIES AND SERVICE SYSTEMS

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b.	Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X	
c.	Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
d.	Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e.	Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

Existing Conditions:

Approximately 60 percent of the City of Long Beach's water supply is local groundwater, and the remainder is imported by the Metropolitan Water District from the Colorado River and Northern California's Bay-Delta Region (City of Long Beach Water 2023). Wastewater generated in the City is treated by the Sanitation Districts of Los Angeles County. Treated wastewater can be used to irrigate parks, golf courses, cemeteries and athletic fields, as well as to recharge groundwater basins and be used for street sweeping. Most City-generated solid waste is sent to the Southeast Resource Recovery Facility (SERRF) where it is processed through boilers and includes recycling at the front end and back end of the process. This reduces the amount of waste generated and the remaining waste is sent to a nearby landfill or transfer station. Electricity for the City of Long Beach is provided by Southern California Edison, and natural gas service is provided by the City's Energy Resources Department. Stormwater runoff and the storm drain system in the City is managed by the City of Long Beach Stormwater and Environmental Compliance Division.

Discussion:

a. Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less Than Significant Impact. The proposed project involves the construction of a stormwater capture and retention facility and does not include the construction of any new land uses that would generate wastewater, or increase the demand for water supplies, natural gas, or telecommunications facilities. There would be no impact to these utilities or service systems. A negligible amount of electrical power would be needed for the drainage pumps discussed in Section 2.3.1. The project would tie into the existing stormwater drainage system at Wardlow Creek but would not change the amount of stormwater generated in the watershed. As part of the project, an existing 12-inch city reclaimed water line would be relocated to the east to go around the proposed storage gallery. This reclaimed water line is currently used as the main source of irrigation for the golf course and would continue to serve this purpose after relocation. A new reclaimed water line connection would also be installed as part of the project to irrigate the new landscaping for the project. Impacts would be less than significant.

b. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Less Than Significant Impact. As stated above, the proposed project is the construction of a new stormwater capture and retention system and does not include the construction of any new development that would generate increased demand for water supplies. Once installed, the landscaping at the site would consist of native vegetation that would likely require less water to maintain than that needed for the existing ornamental trees and non-native vegetation that currently exists on the site. In addition, the stormwater captured at the site would be used to irrigate the new landscaping. Therefore, a less than significant impact would occur.

c. Would the project result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. The proposed project is a stormwater capture project but would not generate any wastewater requiring treatment at a sewage treatment plant. No impact to wastewater treatment systems in the City would occur.

d. Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less than Significant Impact. The proposed project is a water quality infrastructure project with associated landscape improvements that would not generate substantial amounts of solid waste. Project construction waste would be recycled to industry standards. Once operational, waste generation from the proposed project would primarily be from routine maintenance activities that would not be a significant source of new waste, and by visitors to the site. Although some solid wastes would be generated by the proposed project, the amounts would be minimal and are not anticipated to adversely affect landfill capacity. Therefore, project impact would be less than significant.

e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less Than Significant Impact. As discussed for item (d), the proposed project would not generate substantial amounts of solid waste, and waste would be recycled to industry standards including complying with applicable federal, state, and local statutes and regulations related to solid waste. Once operational, waste generation from the proposed project would primarily be from routine maintenance activities and by visitors to the site and would not be a significant source of new waste. Therefore, project impact would be less than significant.

Mitigation Measures:

No additional mitigation measures are required.

3.4.20 WILDFIRE

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:					
a.	Substantially impair an adopted emergency response plan or emergency evacuation plan?				X
b.	Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				X
c.	Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X
d.	Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				X

Existing Conditions:

The project site is located within a portion of the Skylinks Golf Course, which is located within a developed, urban environment. The project site is not within or near a State Responsibility Area or Federal Responsibility Area (California Office of the State Fire Marshall 2022a). No lands within the City of Long Beach, including the project site, are designated as a Very High Fire Hazard Severity Zone (California Office of the State Fire Marshall 2022a), and no areas within Long Beach are recommended by the California Department of Forestry and Fire Protection (CAL FIRE) to be included as a Very High Fire Hazard Severity Zone within the Local Responsibility Area (California Office of the State Fire Marshall 2022b).

Discussion:

a. Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

b. Would the project due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

c. Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

d. Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

The following response addresses Thresholds 4.20(a), (b), (c), and (d), as outlined above.

No Impact. The project site is an existing public golf course on relatively flat land at the bottom of a basin that would continue to be used as a public recreational facility. The project site is not within or near a State Responsibility Area nor lands classified, or recommended to be classified, as a Very High Fire Hazard Severity Zone. As such, the proposed project would not result in any impacts related to wildfire.

Mitigation Measures:

No mitigation measures are required.

3.4.21 MANDATORY FINDINGS OF SIGNIFICANCE

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?		X		
b.	Have impacts that are individually limited but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects).		X		
c.	Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?		X		

Discussion:

a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

Less Than Significant Impact with Mitigation Incorporated. The proposed project would capture and treat regional stormwater in a 1,655-acre drainage area. Once installation is complete, fill would be placed back on top of the unit back up to a similar grade as under existing conditions. Trees and vegetation in the area of disturbance on the site would be removed. The site would be landscaped with native trees and shrubs and would include paths for visitors and an area with vegetated storage ponds and vegetated swales and bioswales. The vegetated storage ponds and other surface elements critical to water treatment and function of the water quality treatment system would be off limits to public access. As discussed above in Sections 3.4.4, Biological Resources, 3.4.5, Cultural Resources, and 3.4.18, Tribal Cultural Resources, regulatory compliance measures are identified and mitigation measures are provided to reduce impacts to biological, cultural, and tribal resources during project construction. Regulatory Compliance Measures BIO-1, BIO-2, and BIO-3 address pre-construction nesting bird survey, tree removal and replacement, and permits for jurisdictional resources, respectively. Mitigation Measures CUL-1, CUL-2, and CUL-3 address worker environmental awareness training, inadvertent discovery of archaeological resources, and a cultural resources monitor, respectively. Mitigation Measures TCR-1 through TCR-6 address retaining a Native American monitor prior to commencement of ground-disturbing activities,

unanticipated discovery of human remains and associated funerary objects, and procedures for burials and funerary remains, respectively. With implementation of the mitigation measures as identified in those sections, project impact on cultural resources and Tribal Cultural Resources would be less than significant.

b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects).

Less Than Significant Impact with Mitigation Incorporated. The proposed project site is currently used for recreational purposes and would continue to be used as such with implementation of the project. The project would not result in a change in the land use of the property and nor would it contribute to an existing demand for services or resources in the area. Cumulative Impacts are limited to the construction activities (e.g., noise, dust, traffic detours, etc.) for this project, which would be temporary. When warranted, mitigation measures have been identified in this document to reduce project construction impacts to a level of less than significant. Mitigation Measure NOI-1 addresses construction activity limitations to minimize noise impacts and Mitigation Measure TRF-1 requires preparation and implementation of a construction traffic management plan to address traffic control measures, haul routes, and protocols for notifying emergency providers of temporary lane closures to address potential impacts to local traffic and to Fire Station #19. With implementation of the mitigation measures as identified in those sections, project impacts would be less than significant.

c. Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant Impact with Mitigation Incorporated. Any potentially adverse effects on human beings associated with the project would be limited to project construction, as discussed for item (b) in this section. Short-term exposure to potential noise or air pollution associated with heavy construction vehicles may be expected. However, implementation of mitigation measures during the construction phase as well as following applicable local and state standards for safety in construction would minimize the potential adverse impacts associated with project construction to a less than significant impact. Appropriate measures and management practices such as limiting construction periods to those permitted by the municipal code (as described in Mitigation Measure NOI-1), and coordinating construction activities with other service agencies would be employed during construction as necessary (as described in Mitigation Measure TRF-1). Once operational, the proposed project would result in the beneficial impact of improved water quality in the area. Therefore, impacts to human beings would be less than significant with mitigation incorporated.

4.0 LIST OF PREPARERS

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Kevin Fowler, INCE

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Attachment 3. Los Angeles RWQCB E-mail Correspondence

Berg, Daniel

From: Berg, Daniel
Sent: Friday, October 24, 2025 1:25 PM
To: 'Lee, Libby@Waterboards'
Cc: WB-RB4-401Certification; Tammy Takigawa; McKinnon, Mary
Subject: RE: File No. 25-108 Skylinks Regional Stormwater Capture Project - Request for Information

Hi Libby,

The total area for the outlet pipe installation is negligible at less than 1/1000 of an acre (~20 square feet).

The water in the channel will only be diverted around the working area during construction. Water will remain in the channel during operation.

The system is designed to treat 202.8 ac-ft/yr, with 93.1 ac-ft/yr of infiltration.

Please let us know if you need or anything else or if having a call about the project would be beneficial.

Thank you,
Daniel

Daniel Berg | Senior Biologist / Project Manager
Direct **(805) 681-7274** | Cell **(805) 705-1421**
Tetra Tech | Complex World, Clear Solutions™
5383 Hollister Avenue, Suite 130 | Santa Barbara, CA 93111

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From: Lee, Libby@Waterboards <Libby.Lee@Waterboards.ca.gov>
Sent: Monday, October 20, 2025 4:48 PM
To: Berg, Daniel <Daniel.Berg@tetratech.com>
Cc: WB-RB4-401Certification <RB4-401Certification@Waterboards.ca.gov>; Tammy Takigawa <tammy.takigawa@longbeach.gov>; McKinnon, Mary <Mary.McKinnon@tetratech.com>
Subject: RE: File No. 25-108 Skylinks Regional Stormwater Capture Project - Request for Information

⚠ **CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments. ⚠

Hello Daniel,

What is the total area (acres) of stream channel needed by the contractor to install the outlet pipe (work area, size of netting)? Temporary construction activities within the channel will be considered a temporary impact.

Previously, you've mentioned that during dry-weather conditions, water will be diverted from the stream. During low-flow conditions, will any water remain in the channel between the project inlet and outlet?

What is the estimated loss of water from the system to ground water? Is the initial estimate of 454 acre-feet on an average annual basis still the most up-to-date value?

Thank you,
Libby

CALIFORNIA Water Boards

Libby Lee
Engineering Geologist

R4 LOS ANGELES
Email: libby.lee@waterboards.ca.gov

Regional Water Quality Control Boards
Website: www.waterboards.ca.gov

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From: Berg, Daniel <Daniel.Berg@tetratech.com>
Sent: Thursday, October 16, 2025 1:57 PM
To: Lee, Libby@Waterboards <Libby.Lee@Waterboards.ca.gov>
Cc: WB-RB4-401Certification <RB4-401Certification@Waterboards.ca.gov>; Tammy Takigawa <tammy.takigawa@longbeach.gov>; McKinnon, Mary <Mary.McKinnon@tetratech.com>
Subject: RE: File No. 25-108 Skylinks Regional Stormwater Capture Project - Request for Information

Hi Libby,

That is up to the construction contractor's discretion, but most likely a saw and then a jackhammer.

Thank you,
Daniel

Daniel Berg | Senior Biologist / Project Manager
Direct **(805) 681-7274** | Cell **(805) 705-1421**
Tetra Tech | Complex World, Clear Solutions™
5383 Hollister Avenue, Suite 130 | Santa Barbara, CA 93111

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From: Lee, Libby@Waterboards <Libby.Lee@Waterboards.ca.gov>
Sent: Thursday, October 16, 2025 1:20 PM
To: Berg, Daniel <Daniel.Berg@tetratech.com>
Cc: WB-RB4-401Certification <RB4-401Certification@Waterboards.ca.gov>; Tammy Takigawa <tammy.takigawa@longbeach.gov>; McKinnon, Mary <Mary.McKinnon@tetratech.com>
Subject: RE: File No. 25-108 Skylinks Regional Stormwater Capture Project - Request for Information

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Hi Daniel,

Thank you for the additional details. What kind of equipment will be used inside the channel to cut out the space for the pipe?

Best,
Libby

Libby Lee
Engineering Geologist

R4 LOS ANGELES
Email: libby.lee@waterboards.ca.gov

Regional Water Quality Control Boards
Website: www.waterboards.ca.gov

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From: Berg, Daniel <Daniel.Berg@tetratech.com>
Sent: Thursday, October 16, 2025 1:18 PM
To: Lee, Libby@Waterboards <Libby.Lee@Waterboards.ca.gov>
Cc: WB-RB4-401Certification <RB4-401Certification@Waterboards.ca.gov>; Tammy Takigawa <tammy.takigawa@longbeach.gov>; McKinnon, Mary <Mary.McKinnon@tetratech.com>
Subject: RE: File No. 25-108 Skylinks Regional Stormwater Capture Project - Request for Information

Hi Libby,

The outlet will be cut from inside the channel with a netting below to catch all debris. The channel should not have enough water in it to require a boom.

Thank you,
Daniel

Daniel Berg | Senior Biologist / Project Manager
Direct **(805) 681-7274** | Cell **(805) 705-1421**
Tetra Tech | Complex World, Clear Solutions™
5383 Hollister Avenue, Suite 130 | Santa Barbara, CA 93111

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From: Lee, Libby@Waterboards <Libby.Lee@Waterboards.ca.gov>
Sent: Thursday, October 16, 2025 12:19 PM
To: Berg, Daniel <Daniel.Berg@tetratech.com>
Cc: WB-RB4-401Certification <RB4-401Certification@Waterboards.ca.gov>; Tammy Takigawa <tammy.takigawa@longbeach.gov>; McKinnon, Mary <Mary.McKinnon@tetratech.com>
Subject: RE: File No. 25-108 Skylinks Regional Stormwater Capture Project - Request for Information

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Hello Daniel,

Will the 18” outlet pipe be cut from inside the channel? Or will all construction operations occur/staged outside of the channel?
Will the debris capture be a physical barrier like a floating boom or netting system?

Thank you,
Libby

CALIFORNIA Water Boards

Libby Lee
Engineering Geologist

R4 LOS ANGELES
Email: libby.lee@waterboards.ca.gov

Regional Water Quality Control Boards
Website: www.waterboards.ca.gov

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From: Berg, Daniel <Daniel.Berg@tetratech.com>
Sent: Thursday, October 16, 2025 11:33 AM
To: Lee, Libby@Waterboards <Libby.Lee@Waterboards.ca.gov>
Cc: WB-RB4-401Certification <RB4-401Certification@Waterboards.ca.gov>; Tammy Takigawa <tammy.takigawa@longbeach.gov>; McKinnon, Mary <Mary.McKinnon@tetratech.com>
Subject: RE: File No. 25-108 Skylinks Regional Stormwater Capture Project - Request for Information

Hi Libby,

Please see responses below in blue. Let us know if you need anything else.

Thank you,
Daniel

Daniel Berg | Senior Biologist / Project Manager
Direct **(805) 681-7274** | Cell **(805) 705-1421**
Tetra Tech | Complex World, Clear Solutions™
5383 Hollister Avenue, Suite 130 | Santa Barbara, CA 93111

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From: Lee, Libby@Waterboards <Libby.Lee@Waterboards.ca.gov>
Sent: Monday, October 13, 2025 12:40 PM
To: Berg, Daniel <Daniel.Berg@tetratech.com>
Cc: WB-RB4-401Certification <RB4-401Certification@Waterboards.ca.gov>; Tammy Takigawa <tammy.takigawa@longbeach.gov>; McKinnon, Mary <Mary.McKinnon@tetratech.com>
Subject: RE: File No. 25-108 Skylinks Regional Stormwater Capture Project - Request for Information

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Hello Daniel,

Thank you for your response. I have a few more follow up questions.

1) Based on your response below regarding the boundary of the diversion for a dry work area, please confirm that you will construct a temporary water diversion over the same 0.2 acre area you propose permanent impacts. Please provide a narrative description of the temporary water diversion and include that the temporary impact will be restored to pre-impact conditions. The channel diversion will be constructed during the dry, summer weather and will be within the same 0.02 acre permanent impact area. Small coffer dams will be installed to prevent any flow into the construction site, with a low flow diversion to route any potential water around the work site during construction. The diversion will be removed after construction to pre-impact conditions.

2) Please confirm that 0.2 acres of the Wardlow stream will be re-graded. The 0.02 acres of Wardlow Channel will be re-graded to meet the existing channel upstream and downstream of the diversion. The channel floor will be warped to drain towards the outlet into the pre-treatment device to remove sediment, debris, and trash.

3) Please provide a description of the construction of the outlet. Will BMPs such as water diversion, debris capture, or fencing be used to prevent discharge of concrete or other construction materials into the stream channel? If so, please document this area as temporary impacts. An 18" reinforced concrete pipe (RCP) section will be cut into the channel wall for the flex valve. Debris capture will be utilized to prevent concrete and debris from entering the channel while the wall is being cut.

Best,
Libby

CALIFORNIA Water Boards

Libby Lee
Engineering Geologist

R4 LOS ANGELES
Email: libby.lee@waterboards.ca.gov

Regional Water Quality Control Boards
Website: www.waterboards.ca.gov

Follow: X | YouTube | Facebook | LinkedIn

From: Berg, Daniel <Daniel.Berg@tetratech.com>
Sent: Tuesday, October 7, 2025 8:20 AM
To: Lee, Libby@Waterboards <Libby.Lee@Waterboards.ca.gov>
Cc: WB-RB4-401Certification <RB4-401Certification@Waterboards.ca.gov>; Tammy Takigawa <tammy.takigawa@longbeach.gov>; McKinnon, Mary <Mary.McKinnon@tetratech.com>
Subject: RE: File No. 25-108 Skylinks Regional Stormwater Capture Project - Request for Information

Hello Libby,

Yes, the 0.02 acres of delineated permanent impacts is comprehensive for all impacts within the channel (including the work needed to create the outlet for the treated water back into the channel).

Although irrigation water source was preliminarily included as a secondary objective, it is no longer being considered. The diverted water will NOT be used for irrigation at Skylinks Golf Course. Please see our response for bullet #2 in blue below for the outcome of diverted water.

Let us know if you need anything else.

Thanks,
Daniel

Daniel Berg | Senior Biologist / Project Manager
Direct **(805) 681-7274** | Cell **(805) 705-1421**
Tetra Tech | Complex World, Clear Solutions™
5383 Hollister Avenue, Suite 130 | Santa Barbara, CA 93111

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From: Lee, Libby@Waterboards <Libby.Lee@Waterboards.ca.gov>
Sent: Monday, October 6, 2025 4:29 PM
To: Berg, Daniel <Daniel.Berg@tetratech.com>
Cc: WB-RB4-401Certification <RB4-401Certification@Waterboards.ca.gov>; Tammy Takigawa <tammy.takigawa@longbeach.gov>; McKinnon, Mary <Mary.McKinnon@tetratech.com>
Subject: RE: File No. 25-108 Skylinks Regional Stormwater Capture Project - Request for Information

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Hello Daniel,

Can you confirm that the 0.02 ac of delineated permanent impacts also includes the work needed to create the outlet for the treated water (water from storage pond or basin) back into the Wardlow Channel?

Additionally, in the Skylinks NOI Packet project description, it is mentioned that “secondary objectives are to: offset potable water demand at the Skylinks Golf Course (secondary irrigation water source)”. Can you clarify what this means? How is the decision made to use the water for the secondary purpose rather than returning it to the channel?

Thanks,
Libby

CALIFORNIA Water Boards

Libby Lee
Engineering Geologist

R4 LOS ANGELES
Email: libby.lee@waterboards.ca.gov

Regional Water Quality Control Boards
Website: www.waterboards.ca.gov

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From: Berg, Daniel <Daniel.Berg@tetratech.com>
Sent: Monday, October 6, 2025 12:26 PM
To: Lee, Libby@Waterboards <Libby.Lee@Waterboards.ca.gov>
Cc: WB-RB4-401Certification <RB4-401Certification@Waterboards.ca.gov>; Tammy Takigawa <tammy.takigawa@longbeach.gov>; McKinnon, Mary <Mary.McKinnon@tetratech.com>
Subject: RE: File No. 25-108 Skylinks Regional Stormwater Capture Project - Request for Information

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Hello Libby,

Thank you for your review. Please see our responses to your questions below and the attached figure.

Let us know if you need anything else to process this.

Thank you,
Daniel

Daniel Berg | Senior Biologist / Project Manager
Direct **(805) 681-7274** | Cell **(805) 705-1421**
Tetra Tech | Complex World, Clear Solutions™
5383 Hollister Avenue, Suite 130 | Santa Barbara, CA 93111

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From: Lee, Libby@Waterboards <Libby.Lee@Waterboards.ca.gov>
Sent: Thursday, September 25, 2025 4:40 PM
To: Berg, Daniel <Daniel.Berg@tetratech.com>
Cc: WB-RB4-401Certification <RB4-401Certification@Waterboards.ca.gov>; Tammy Takigawa <tammy.takigawa@longbeach.gov>; McKinnon, Mary <mary.mckinnon@tetratech.com>
Subject: File No. 25-108 Skylinks Regional Stormwater Capture Project - Request for Information

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Hello Mr. Berg,

The Skylinks Regional Stormwater Capture Project has been assigned to me and assigned to File No. 25-108. An initial review of the project's General WDR application has been completed, and the following items are missing:

- An impact area map (temporary and permanent areas and their acreage should be clearly identified). See attached figure, the Project will permanently impact 0.02 acres of Waters of the State, no temporary impacts to Waters of the State will occur.
    - Please show the Waters of the State in relation to:
        - A delineation of where 0.2 acres of permanent impact noted in the application is located. This is shown in the attached figure (0.02 acres).
        - Travel path of equipment in the channel. The equipment will be lifted down into the channel because there are no ramps that go down to the invert, it will not be traveling up and down the channel.

    - Diversion within the channel during construction to prepare a dry work area. This is shown in the attached figure, the boundary of the diversion is the same as the permanent impact boundary.
    - Staging area. These are shown in the attached figure, all are located within upland areas.
- Please explain under what circumstances will the diverted water be used for irrigation of the golf course? What does secondary purpose mean? What volume of water would be used? When is the decision made to use the water for irrigation rather than returning it to the channel? The diverted water will not be used for irrigation. The water will either: (a) infiltrate through the subsurface system; or (b) be pumped to the vegetated storage pond, treated through a filter system, and then released back into the channel.
- What is the purpose of discharging the water back into the channel? Is it to address the vegetated storage pond overflow? If the infiltration basin reaches its max storage volume of 6 ac-ft, additional runoff will be treated and returned to the channel. If the vegetated pond reaches its max volume of 0.7 ac-ft, it will be diverted directly into the infiltration basin.
- Will all the water be taken from the stream? During dry-weather, the water will be diverted to the system. During wet-weather conditions, the project will intercept about 29% (30 cfs) of the 85th percentile, 24 hour storm volume.
- What is the treatment capacity? Is there a high flow bypass? The Project is intended to intercept about 30 cfs out of about 104 cfs from Wardlow Channel. If the channel flows are above 30 cfs, they will bypass the system and continue down the channel.
- Is there excavation within the channel? Yes, within the permanent impact area shown in the attached figure.
- Please provide confirmation of your water rights to the channel. An LA County Flood Control permit will be obtained with a maintenance agreement, and the Project is funded through the County's Measure W stormwater infrastructure program. The flows will be contained within LA County Flood Control channels all the way until the Alamitos Bay. Therefore, water rights should not be an issue.
- Is this project to meet any TMDLs? Yes, metals.
- Has the surrounding residential neighborhood been notified of this project? Have you received any comments? Yes, the City of Long Beach performed two outreach events and advertised the events. During the meeting, the City received verbal comments from residents in support of the Project.

Please provide a response within two weeks. If you require further assistance, please contact by phone 213-576-6705 or by email at libby.lee@waterboards.ca.gov.

Sincerely,

CALIFORNIA Water Boards

Libby Lee
Engineering Geologist

R4 LOS ANGELES
Email: libby.lee@waterboards.ca.gov

Regional Water Quality Control Boards
Website: www.waterboards.ca.gov

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NAD 1983 StatePlane California V FIPS 0405 Feet

0 25 50 100 Feet

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Skylinks

Project Impacts

LOS ANGELES COUNTY, CA

- Project Boundary
- Staging Area
- Waters of the State (Non-Wetland)
- Permanent Impact to RWQCB Waters of the State

This map is for representative purposes only and is not intended for construction use.

TETRA TECH

Reference Map