



Belle Ave & Beverly Road Drainage

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Engineering Department

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May 12th, 2025



Introduction

- There were drainage complaints in the area of Belle Ave/Beatrice Street and Belle Ave/Beverly Road and street flooding was reported during tropical storm Ida in 2021.
- The Township Council and Manager met with residents of the impacted area in second week of October 2021 and initiated a drainage study.
- The study results and recommendations were shared in April 2022 with Residents and township management. Many proposed initiatives were started afterwards.
- An update was provided in September 2024
- There were three recommendations made:
 - Improve the abrupt bend in the piping system at Belle Ave and Beverly Road
 - A 90 thousand gallons detention system in Sagamore Park
 - Build Bioswales on select locations



Improve the Abrupt bend at Belle Ave & Beverly Road

- A 30 thousand gallons, 9 ft x 4 ft culvert was installed at the abrupt bend at Belle Ave and Beverly Road intersection under the sidewalk in February 2023 at the cost of \$500K. This significantly improved the flooding situation
- Carrying capacity of the culvert is 5 times the carrying capacity of the 36" pipe it replaced.
- We do not have reports of any significant flooding since the culvert is installed.



Detention System at Sagamore Park

- A 90K gallons detention system was proposed to be constructed in Sagamore Park
- It will connect to the main drainage pipe at Cumberland Avenue
- Additional inlets and culverts will be constructed to capture surface water flow and feed it into the system
- All feeding pipes will be connected to main culvert via doghouse manholes
- The overflow of the system will be connected to Windsor Road outfall
- The system will connect back to the main drainage pipe between Claremont and Beatrice



Green Infrastructure (Bioswales)

- Green Infrastructure (Bioswales) are being utilized throughout the tri-state area to address drainage issues and reduce cost of running combined sewer operations (CSO)
- Bioswales could be constructed at select locations between route 4 and Sagamore Avenue to capture storm water upstream relieving the impact on Belle Avenue and Beatrice intersection
- Soil testing needs to be done, and ground water level needs to be determined before designing and constructing Bioswales
- There will be up to 10 Bioswales to be constructed each capable of storing 900-1,000 gallon of water

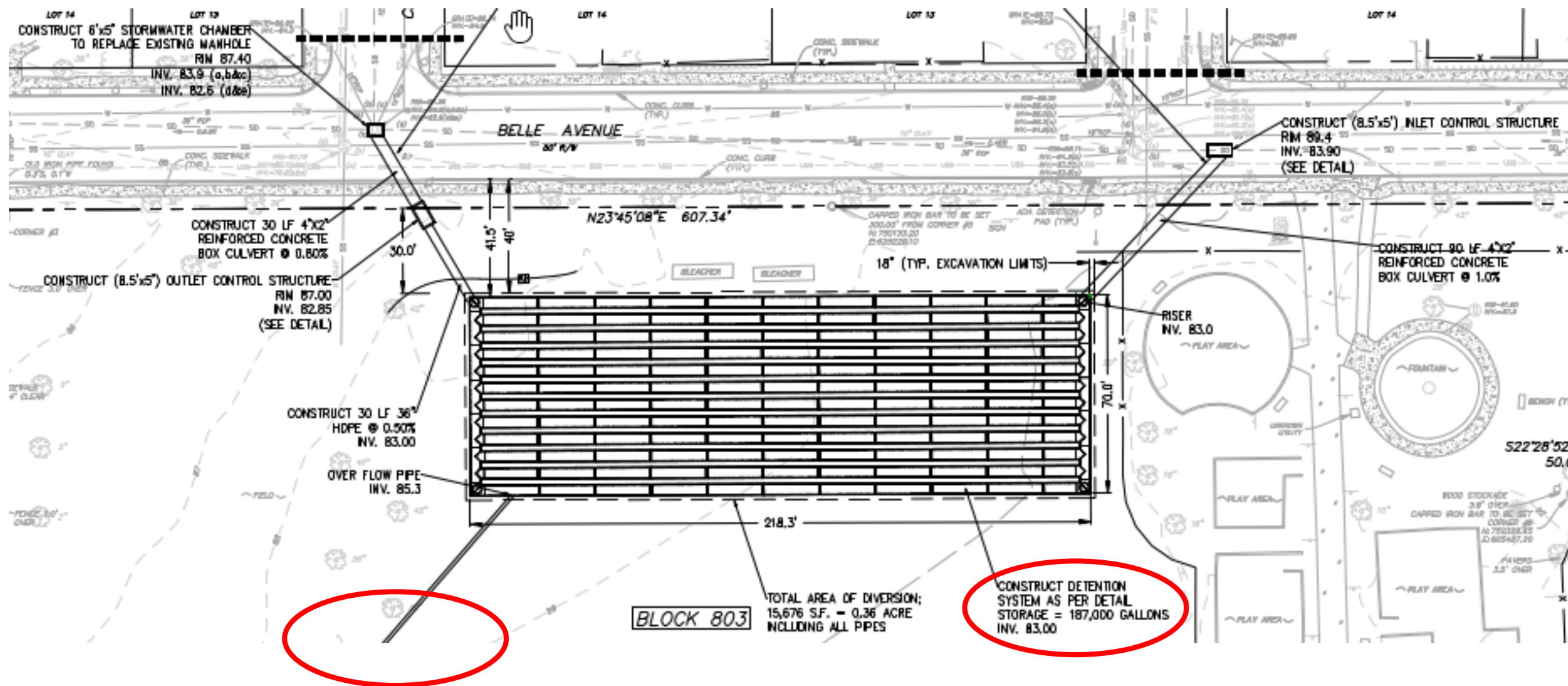


Progress to Date for Sagamore Detention System

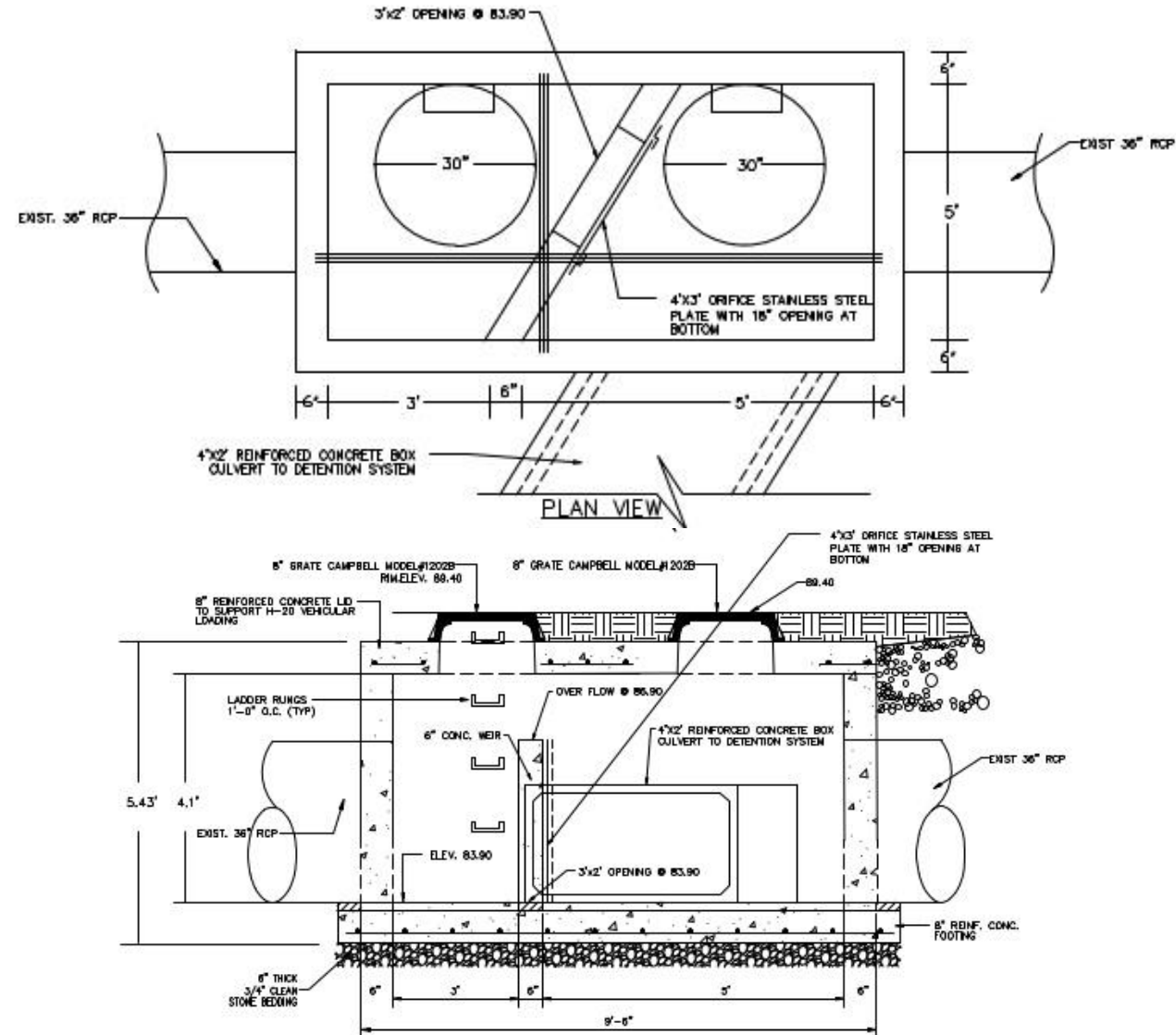
- A minor diversion application was initiated with NJ DEP to install the detention system in Sagamore Park
- Received agreement from Green Acres to accept payment in lieu of replacement land
- Initiated a temporary lease agreement to enable the township to start the construction activity while the diversion application is being processed
- A \$1.06M grant was applied and approved to fund the detention system in Sagamore Park
- A \$280K grant was applied and approved for Bioswales



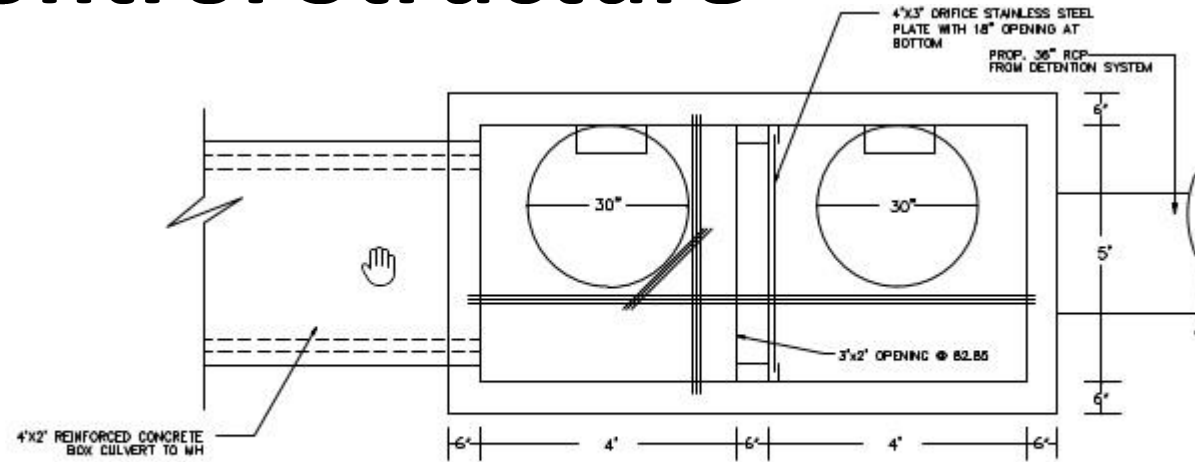
Sagamore Detention System Design



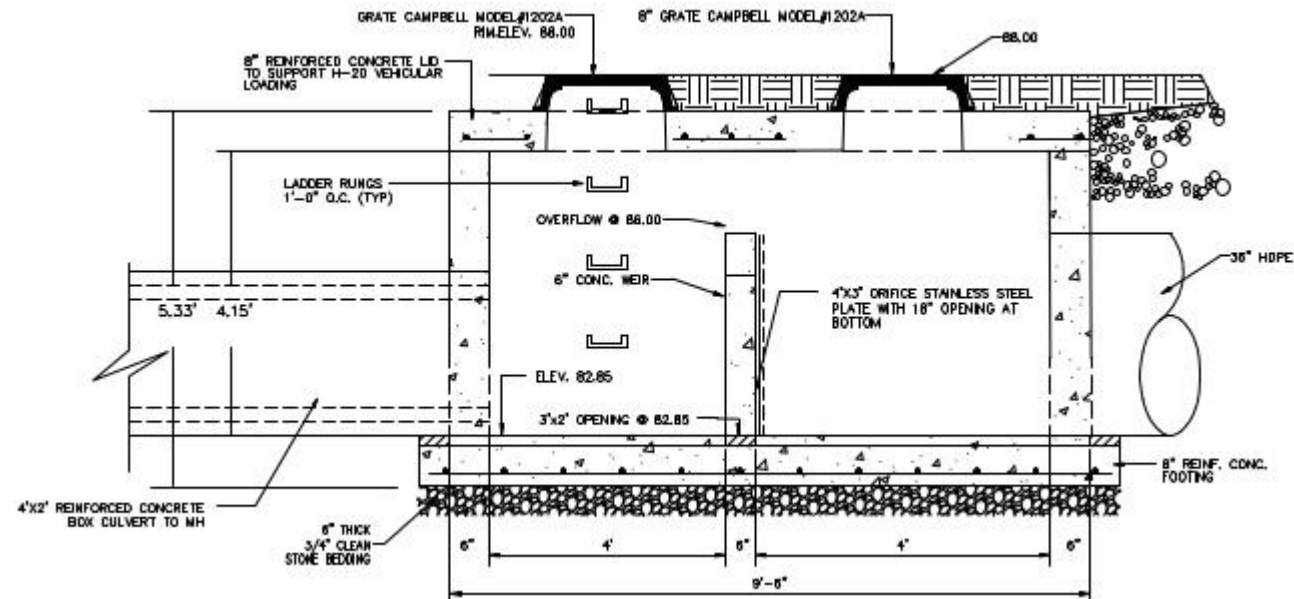
Inlet Control Structure



Outlet Control Structure

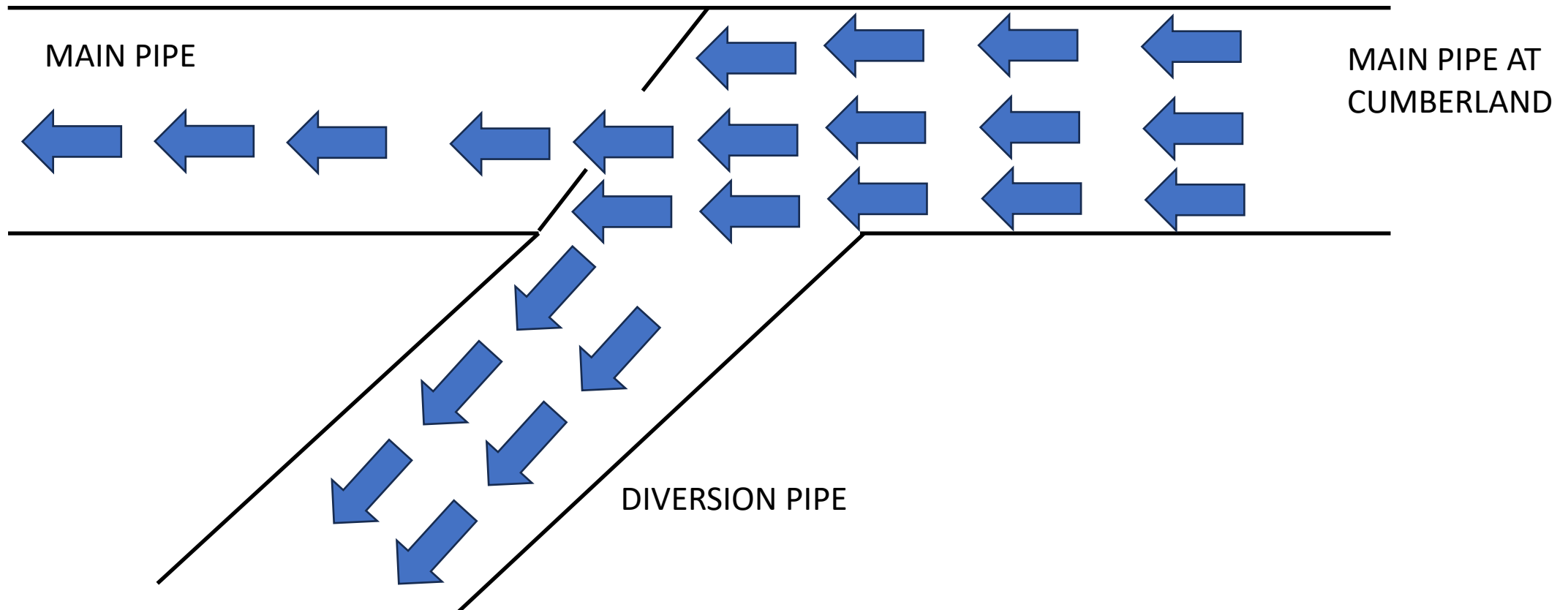


PLAN VIEW

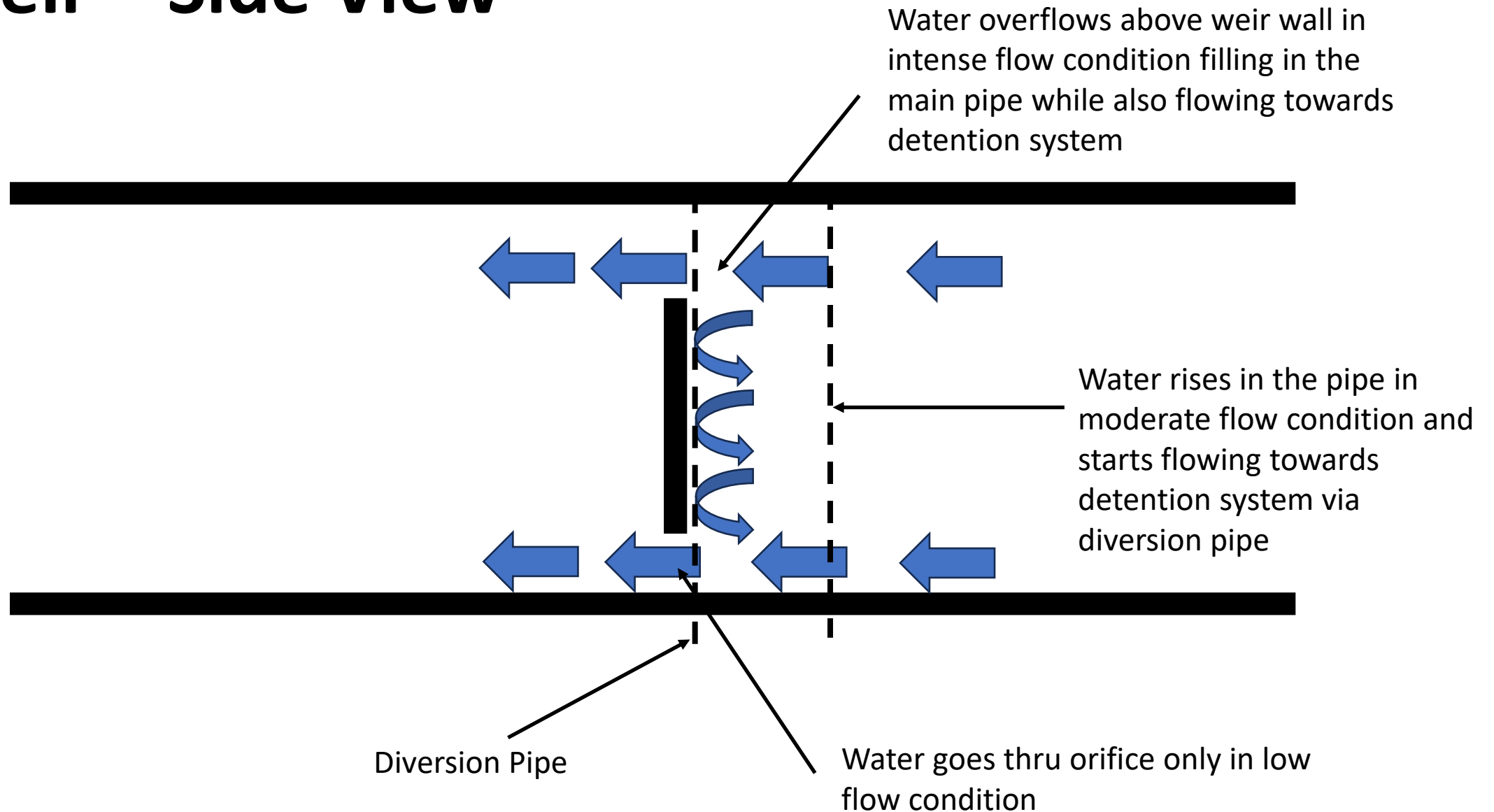




How does a Weir Works

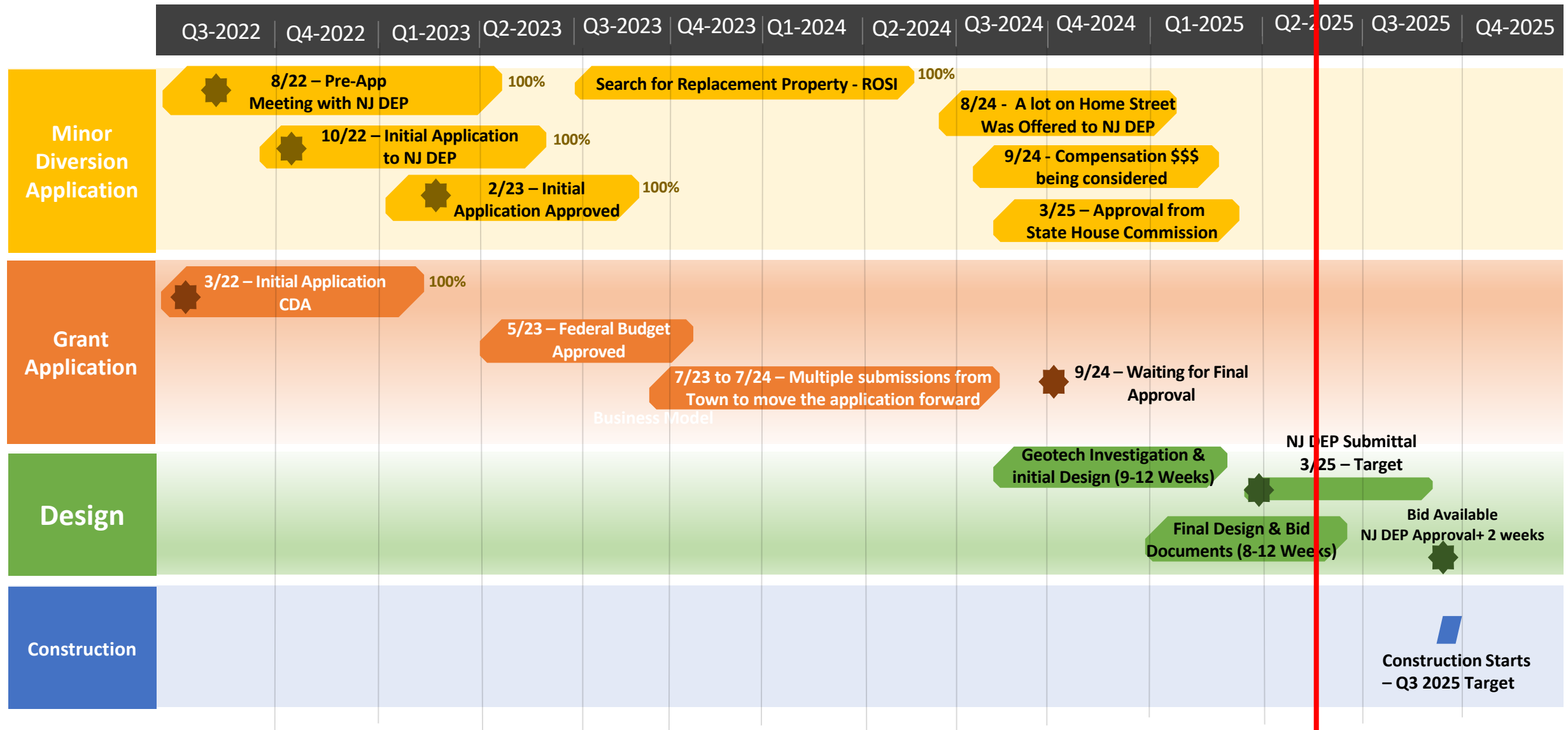


Weir – Side View



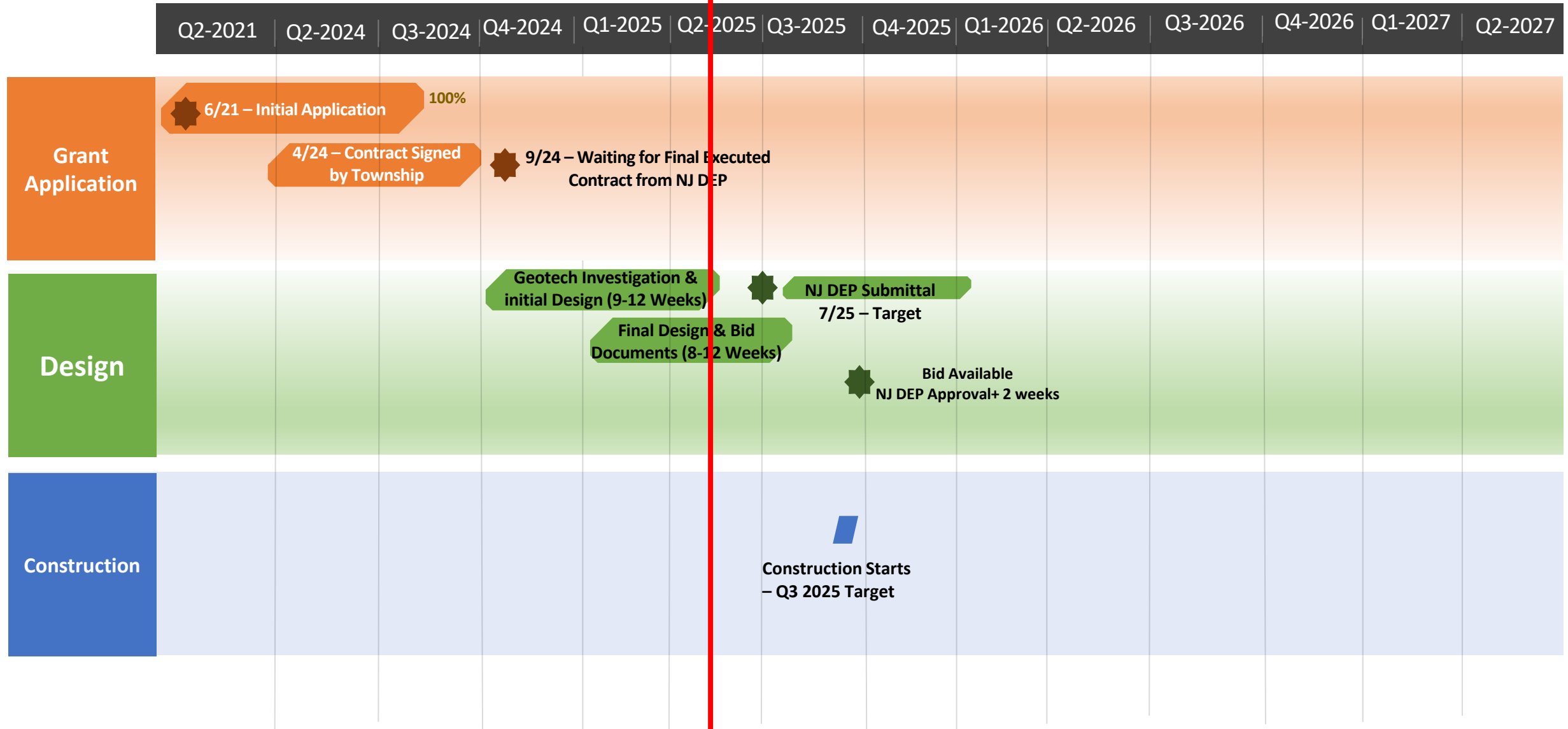
Sagamore Park Detention System

Timelines (Future times are approximate)



Bioswales / Rain Garden

Timelines (Future times are approximate)





BACKUP

NJDEP Green Acres Minor Diversion Permit Details



- Pre application meeting with DEP to discuss the project – 8/2022
- Submitted initial application to DEP – 10/2022
- Initial application was approved with the following condition: – 2/2023
 - Compensation must be in the form of land replacement or a contribution to the Garden State Preservation Trust.
- Township started looking for land replacement options and updated ROSI (Recreation and Open Space Inventory) to find out land availability for replacement
- ROSI was completed in July 2024
- Township offered 100 Home Street to NJ DEP in August 2024
- DEP emailed us list of item needed to be completed for the land replacement which will take another 6 – 12 months
- Township opted for offering \$\$\$ in lieu of land which is accepted by Green Acres and an agreement is reached on the amount to be paid
- Township has gotten into a temporary lease agreement with Green Acres to be able to start the construction activity while the diversion permit is being processed.



Sagamore Park Detention System - Funding

- March 2022: We submitted an initial application to Senator Booker, Senator Menendez, and Representative Gottheimer's offices to be considered for the FY23 round of Congressionally Directed Spending/Community Project Funding.
- May 2023: The FY2023 federal budget was approved, and the Township learned that the project was included as an appropriation from the EPA, and that further instructions would be forthcoming in the coming months.
- July – October 2023: The Township Engineer and EPA worked on the US NEPA Categorical Exclusion (CATEX) documentation.
- October 2023: The EPA contacted the Township to finalize project details.
- December 2023: The Township submitted the required checklist and signed letter requesting an EPA NEPA Categorical Exclusion (CATEX) determination. The Township was also given instructions from the EPA on the next steps to filling out the full work plan application.
- January – May 2024: The grant writers worked with the Township to obtain access to the grant portal to find the required forms and application materials. They then worked with the Township engineers to develop the full work plan and gather all required information and attachments.
- June 2024: The grant writers submitted the full work plan application to the EPA through the grant portal.
- July 2024: The EPA reached out with some application revisions, including revisions to the work plan, submitting a cost share acknowledgement letter, and submitting an updated 4700-4 #CG 96268824 form. All requested revisions were completed, which were approved by the EPA.
- May 2025: Grant agreement is finalized.



Bioswales Timeline

1. Field Survey and Basemap Preparation [Months 1-2] **COMPLETED**
2. Construction and Document Design [Months 2-6] **IN PROGRESS**
3. Advertisement of Notice to Bidders [Months 6-10]
4. Preparation of Bid Recommendation and Award [Months 11-12]
5. Mobilization, Site Clearing, and Demobilization [Months 12-24]
6. Earthwork and Excavation [Months 12-24]
7. Installation of Rain Garden Infrastructure [Months 12-24]
8. Installation of Native Landscape Plantings [Months 12-24]
9. Soil Erosion and Sediment Control Measures [Months 12-24]



THANK YOU

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