

Preliminary Stormwater Management Report
For
Shortcut Farms

October 21, 2025

Prepared for:

Windansea 2 LLC
PO Box 95
Point Harbor, NC. 27964



Prepared By:

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North Carolina License No. C-1027



Shortcut Farms Preliminary Stormwater Management Narrative

October 21, 2025

Existing Conditions: The 51.7 acre tract owned by James & Minnie Barco is located on US-158 (Shortcut Road) in Currituck County. The site is agricultural farmland and adjacent to Airport Ditch and the Great Swamp, which contains East Creek and flows into the North River. The Natural Resource Conservation Service Soil Survey for Currituck County has mapped the soils on the site to consist primarily of Augusta fine sandy loam (At - 45%) and State fine sandy loam (StA - 36%). There are also small amounts of BoJac loamy sand (BoA), Nimmo loamy sand (No), Tomotley fine sand loam (To) and Altavosts fine sandy loam (AaA). The area adjacent to Airport Ditch contains Ponzer muck (Po). The majority of the site is between 6 and 10 feet above sea level, with the eastern and southern edge dropping to a top of ditch elevation of around 3. Most of the property is within a flood zone X, with the lower area adjacent to Airport Ditch being in an AE4 flood zone.

Proposed Development: Windansea2, LLC has an offer to purchase the parcel from James and Minnie Barco and is currently seeking a conditional rezoning from the county to rezone the land as Conditional Single Family Mainland (C-SFM) and Conditional General Business (C-GB). The 44.4 acre portion that would be in the C-SFM district is planned to be developed as a Conservation Subdivision with 33 lots (average size of near 28,000 sf) and 42.75% of the land area in conservation. The C-GB district will provide 2 lots along US-158, each of approximately 3.5 acres. These lots are anticipated to be developed independently. The project includes roads, waterlines, drainage and community amenities such as a walking trails and a pavilion area.

Stormwater Management: Runoff from the C-SFM Conservation Subdivision will be managed through opens swales along the roadside and in perimeter buffers along rear property lines. Shallow swales will be located along side property lines. The swales will convey runoff to two ponds that will restrict peak runoff from the 10-year, 24 hour rainfall event (6") to the predeveloped 2-year, 24-hour rainfall event (4") runoff rate in a wooded condition as required by the County Stormwater Manual.

A preliminary analysis of the conceptual plan indicates that the ponds are capable of exceeding the County requirements. This analysis was prepared using Hydroflow Hydrographs using the TR-55 hydrological analysis with the post developed C-SFM maximum allowable lot coverage of 30% plus conservation easements and right-of-way improvements in combination with the conceptual drainage routing plan. The

drainage area consists of Augusta (hydrologic group C) and State (hydrologic group A) soils. The net coverage in the SFM is about 18% when taking into account the conservation areas, yielding a Curve Number of 79 and 68 for group C & B soils respectively. This was compared to the predeveloped (no coverage) condition but accounting for the land in a wooded condition, the modeling utilized a Curve Number of 73 and 60 for group C & B soils respectively.

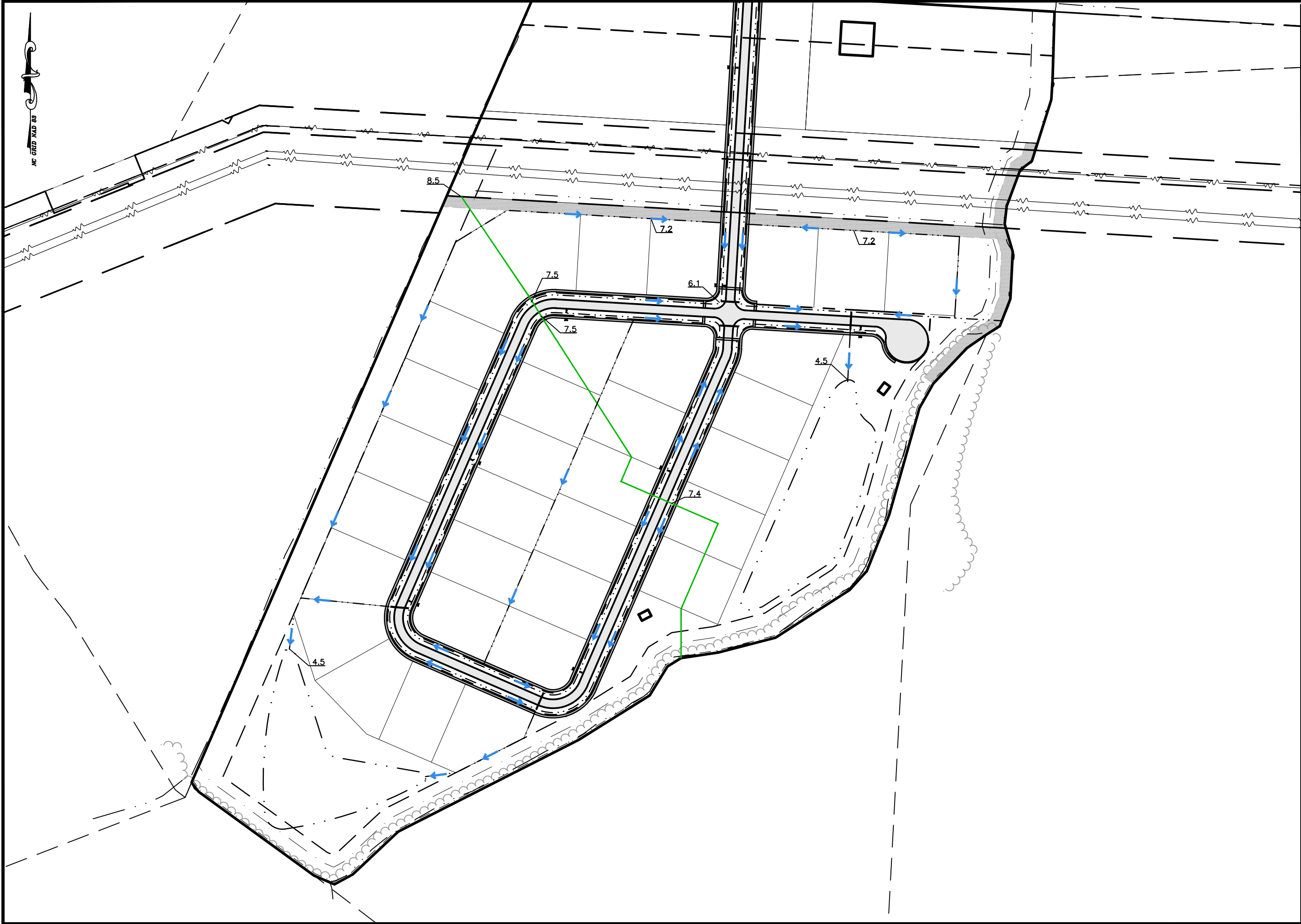
The predeveloped peak runoff rate for the 24 acre drainage area that would be draining into the eastern pond (mostly group C soils) for a 2-year, 24 hour rainfall was estimated to be 14.3 cfs. The postdeveloped peak runoff rate for the 24 acre conceptual drainage area draining into the eastern pond for a 10-year, 24-hour rainfall was estimated to be 22.5 cfs. However, with the storage volume in eastern pond and the controlled release rate from a control structure, the release rate is estimated to be 4.4 cfs, or about 30% of the predeveloped / wooded condition.

Likewise, the predeveloped peak runoff rate for the 22.1 acre drainage area that would be draining into the southern pond (mostly group B soils) for a 2-year, 24 hour rainfall was estimated to be 7.1 cfs. The postdeveloped peak runoff rate for the 22.1 acre conceptual drainage area draining into the southern pond for a 10-year, 24-hour rainfall was estimated to be 16.0 cfs. However, with the storage volume in eastern pond and the controlled release rate from a control structure, the release rate is also estimated to be 4.2 cfs, or about 60% of the predeveloped / wooded condition. With additional freeboard available, the proposed ponds will be able to handle much larger rainfall events as well.

It is noted that these calculations are preliminary as they are based upon a conceptual routing plan and will be updated once permitting/construction drawings are being prepared during the preliminary plat phase. Included within this report are:

- Conceptual drainage plan
- Predeveloped hydrographs for the 2-yr, 24-hour rainfall event (wooded condition) for the area anticipated to drain to the eastern pond
- Post developed hydrographs for the 10-yr, 24-hour rainfall event for the area anticipated to drain to the eastern pond
- Post developed hydrographs for the 10-yr, 24-hour rainfall event for eastern pond discharge
- Predeveloped hydrographs for the 2-yr, 24-hour rainfall event (wooded condition) for the area anticipated to drain to the southern pond
- Post developed hydrographs for the 10-yr, 24-hour rainfall event for the area anticipated to drain to the southern pond
- Post developed hydrographs for the 10-yr, 24-hour rainfall event for southern pond discharge

K:\Active Projects\08879 - 51.7 Acres on Shortcut Road, Barco\Cadd Files\08879A-1 - Lot layout.dwg, 10/22/2025 10:41:23 AM, Albemarle & Associates, Ltd. C-1027



NC GRID NAD 83

DATE: 10/22/2025		SURVEYED: N/A		DESIGNED: MJM		DRAWN: KCA		CHECKED: MJM		FILE: 08879A	
SCALE: 1" = 200'		SHEET: C301		08879A							

CONCEPTUAL DRAINAGE PLAN

SHORTCUT FARMS

51.7 ACRE BARCO TRACT ON SHORTCUT ROAD

BARCO CRAWFORD TOWNSHIP CURRITUCK COUNTY NORTH CAROLINA

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Albemarle & ASSOCIATES, LTD.

Engineering - Environmental - Land Planning

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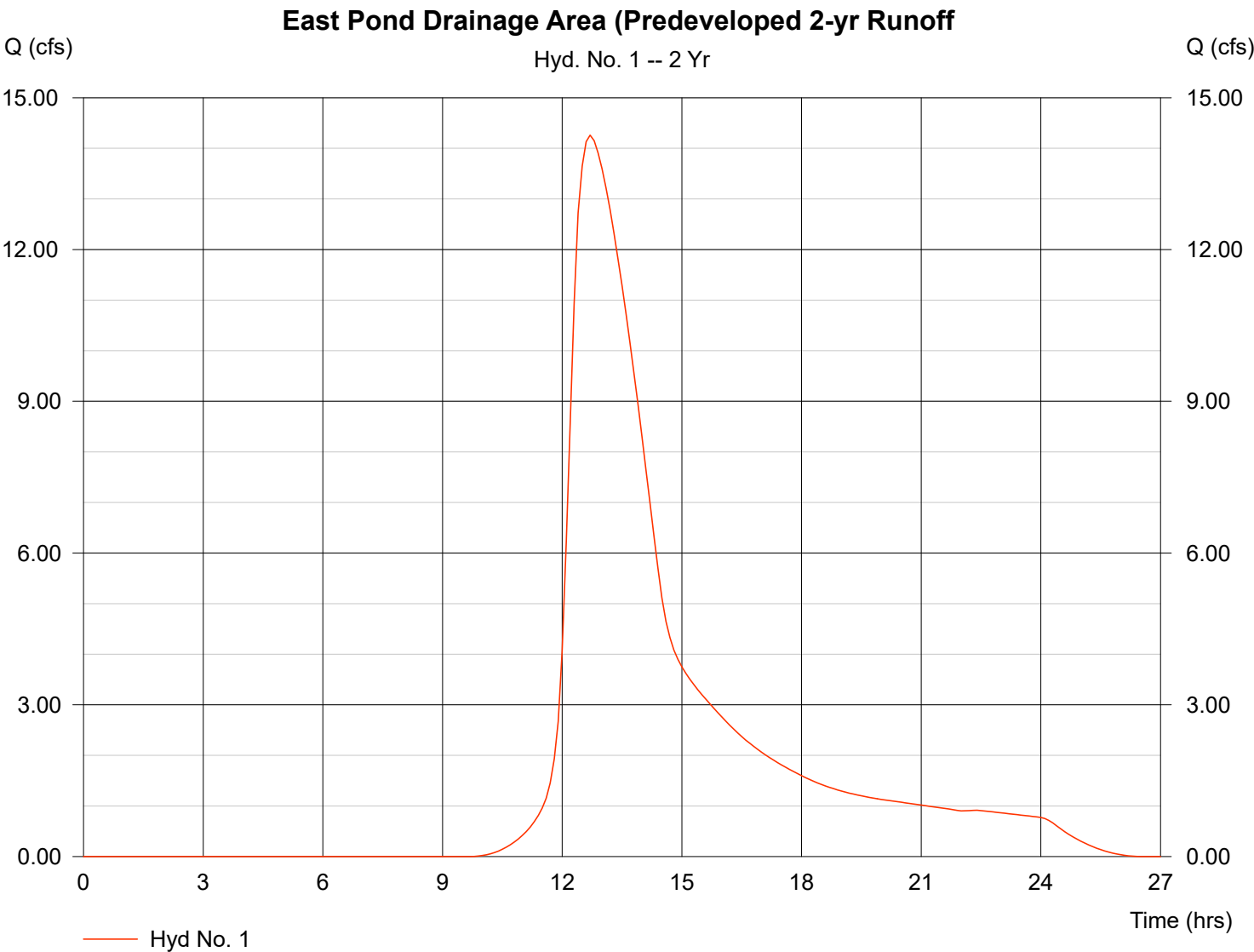
Hydrograph Plot

Hyd. No. 1

East Pond Drainage Area (Predeveloped 2-yr Runoff)

Hydrograph type	=	SCS Runoff	Peak discharge	=	14.26 cfs
Storm frequency	=	2 yrs	Time interval	=	6 min
Drainage area	=	24.000 ac	Curve number	=	73
Basin Slope	=	0.8 %	Hydraulic length	=	750 ft
Tc method	=	LAG	Time of conc. (Tc)	=	34.75 min
Total precip.	=	4.40 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	200

Hydrograph Volume = 159,755 cuft



Hydrograph Plot

Hydraflow Hydrographs by Intelisolve

Monday, Oct 20 2025, 2:28 PM

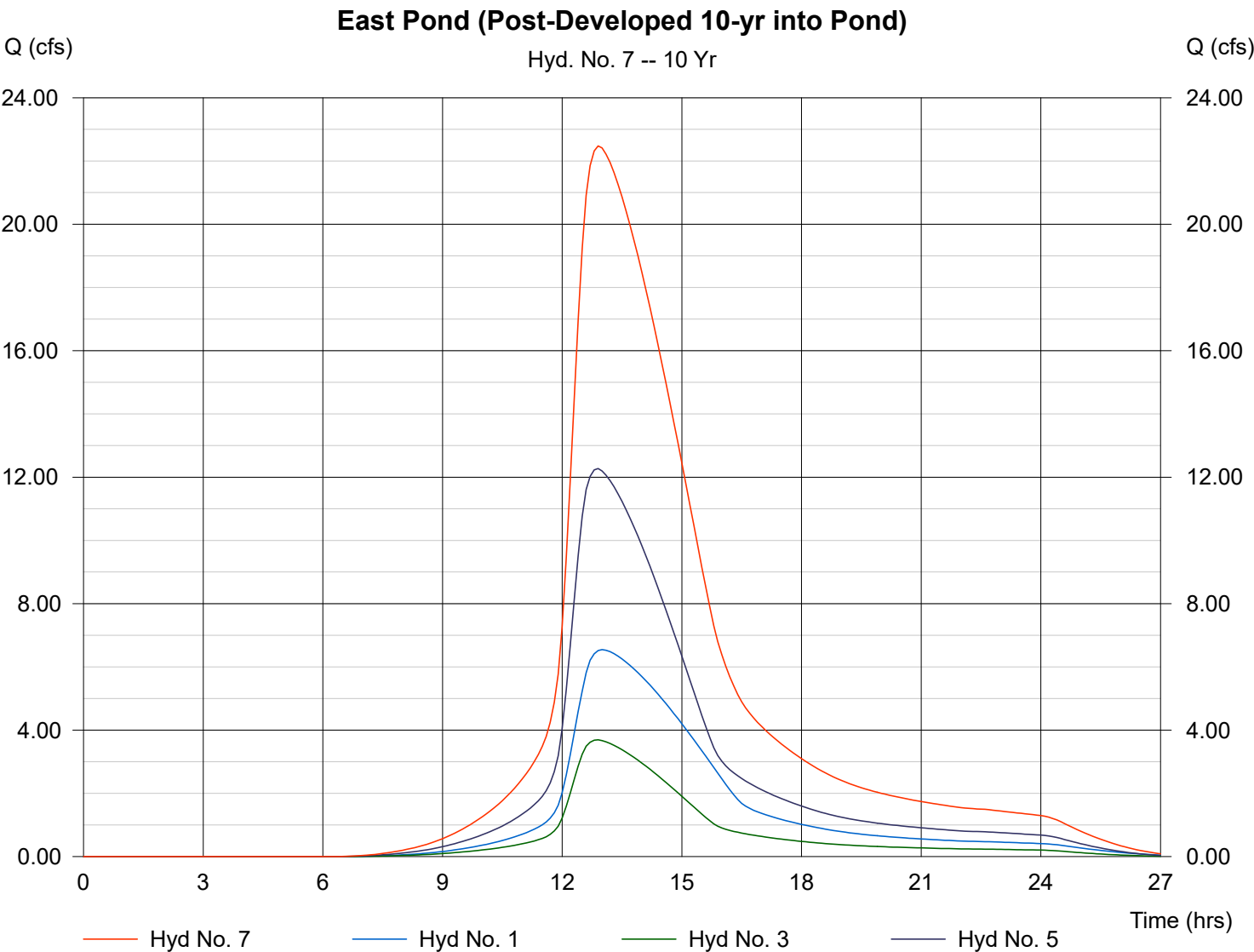
Hyd. No. 7

East Pond (Post-Developed 10-yr into Pond)

Hydrograph type = Combine
Storm frequency = 10 yrs
Inflow hyds. = 1, 3, 5

Peak discharge = 22.48 cfs
Time interval = 6 min

Hydrograph Volume = 330,180 cuft



Hydrograph Plot

Hydraflow Hydrographs by Intelisolve

Tuesday, Oct 21 2025, 11:47 AM

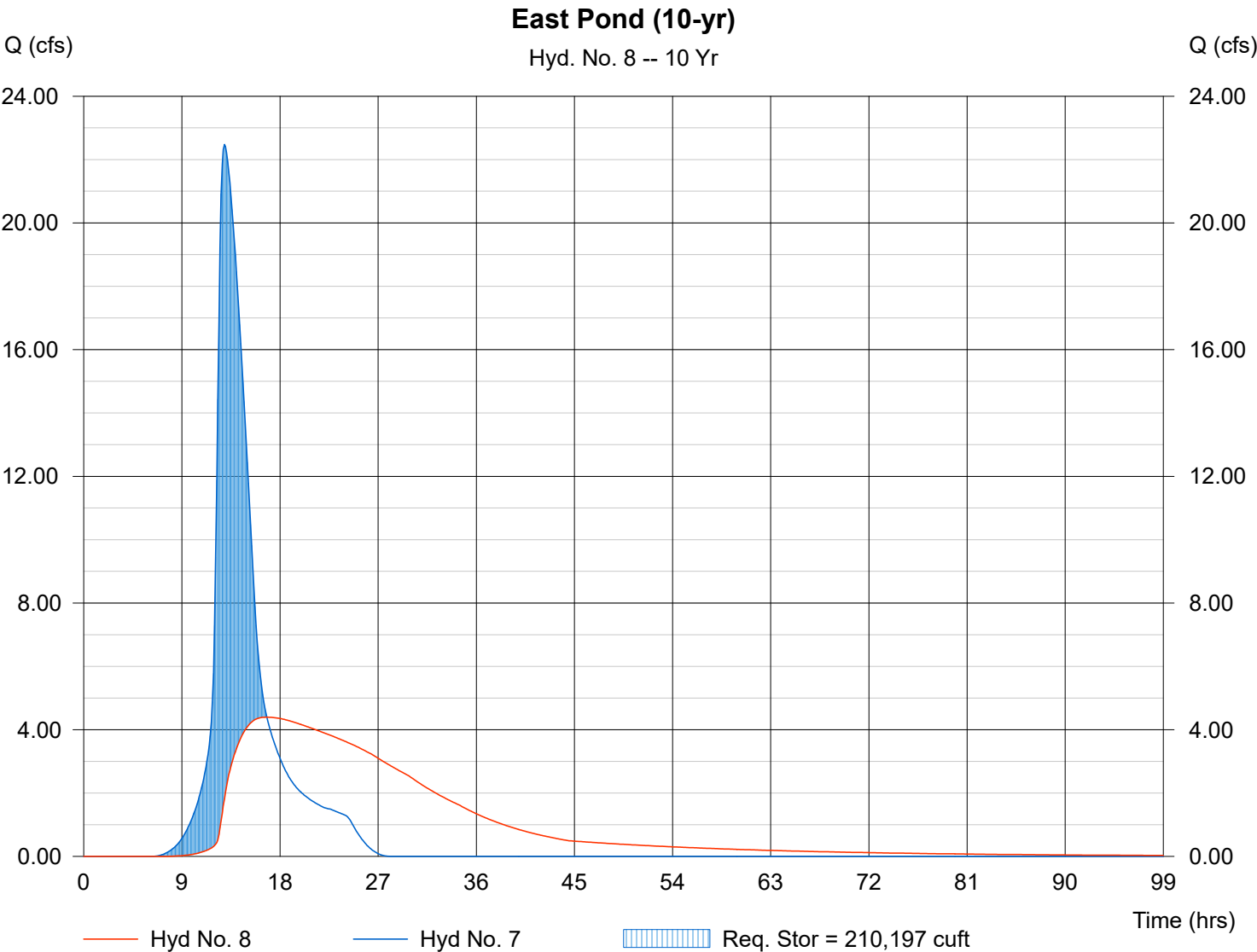
Hyd. No. 8

East Pond (10-yr)

Hydrograph type	= Reservoir	Peak discharge	= 4.396 cfs
Storm frequency	= 10 yrs	Time interval	= 6 min
Inflow hyd. No.	= 7	Max. Elevation	= 5.95 ft
Reservoir name	= East Pond	Max. Storage	= 210,197 cuft

Storage Indication method used.

Hydrograph Volume = 330,111 cuft



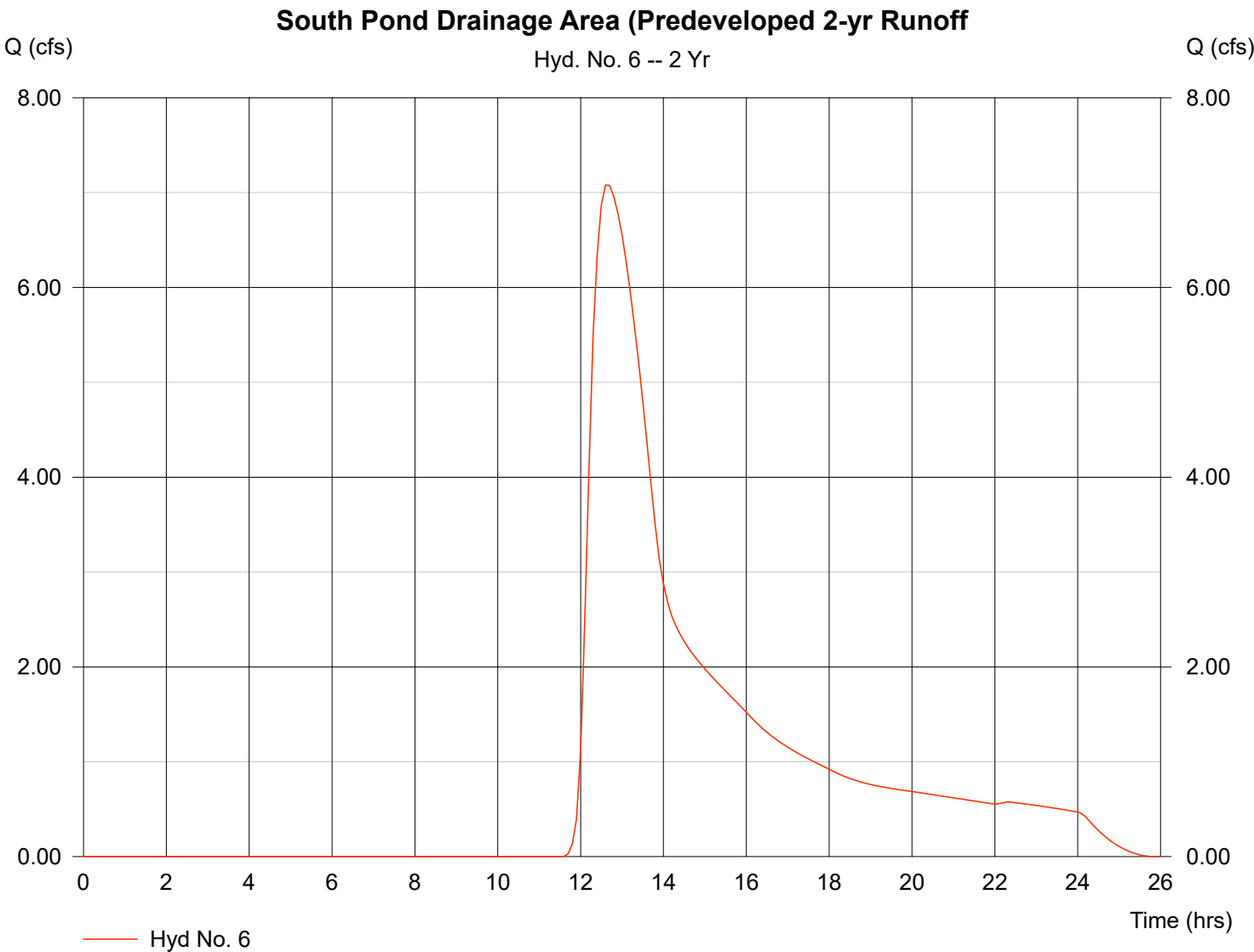
Hydrograph Plot

Hyd. No. 6

South Pond Drainage Area (Predeveloped 2-yr Runoff)

Hydrograph type	=	SCS Runoff	Peak discharge	=	7.079 cfs
Storm frequency	=	2 yrs	Time interval	=	6 min
Drainage area	=	22.110 ac	Curve number	=	60
Basin Slope	=	1.0 %	Hydraulic length	=	460 ft
Tc method	=	LAG	Time of conc. (Tc)	=	29.62 min
Total precip.	=	4.40 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	200

Hydrograph Volume = 76,100 cuft



Hydrograph Plot

Hydraflow Hydrographs by Intelisolve

Monday, Oct 20 2025, 2:33 PM

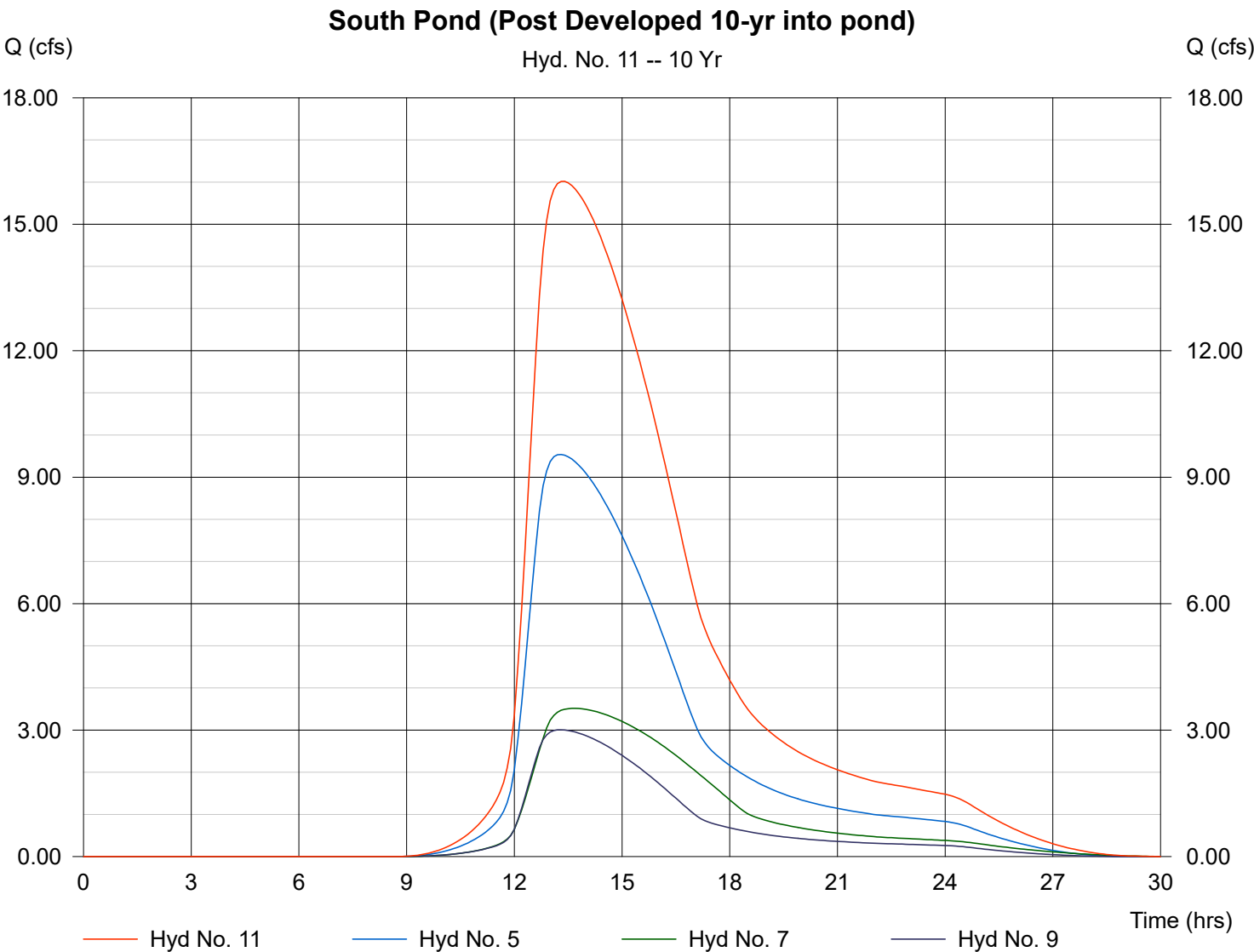
Hyd. No. 11

South Pond (Post Developed 10-yr into pond)

Hydrograph type = Combine
Storm frequency = 10 yrs
Inflow hyds. = 5, 7, 9

Peak discharge = 16.02 cfs
Time interval = 6 min

Hydrograph Volume = 302,052 cuft



Hydrograph Plot

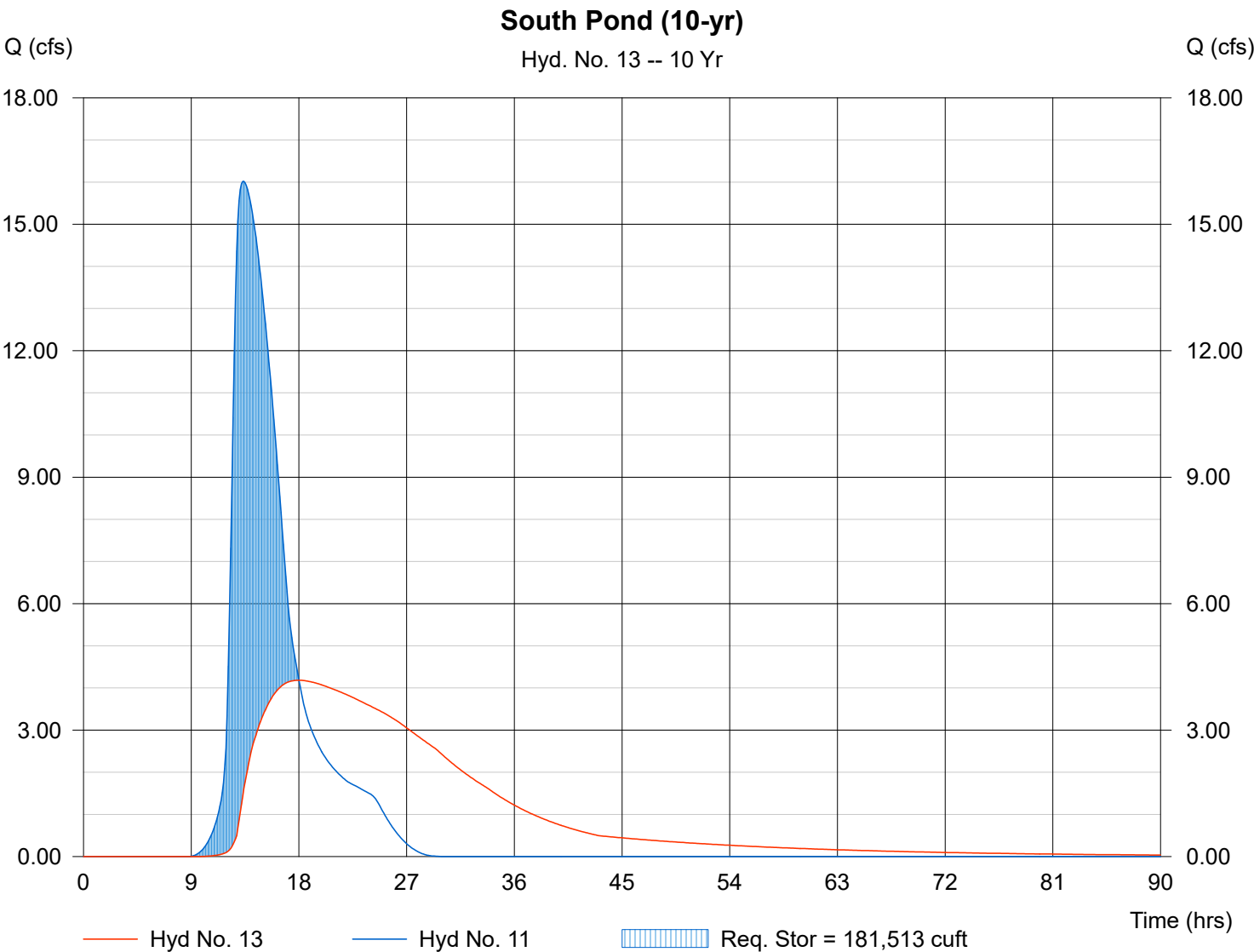
Hyd. No. 13

South Pond (10-yr)

Hydrograph type	= Reservoir	Peak discharge	= 4.183 cfs
Storm frequency	= 10 yrs	Time interval	= 6 min
Inflow hyd. No.	= 11	Max. Elevation	= 5.78 ft
Reservoir name	= South Pond	Max. Storage	= 181,513 cuft

Storage Indication method used.

Hydrograph Volume = 301,989 cuft





October 22, 2025

Currituck County Planning Department
Currituck Historic Courthouse
153 Courthouse Road, Suite 110
Currituck, NC, 27929

ATTN: Jennie Turner, Assistant Planning Director

RE: Conditional Rezoning Application for Barco Tract (Shortcut Farms)

Dear Jennie:

Please find the attached Conditional Rezoning Application and submittal package for Shortcut Farms as proposed on the Barco Tract. Included with this submittal you will find the following items:

- \$657 Review Fee (\$300 sf + \$7 per acre X 52 acres)
- Conditional Rezoning Application
- Project Narrative
- Preliminary Stormwater Management Report
- Community Meeting Minutes
- Plans
 - C101 – Site Analysis Plan (revised 10/22/2025)
 - C102 – Conservation & Development Map (revised 10/22/2025)
 - C103 – Conservation & Development Areas Map (revised 10/22/2025)

We appreciate your assistance with this project and look forward to working with you further. If you have any questions pertaining to this project, please do not hesitate to contact me.

Sincerely,

Michael J. Morway, PE
Engineer

cc: File 08879A, Neal Blinken

**Shortcut Farms
Conditional Rezoning Community Meeting Summary**

Attendees:	Millecent Ott	Currituck County Planning Department
	Jovita Hood	Currituck County Planning Department
	Michael Payment	Currituck County Commissioner
	Robert Jefferies	Adjacent Property Owner (Parcel ID 005300000030000)
	Neal Blinken	WindanSea2 LLC
	Michael Morway, PE	Albemarle & Associates, Ltd

The community meeting opened at 6:00 pm on Wednesday, October 15th. Conceptual plans including 3 drawings were initially laid out for review. Neal opened the meeting with a general description of the project he is proposing on the parcel of which he has an offer to purchase. The proposal includes a 33-lot subdivision with 2 commercial parcels along Shortcut Road. The parcel is within the Airport Overlay District and is also included within the Maple Barco Small Area Plan.

I explained the project status and purpose of the meeting. The project requires a conditional rezoning which is being sought through this process. The plans have been developed in a conceptual format to meet the county zoning requirements under the proposed rezoning, which includes rezoning the parcel from Agriculture to Conditional Single Family Mainland with the 2 commercial parcels to be rezoned as Conditional General Business. The parcel to the west as well as the parcels to the north are currently zoned General Business. There are also adjacent parcels zoned Agriculture as well as Heavy Industrial. The C-SFM is proposed to be developed as a Conservation Subdivision which requires a minimum of 40% of the subdivision land area to be placed in conservation.

The community meeting is required and offers those present to ask questions and voice concerns or other comments regarding the proposed project. The next step is to submit the formal conditional rezoning application, which would then be reviewed through the technical review committee. Once any comments are addressed from that process, the rezoning would be reviewed by the Planning Board and Board of Commissioners with a public hearing. If the conditional rezoning is granted, plans would be further developed in preparation of a preliminary plat submittal process. This would include development of the preliminary plat that would formalize lot lines and conservation areas. Construction drawings would be developed for permitting, which would include the County approval, permits from the state for stormwater, erosion control and waterlines and a NCDOT access

Shortcut Farms
Conditional Rezoning Community Meeting Summary

permit. If approved, the project would then be constructed and submitted to the County as a final plat before the lots became lots of record.

The project as proposed maintains a minimum of a 60' buffer along the perimeter of the conservation subdivision. This excludes setbacks and would maintain nearly 100' of separation of any homes from the current parcel boundary. The power easement is 180' wide and separates the GB lots from the residential lots, which puts the single family lots about 500' from Shortcut Road. The parcel drains to the swamp area to the south. The proposed drainage contains two large ponds. The county requires the post developed runoff from a 10-year, 24 hour rainfall event to be no more than the pre-developed runoff from a 2-year, 24 hour rainfall event, accounting for the pre-developed condition to be wooded. This pre-developed condition is much less than the current runoff from the site in the agriculture condition it is actually in. Farms typically have high runoff rates while wooded lands have much lower runoff rates. Preliminary drainage calculations have been performed and indicate the two ponds exceed the county requirements.

During the meeting, Robert Jeffries said that he owns a parcel to the south but has never been on it and doesn't know how to access it or what it could be used for. He said he thinks it was logged around 15 years ago. The meeting concluded around 6:30 with no other questions, concerns or other comments.

Meeting minutes prepared by Michael Morway



Shortcut Farms Conditional Rezoning Narrative

October 22, 2025

General Project Background

Windansea2, LLC has an offer to purchase a 51.7 acre tract owned by James & Minnie Barco. The parcel (parcel number 005200000210000) is located on US-158 (Shortcut Road) adjacent to Ponderosa Park and across the street from the Community Center. in Currituck County. The parcel is currently zoned AG and has a 180' wide power easement crossing it from east to west. The parcel is within the Airport Overlay District and is included within the "Maple Barco Small Area Plan" adopted by the Currituck County Board of Commissioners in July on 2009.

Windansea2, LLC (developer) and James and Minnie Barco (property owners) are seeking a conditional rezoning from the county to rezone the land as Conditional Single Family Mainland (C-SFM) and Conditional General Business (C-GB). The application includes rezoning a 44.4 acre portion to the C-SFM district for development as a Conservation Subdivision with 33 lots (average size of near 28,000 sf) with 42.75% of the land area in conservation. The remaining 7.23 acres are requested to be rezoned to the C-GB district in the form of 2 parcels along US-158. These lots are anticipated to be developed independently. The 180' power easement separates the C-GB parcels from the residential parcels.

The conceptual development plan for the conservation subdivision includes roads, waterlines, drainage and stormwater management as well as community amenities such as a walking trail and a pavilion area. The plan provides a minimum 60' wide buffer from the overall subdivision boundary to all lot lines and rights-of-way. The buffer will be landscaped and will include a drainage swale, walking path and potentially a berm. Two stormwater management ponds are proposed along the east and south side of the conservation subdivision that will allow the subdivision to meet and exceed the Currituck County Stormwater Manual requirements to maintain the runoff rate from the post developed 10-year, 24-hour rainfall event to a level below the predeveloped 2-year, 24-hour runoff rate accounting for a wooded condition (see "Preliminary Stormwater Management Report").

WindanSea2 Development Objectives

Neal Blinken is a Currituck County resident who has given careful thought on the potential development of this property. He intends to have covenants regarding the architecture and size of the homes to be built and provide a dense landscape perimeter buffer with indigenous vegetation. Some of the key points he has made regarding the development include

- The proposed Short Cut Farms development dovetails entirely with the County's Maple-Barco Small Area Plan
- Under the Maple-Barco Small Area Plan adopted at the Commissioner's Fall Retreat in October, 2023, among the points stated in the "VISION" portion of the statement is the statement that the County should "encourage appropriate mixes of Residential and Commercial densities in close proximity to the airport facility."
- The proposed residential community will also be a benefit to attract businesses to the County's business park located across the street, which is also a goal stated in the Maple-Barco "VISION" statement.
- With the growing College of the Albemarle campus and the County campus nearby, the residential community will give both students and faculty an attractive option to live close to work and schooling. In addition the residential section will allow the nearby YMCA to attract many more members.
- The proposed Commercial re-zoning will have also have a benefit for tourists traveling along US 158. This is also a goal of the Commissioner's Vision statement.
- Design guideline established by the developer on the proposed large lots will promote the use of architecture in harmony with the local heritage of Currituck County, another goal of the M-B Small Area Plan.

Conformity with the Currituck County Unified Development Ordinance

The UDO states "Conservation Subdivisions must be at least 10 acres" (UDO Section 6.4.4.B). The proposed conservation subdivision is 44.47 acres.

The UDO states "The conservation area shall occupy a minimum of 40% of the total acreage of the subdivision site" (UDO Section 6.4.4.C.2), The proposed plan provides 42.75% of the land proposed for C-SFM zoning in conservation.

Minimum lot size is 25,000 SF (UDO Section 3.4.2.F). The proposed plan maintains an average lot size of approximately 28,000 SF.

The UDO states “Ensure new development does not negatively impact existing adjacent agricultural uses” (UDO Section 5.11.1.A) and “Ensure greater compatibility between existing farms and new non-farm uses” (UDO Section 5.11.1.D). The proposed plan provides a vegetated 60’ wide buffer between the adjacent agricultural land and proposed single family lots.

The UDO states “The General Business (GB) district is established to accommodate a wide variety of residential and nonresidential uses on lots bounding major roadways outside of community and village center areas.” (UDO Section 3.5.2.A). The requested conditional rezoning includes GB zoning along US 158 and provides a 195’ buffer between the proposed C-GB and single-family lots.

The UDO limits dwelling density to 0.75 units per acre in SFM zoning in the G-1 transect (UDO Section 6.4.4.D.2). The proposed plan for single family development maintains a density of 0.74 dwelling units per acre.

Conformity with the Currituck County “Imagine Currituck 2040 Vision Plan”

The Land Use Plan identifies this parcel within the G-1 Transect for Low Density Growth. The recommendations for the G-1 Transect are described as “Conservation subdivisions are valued over other less-compatible development types”. The Land Use Plan specifies “Future Land Use” in the G-1 Transect of up to 1 dwelling unit per acre. The requested conditional rezoning and proposed plan for this project utilizes the recommended Conservation Subdivision with a density of 0.74 dwelling units per acre.

The Land Use Plan states objectives within the G-1 Transect is to “Encourage neighborhood commercial to locate near road intersections and existing compatible uses and community facilities.” The parcel is approximately 2.1 miles from the intersection of US 158 and NC 168 and adjacent to single family uses as well as community facilities.

The land located opposite of US-158 is identified as “G-3 Mixed Use Centers and Corridors” in the “Imagine Currituck 2040 Vision Plan” and is zoned General Business. The Land Use Plan specifies “Future Land Use” in the G-3 Transect of up to 2 dwelling units per acre. The proposed density provides a transition between adjacent agricultural uses and the more intense land uses.

“Imagine Currituck 2040 Vision Plan” describes goals of the “Maple/Barco/Airport area” Land Use Policy as “Promote area for growth as a significant community center and commerce park” and “Encourage growth as a commercial center that supports mainland businesses and Outer Banks tourism”. The requested conditional rezoning would better accommodate this goal as opposed to the current AG zoning that would severely limit this goal.

Conformity with the Currituck County “Maple Barco Small Area Plan”

The Small Area Plan recognizes the region as having “the potential to become a centralized County hub to promote economic growth”. It further states that the County will “strive to maintain and enhance the quality of life by...Encouraging appropriate mixes of residential and commercial densities in close proximity to the airport facility”. The requested conditional rezoning will implement these goals by providing residential and commercial near the airport.

The Small Area Plan has this parcel in a category designated as “Employment” and states “Areas designated as employment should be encouraged to develop in mixed use or campus like settings with generous, linked open space to maximize value, promote visual quality, and encourage pedestrian activity between employment areas and areas of supporting uses such as retail, restaurants, and residential.” The requested rezoning and proposed plan for this parcel combines commercial and residential while providing separation between them through a wide conservation area. Open spaces have been positioned to be visible from rights-of-way. Nearly half of the residential lots back up to undeveloped land and not have another residential use immediately behind.

Other Beneficial Items to be Noted

The parcel is on a major highway and adjacent to “GB”, “AG” & “HI” zoning districts and the area contains both high & low density single family uses. The requested rezoning and proposed plan allows residential and commercial lots to blend in with adjacent land uses. The location provides easy access to US 158 and NC 168.

Nearly all of the parcel is within Flood Zone X

All soils on this parcel are listed as either “Suitable” or “Marginal” for septic systems within figure B-2 of the “Imagine Currituck 2040 Vision Plan”.

The drainage outfall for this parcel is undeveloped swamp connection to the North River, thus providing a good outfall. Ponds are proposed that will exceed County stormwater requirements.

The parcel is adjacent to the existing county water supply and near the county water treatment plant, although all lots are anticipated to utilize on-site septic systems permitted through Albemarle Regional Health Services.