

## Memorandum

Date: March 6, 2026  
To: Eduardo Pech, PE, City of Manhattan Beach  
From: Curtis Fang, PE, PMP.  
Subject: Manhattan Beach Dominguez Channel Stormwater Infiltration Project  
Feasibility Study Summary Memo  
Project #: CWR0935

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### INTRODUCTION

Geosyntec Consultants (Geosyntec) is contracted by the City of Manhattan Beach (City) to perform the feasibility study of the Manhattan Beach Dominguez Channel Stormwater Infiltration Project (Project). The City has been coordinating with Cities of Manhan Beach, Hermosa Beach, Torrance, and Los Angeles County Flood Control District to prepare and implement the 2024 Beach Cities Watershed Management Program (Beach Cities WMP), supported by an updated Reasonable Assurance Analysis (RAA) modeling effort. According to the Beach Cities WMP implementation strategy, in order to meet stormwater pollutant control objectives for the Dominguez Channel watershed, the City is required to implement stormwater capture projects to address a 24-hour management volume of at least 5.42 acre-feet from the City's drainage area within the DC-MB analysis region (Geosyntec, 2024). These 24-hour management volumes are equivalent to the stormwater runoff from the 90<sup>th</sup> percentile wet day from the City's drainage areas to Dominguez Channel that are not otherwise retained by existing natural or engineered stormwater infrastructures, in addition to the City's 24-hour stormwater management capacity received at the downstream Alondra Park Stormwater Capture Project.

As part of the feasibility study, Geosyntec has completed the following analyses to support developing the preliminary design concept alternatives:

- **Geotechnical Investigation (Geosyntec, 2025a)** – Geosyntec reviewed existing geological, groundwater, and potential geohazard information; performed subsurface explorations, in-situ testing, sampling, and full-scale drywell percolation testing; coordinated geotechnical laboratory testing; and analyzed laboratory testing infiltration testing results to assess the feasibility of a capture and infiltration system via a series of distributed drywells along Parkview Avenue. Based on the findings from the geotechnical investigation, Geosyntec found that while the site may appear generally suitable for stormwater infiltration from a geological and geotechnical perspective, results of the environmental testing suggest that stormwater infiltration through drywells may not be considered feasible due to potential contaminant mobilization risk.
- **Hydrology Analysis (Geosyntec, 2025b)** – Geosyntec performed hydrologic modeling, hydraulic modeling, and best management practice (BMP) performance simulation

modeling to support an alternative design, which proposes to install stormwater detention BMPs and retrofit the existing pond and pump station at the West drift Golf Course. Based on the findings of the hydrology analysis, the proposed storage capacities of the Project BMP are sufficient in detaining stormwater runoff from the 90<sup>th</sup> percentile wet day without bypass (5.42 acre-feet) and meeting the load reduction requirements outlined in the Beach Cities WMP. Geosyntec also found that the proposed retrofitted pump station would require a minimum pumping capacity of 10.7 cfs to drain the Westdrift Golf Course within 75 hours for the 50-year, 24 storm event. The existing pump station has a pumping capacity of 6.7 cfs.

The original Project concept included a series of infiltration drywells installed along Parkview Lane that would divert water from an adjacent storm drain line. However, following the geotechnical and environmental investigation, it was determined that deep infiltration would not be feasible within the Project area due to nearby historical soil and groundwater contamination. The Project instead proposes to install stormwater detention best management practices (BMPs and retrofit the existing pond and pump station at or adjacent to the Westdrift Golf Course (Golf Course). By detaining 5.42 acre-feet of stormwater runoff and releasing them 72 hours after the storm, the City will be able to utilize the downstream Alondra Park Stormwater Capture Park's treatment capacity during dry weather to demonstrate compliance with the Beach Cities WMP RAA.

Geosyntec developed three project alternatives. Each project alternative is described in detail in the section below.

## **ALTERNATIVE 1**

Alternative 1 proposes the construction of two (2) detention tanks with diversions from existing storm drains – one located at the parking lot at the corner of Parkview Ave & Village Dr and another located on the east side of the Golf Course. The detention tank under the parking lot would have a storage volume of 2 acre-feet. It would divert from an existing 39" RCP storm drain and reconnect to an existing City storm drain where runoff would flow towards a retrofitted pump station on the east side of the Golf Course. The detention tank within the Golf Course would have a storage volume of 1 acre-feet. It would divert from an existing 72" RCP storm drain and connect to the same retrofitted pump station. Alternative 1 also includes enhancing an existing lake on the southwest side of the Golf Course. The current storage capacity of this lake is 1.33 acre-feet. After regrading, it will accommodate an additional 1.22 acre-feet, resulting in a total storage capacity of 2.55 acre-feet.

Approximately 24 hours prior to a storm event, the southwest lake will be drained. During the storm event, stormwater will be diverted into the two detention tanks and into the southwest pond from the existing storm drains. Collectively, these three detention features will detain up to 5.42 acre-feet of first flash runoff. Excess stormwater runoff beyond the detention capacity will bypass and flow into the existing pump station at the Golf Course. Approximately 72 hours after the storm event, the control system will be activated to release the detained runoff in the detention features

back to the storm drains, allowing them to reach the pump station. This runoff will eventually be conveyed to the downstream Alondra Park Stormwater Capture Project for treatment and reuse.

See Attachment 1, Exhibit 1 for the site plan for Alternative 1.

## **ALTERNATIVE 2**

Alternative 2 proposes the construction of one (1) detention tank with diversion from an existing storm drain. The detention tank would be built on the east side of the Golf Course with a diversion from an existing 72" Reinforced Concrete Pipe (RCP) storm drain and a storage volume of 3 acre-feet. The detention tank would flow into a retrofitted pump station, which would flow towards a diversion facility downstream. Alternative 2 also includes enhancing the existing water pond on the southwest side of the Golf Course. similar to Alternative 1.

Approximately 24 hours prior to a storm event, the southwest lake will be drained. During the storm event, stormwater will be diverted into the detention tank and into the southwest pond from the existing storm drains. Collectively, these two detention features will detain up to 5.42 acre-feet of first flash runoff. Excess stormwater runoff beyond the detention capacity will bypass and flow into the existing pump station at the Golf Course. Approximately 72 hours after the storm event, the control system will be activated to release the detained runoff in the detention features back to the storm drains, allowing them to reach the pump station. This runoff will eventually be conveyed to the downstream Alondra Park Stormwater Capture Project for treatment and reuse.

See Attachment 1, Exhibit 2 for the site plan for Alternative 2.

## **ALTERNATIVE 3**

Alternative 3 proposes the regrading of an area within the center of Golf Course to create a dry detention pond. This pond would have a cumulative storage volume of 3.43 acre-feet. Alternative 3 also includes enhancing the existing pond on the southwest side of the Golf Course, similar to Alternative 1.

Approximately 24 hours prior to a storm event, the southwest lake will be drained. During the storm event, stormwater will be diverted into the dry weather pond and into the southwest pond from the existing storm drains. Collectively, these two detention features will detain up to 5.42 acre-feet of first flash runoff. Excess stormwater runoff beyond the detention capacity will bypass and flow into the existing pump station at the Golf Course. Approximately 72 hours after the storm event, the control system will be activated to release the detained runoff in the detention features back to the storm drains, allowing them to reach the pump station. This runoff will eventually be conveyed to the downstream Alondra Park Stormwater Capture Project for treatment and reuse.

See Attachment 1, Exhibit 3 for the site plan for Alternative 3.

## ALTERNATIVE COMPARISON

Table 1 provides a qualitative comparison among the three alternatives. All three alternatives can provide 5.42 ac-ft of 24-hour stormwater management capacity and therefore meet the WMP RAA compliance metrics. In addition, all three alternatives include the same pump retrofit configuration to effectively drawdown the standing water in the golf course in less than 72 hours during a 10-year design storm. While quantitative cost opinions have not been developed for the alternatives, the construction and O&M cost can be compared relatively based on the proposed features. Both Alternatives 1 and 2 require significant excavation and concrete work to build the underground detention tank(s), and therefore will be significantly more expensive than alternative 3 to construct. The O&M cost for Alternative 1 will be higher than that for Alternatives 2 and 3 because it has an additional O&M point at the parking lot at the corner of Parkview Ave & Village Dr.

**Table 1. Alternative Comparison**

	<b>WMP Compliance</b>	<b>Flooding Mitigation</b>	<b>Construction Cost</b>	<b>O&amp;M Cost</b>
Alternative 1	✓	✓	\$\$\$	\$\$
Alternative 2	✓	✓	\$\$	\$
Alternative 3	✓	✓	\$	\$

## CONCLUSIONS AND RECOMMENDATIONS

Geosyntec completed a BMP feasibility study for the Manhattan Beach Dominguez Channel Infiltration Project. The study resulted in three alternatives that can provide the required 5.42 acre-feet of 24-hour stormwater management capacity, and therefore demonstrate compliance to the Beach Cities WMP RAA for the Dominguez Channel Watershed.

Based on the study, Geosyntec recommended proceeding with Alternative 3, which consists of regrading an area within the center of Golf Course to create a dry detention pond, and enhance the existing pond on the southwest side of the Golf Course. This alternative represents the most cost competitive option among the three alternatives while meeting both water quality and flood mitigation design criteria.

Per the approved Project scope of work, Geosyntec will proceed with developing a Safe Clean Water (SCW) Program feasibility study to apply for design and construction phase fundings based on the selected alternative in July 2026.

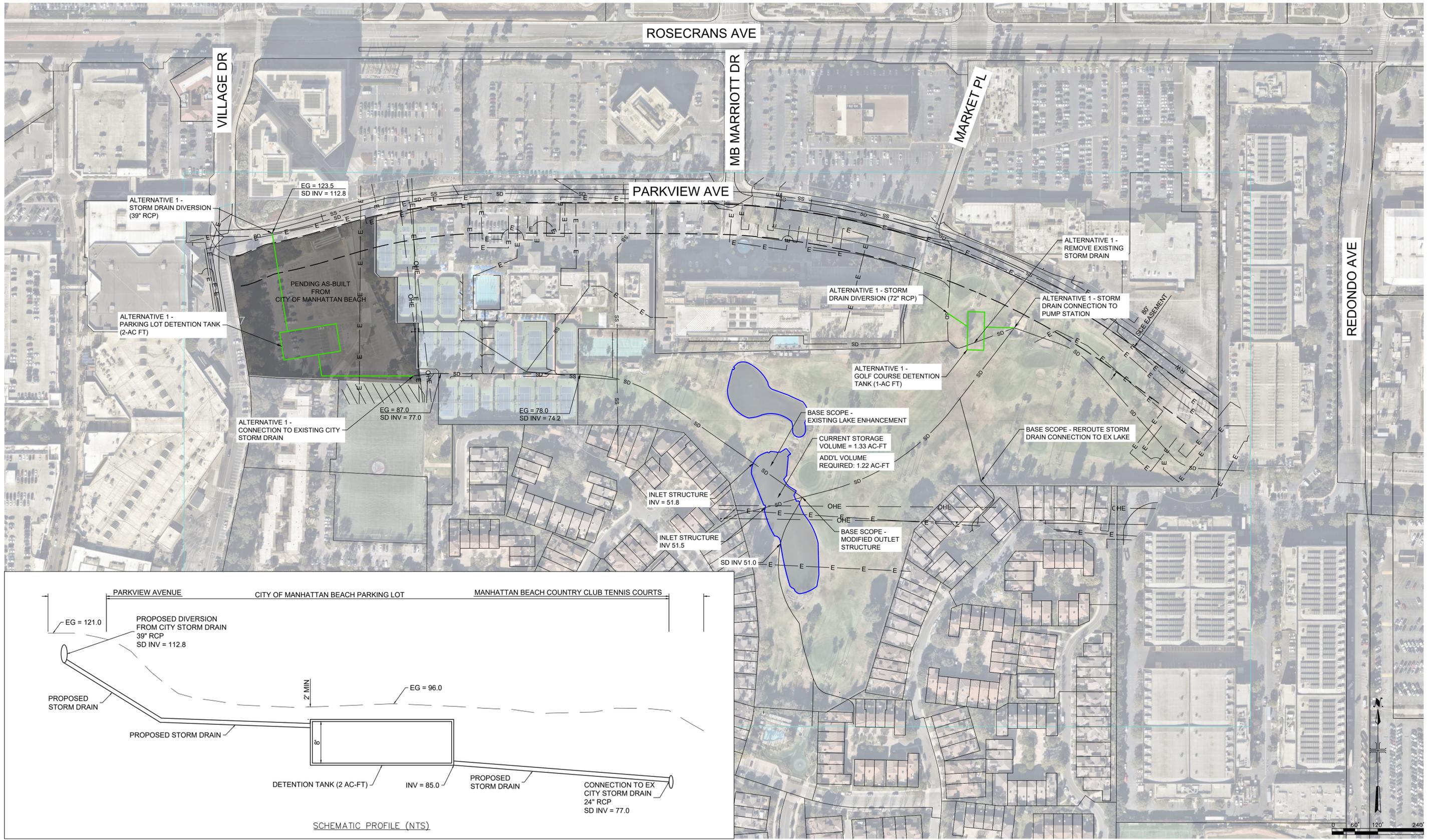
## REFERENCE

Geosyntec, 2024. *Updated Beach Cities Watershed Management Program.*

Geosyntec, 2025a. *Geotechnical Data Report for Manhattan Beach Dominguez Channel Stormwater Infiltration Project*

Geosyntec, 2025b. *Manhattan Beach Dominguez Channel Stormwater Infiltration Project Hydrology Analysis*

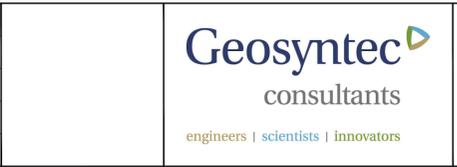
# ATTACHMENT 1 – ALTERNATIVE EXHIBITS



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 March 04, 2025 - 3:03pm Darin, Son

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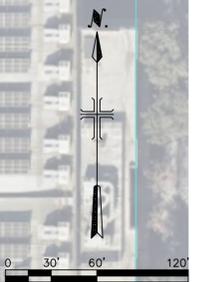
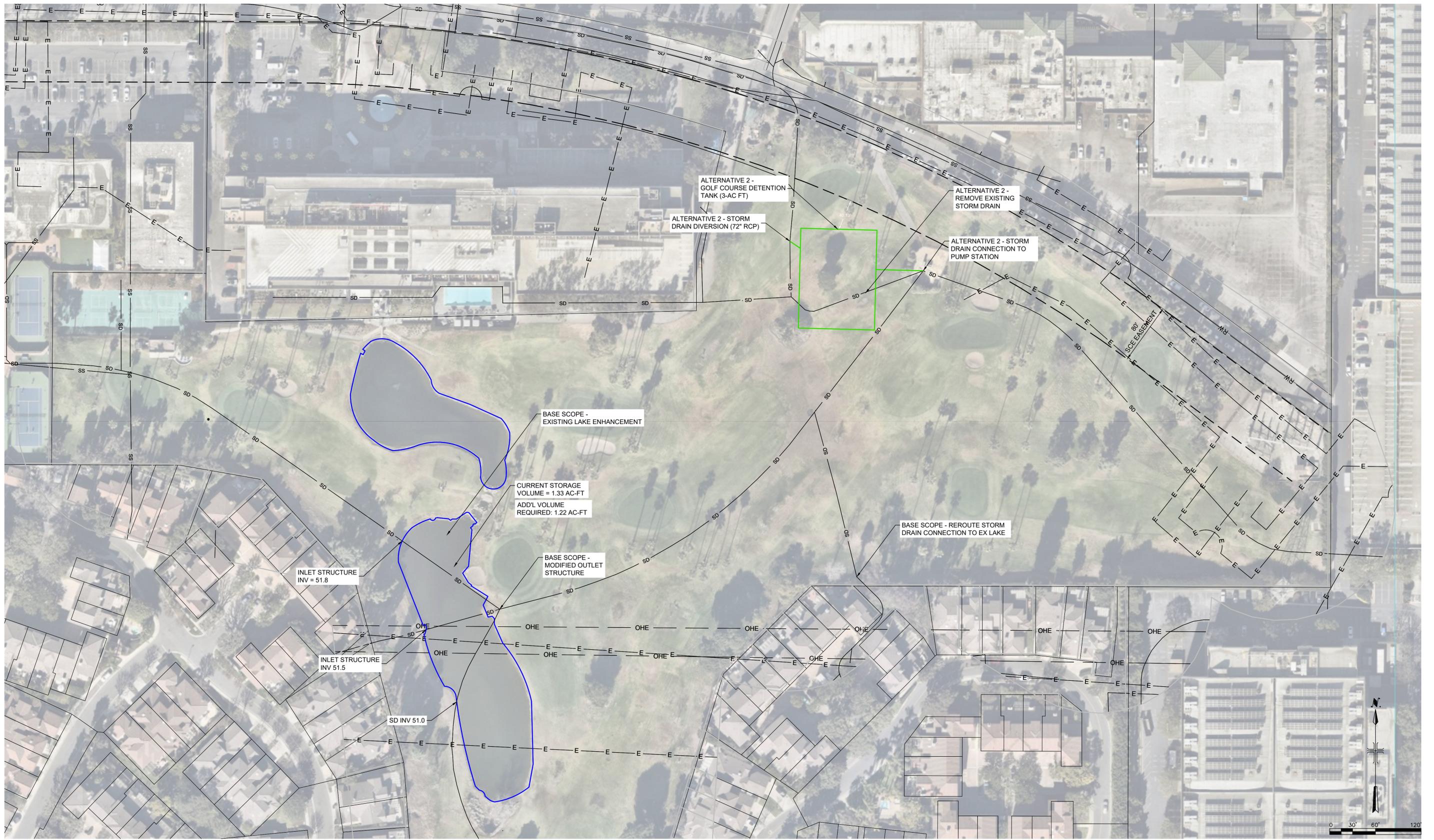
DESIGNED BY	DS
DRAWN BY	JL
CHECKED BY	HB
APPROVED BY	CF
DATE	2/13/2025



MANHATTAN BEACH GOLF COURSE  
 EXHIBIT 1. DISTRIBUTED SOLUTION ALTERNATIVE

JOB NO.	TBD
DRAWING NO.	1
SCALE	1" = 120'
SHEET NO.	1 OF 3

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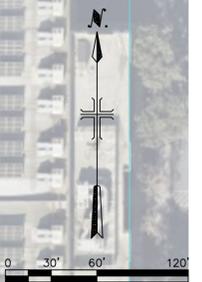
DESIGNED BY	DS
DRAWN BY	JL
CHECKED BY	HB
APPROVED BY	CF
DATE	2/13/2025



MANHATTAN BEACH GOLF COURSE  
 EXHIBIT 2. GOLF COURSE DETENTION SYSTEM

JOB NO.	TBD
DRAWING NO.	1
SCALE	1" = 60'
SHEET NO.	2 OF 3

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REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY	DS
DRAWN BY	JL
CHECKED BY	HB
APPROVED BY	CF
DATE	2/13/2025



MANHATTAN BEACH GOLF COURSE  
 EXHIBIT 3. GOLF COURSE REGRADING

JOB NO.	TBD
DRAWING NO.	1
SCALE	1" = 60'
SHEET NO.	3 OF 3