



APPLICATION - PERMIT ON-SITE WASTEWATER SYSTEM



(Please Type or Print Legibly)

OWNER'S NAME: K HOVNANIANS FOUR SEASONS AT ABBEY CREEK (C/O MIKE IRONS) PHONE: 302-223-0105

ADDRESS: 2499 S. DUPONT BLVD, UNIT G, SMYRNA, DE 19977

PROJECT LOCATION: 3399 MARABEL BLVD, MIDDLETOWN, DE 19709 (Pump station parcel)

TAX/MAP #: 23-080.00-066

APPLICATION PREPARER: Cotten Engineering LLC - Michael Cotten DNREC LICENSE #: 4483

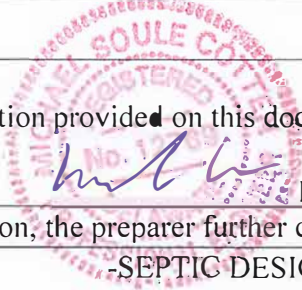
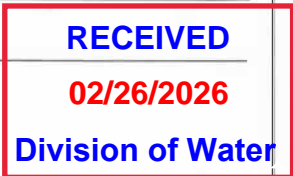
PREPARER'S ADDRESS: 10087 Concord Road, Seaford, DE 19973

PHONE: (302) 628-9164

I hereby affirm that the information provided on this document is accurate and complete.

Preparer's Signature: [Signature] Date: 2/26/26

By signing this permit application, the preparer further certifies they were physically present at the site.



-SEPTIC DESIGN CRITERIA-

(Please check all boxes that apply)

System Type: (CF = Cap & Fill / FD = Full Depth)

- Gravity (FD), Gravity (CF), Pressure Dose (FD), Pressure Dose (CF), Low Pressure Pipe (FD), Low Pressure Pipe (CF), Temporary Holding Tank, Permanent Holding Tank, Elevated Sand Mound, Wisconsin At-Grade, Subsurface Micro Irrigation, Peat Bio- Filter, Other

- Bed or Trench, Gravelless Chamber, Stone/Gravel, Tire Chips, Sand-lined Yes/No

Existing System Malfunctioning Yes/No/N/A

Pre-Treatment Units: Septic Tank, Other

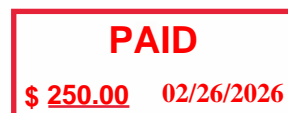
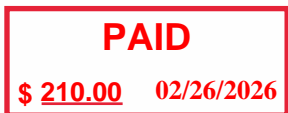
Central Water Available Yes/No (If yes, please state Utility Name: Middletown / Artesian Water Company)

Type of Construction:

- Replacement, New Construction, Component Replacement, Repair to Existing System, Reason:

Authorization to Use Existing System Permit #, Present Condition, Structure to be connected:

# of Bedrooms, Avg. Percolation Rate, Gallons Per Day Flow, Minimum Sq. Ft. Rcq'd, Sq. Ft. Proposed:



## Cotten Engineering, LLC

Mike Cotten, P.E.

10087 Concord Road  
Seaford, De 19973

P. 302-628-9164  
F. 302-628-9164

February 25, 2026

K Hovnanian's Four Seasons At Abbey Creek, Temporary Holding Tank

New Castle County Tax Map # 23-080.00-066

The K Hovnanian's Four Seasons At Abbey Creek, C/O Christopher Flathers, of Morris & Ritchie (MRA) "Project Engineer", is a subdivision located off Marabel Blvd., Middletown, DE, And Middletown / Artesian have both approved the project which is currently construction. The sanitary sewer and water systems for this development are to connect to the Middletown / Artesian community systems upon completion. Our client and the developer of the project, K Hovnanian's Four Seasons At Abbey Creek, request a temporary pump and haul permit to be utilized until the pump station and force main can be completed in order to continue with the construction and sale of dwellings within the subdivision. The sanitary system for phase 1 is complete. The pump station is scheduled to be completed with 1 year. The sanitary system will be utilized as storage for pump and haul and consists of 12 manholes, and associated 8" sanitary piping. The anticipated flow generated will be from 24 EDU's, 7,200 gal/day. See associated detail sheets.

The storage will be within the existing manholes #1, #14-#21 & # 36-#38 and piping. Clean Delaware will install an alarm within the manhole adjacent to the lift station This manhole outlet shall be plugged. Pumping will be from this manhole. This manhole will be barricaded during pump out. The alarm package will be installed by the pump station adjacent to this manhole.

I have included a portion of the approved plans for the sanitary collection system and the storage calculations for your reference.

Please feel free to call so that we may set a meeting and discuss this issue in more detail.

Sincerely,  
Cotten Engineering LLC  
Engineering and Planning Consultants

*Mike Cotten*

Michael Cotten PE  
302-628-9164

Note: Storage requirement for temporary holding tank is equivalent to 2 days of average daily flow for each EDU serviced. Gravity sewer system, excluding the pump station wet well, will be used as temporary holding tank. Manhole sizes, inverts, pipe sizes, and lengths based upon information as shown on the Water & Sewer Plans for Abbey Creek, as prepared by MRA, and approved by Town of Middletown, dated 7/25/25.

**Design Requirements:**

Design flow / DU = 300 gpd/DU (DNREC Standard)  
 Total lots served = 24 DU  
 Storage required = 14,400 gal

Surcharge Elev. = 48.7 \*  
 \* 3' below Rim of SMH 1

Storage in Manholes					
MH #	Dia. (ft)	Inv.	Depth of Surcharge	Vol. (cf)	Vol (gal)
1	5	36.00	12.70	249.36	1865.4
14	5	40.40	8.30	162.97	1219.1
15	5	41.40	7.30	143.34	1072.2
16	5	42.35	6.35	124.68	932.7
17	5	43.22	5.48	107.60	804.9
18	5	44.17	4.53	88.95	665.4
19	5	45.17	3.53	69.31	518.5
20	5	46.91	1.79	35.15	262.9
21	5	47.93	0.77	15.12	113.1
36	5	44.91	3.79	74.42	556.7
37	5	46.50	2.20	43.20	323.1
38	5	47.36	1.34	26.31	196.8

Total VF of MH = 58.08

Storage in Pipes				
Pipe	Dia. (ft.)	Length	Vol. (cf)	Vol. (gal)
14 to 1	0.67	221	77.92	582.9
15 to 14	0.67	171	60.29	451.0
16 to 15	0.67	161	56.76	424.6
17 to 16	0.67	165	58.17	435.2
18 to 17	0.67	160	56.41	422.0
19 to 18	0.67	170	59.94	448.4
20 to 19	0.67	274	96.60	722.6
21 to 20	0.67	151	53.24	398.2
36 to 17	0.67	300	105.77	791.2
37 to 36	0.67	300	105.77	791.2
38 to 37	0.67	162	57.12	427.3

Total LF of 8" pipe = 2235

Storage in WW = 0.0 gal  
 Storage in MH = 8,530.8 gal  
 Storage in pipes = 5,894.5 gal  
 Total Storage = 14,425.3 gal

Storage Provided = 14,425 > Storage Required = 14,400

∴ Acceptable FOR 24 TOTAL LOTS

# ABBEY CREEK SANITARY SEWER PLANS TOWN OF MIDDLETOWN NEW CASTLE COUNTY, DELAWARE

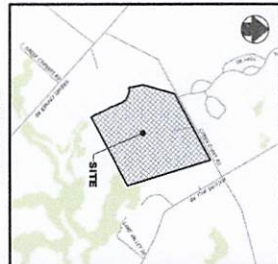
**INDEX OF DRAWINGS**

SHEET 1 SANITARY SEWER TITLE SHEET  
 SHEET 2  
 SHEET 3  
 SHEET 4  
 SHEET 5  
 SHEET 6  
 SHEET 7  
 SHEET 8  
 SHEET 9  
 SHEET 10  
 SHEET 11  
 SHEET 12  
 SHEET 13  
 SHEET 14  
 SHEET 15  
 SHEET 16  
 SHEET 17  
 SHEET 18  
 SHEET 19  
 SHEET 20  
 SHEET 21  
 SHEET 22  
 SHEET 23  
 SHEET 24  
 SHEET 25  
 SHEET 26

**LEGEND**

EXISTING PROPERTY  
 EXISTING ALLEYWAY  
 EXISTING SANITARY MAIN  
 PROPOSED LOT  
 EXISTING RECORD

SEE 02 ENTAILING CONSTRUCTION AND CONSTRUCTION INFORMATION



**TEMPORARY HOLDING TANK PLAN**

ASSUMES COMPLETED CONSTRUCTION OF GRAVITY SYSTEM IN ACCORDANCE WITH APPROVED PLANS WITHIN THE HIGH-LIGHTED AREAS. MAXIMUM SURCHARGE LIMIT ASSUMED TO BE ELEVATION 48.7 (3' BELOW RIM OF SMH 1)

**811**

Know what's below.  
Call before you dig.

FOR A LIST OF PARTICIPATING COMPANIES VISIT US AT WWW.CALLBEFOREYODIG.COM

**SEW**

**MORRIS & RITCHE ASSOCIATES, INC.**

REGISTERED PLANNERS  
 1111 North Pine Street  
 Wilmington, DE 19801  
 302.426.2888 FAX  
 302.426.2888

DEVELOPER  
 MORRIS & RITCHE ASSOCIATES, INC.  
 1111 North Pine Street  
 Wilmington, DE 19801  
 302.426.2888 FAX  
 302.426.2888

**ABBAY CREEK**

NEW CASTLE COUNTY, DELAWARE  
 TOWN OF MIDDLETOWN

DATE: 01/23/07

PROJECT NUMBER: 103

PROJECT NAME: ABBAY CREEK

PROJECT LOCATION: TOWN OF MIDDLETOWN, NEW CASTLE COUNTY, DE

PROJECT NUMBER: 103

PROJECT NAME: ABBAY CREEK

PROJECT LOCATION: TOWN OF MIDDLETOWN, NEW CASTLE COUNTY, DE

DATE: 01/23/07

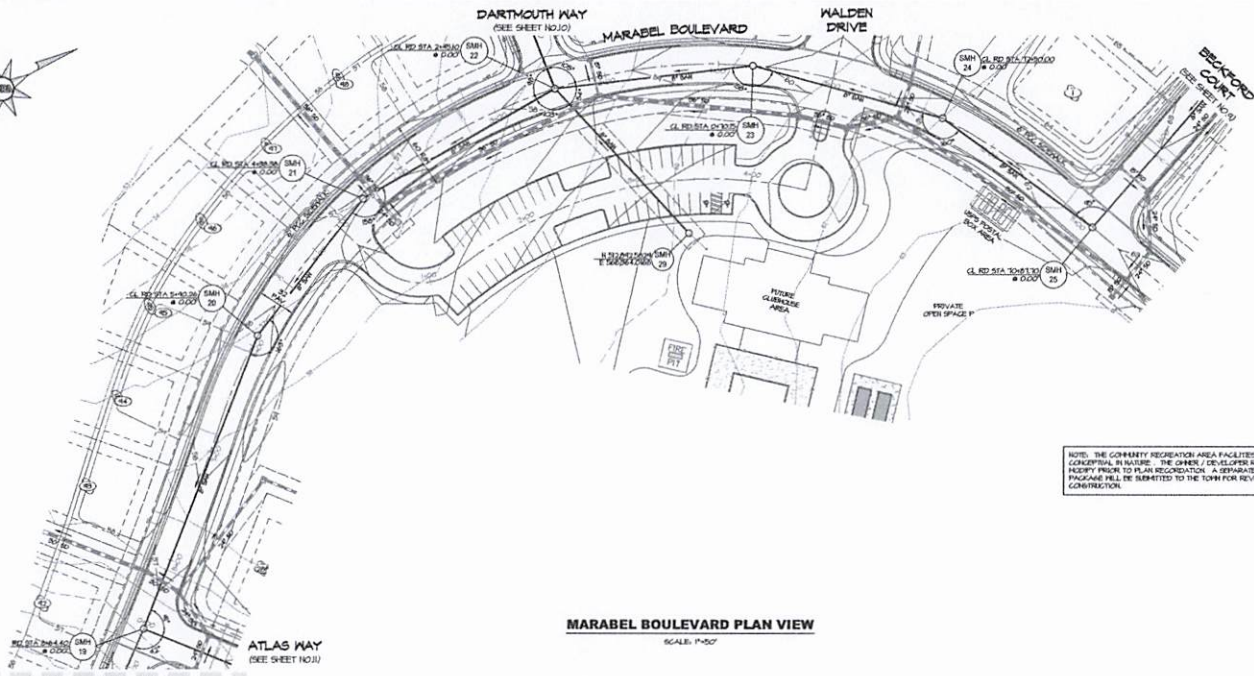
PROJECT NUMBER: 103

PROJECT NAME: ABBAY CREEK

PROJECT LOCATION: TOWN OF MIDDLETOWN, NEW CASTLE COUNTY, DE







**MARABEL BOULEVARD PLAN VIEW**  
SCALE: P=50'

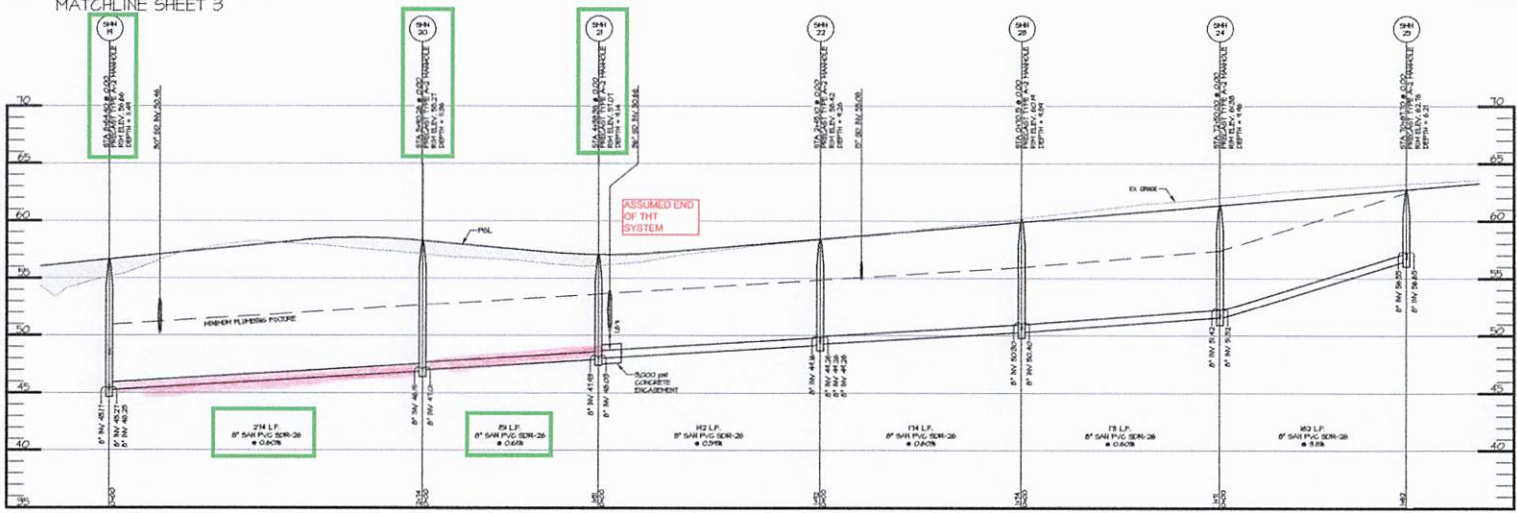


**KEY MAP**  
SCALE: P=1000'

- LEGEND**
- PROPERTY BOUNDARY
  - - - - - EXISTING RIGHT-OF-WAY
  - - - - - EXISTING ADJACENT PROPERTY LINE
  - - - - - PROPOSED RIGHT OF WAY
  - - - - - PROPOSED LOT LINE/PRICED LINE
  - - - - - PROPOSED EASEMENT
  - - - - - BUILDING SETBACK LINE
  - - - - - 100 YR FLOOD ELEVATION
  - - - - - NON-DIRECTIONAL WETLANDS
  - - - - - WETLAND BUFFER
  - - - - - WATER RESERVE PROTECTION AREA
  - - - - - EXISTING MINOR CONTOURS
  - - - - - EXISTING MAJOR CONTOURS
  - - - - - PROPOSED MINOR CONTOURS
  - - - - - PROPOSED MAJOR CONTOURS
  - PROPOSED LOT NUMBER
  - PROPOSED CURB & GUTTER
  - PROPOSED CONC SIDEWALK
  - PROPOSED FLOODWALL
  - PROPOSED SANITARY LATERAL
  - PROPOSED SANITARY SERVICE & MANHOLE
  - PROPOSED WATER MAIN W/ MANHOLE & VALVE
  - PROPOSED STORM DRAIN / INLET

NOTE: THE COMMUNITY RECREATION AREA FACILITIES SHOWN HEREIN ARE CONCEPTUAL IN NATURE. THE OWNER / DEVELOPER RESERVES THE RIGHT TO MODIFY PRIOR TO FINAL RECREATION. A SEPARATE SITE PLAN CONSTRUCTION PACKAGE WILL BE SUBMITTED TO THE TOWN FOR REVIEW PRIOR TO CONSTRUCTION.

DEVICES CONTROLLED & CONTRACTED SHALL BE CERTIFIED BY AN APPROVED SOLID ENGINEER.



**MARABEL BOULEVARD PROFILE VIEW**  
SCALE: P=50' (HORIZ), V=5' (VERT)



**SEW**

**MRA**

**MORRIS & RITCHIE ASSOCIATES, INC.**

ENGINEERING PLANNING  
SURVEYING AND LANDSCAPE  
ARCHITECTS

111 BULFORD DRIVE  
MIDDLETOWN, DE 19711  
302-228-2200  
302-228-2200 FAX

DEVELOPER  
MORRIS & RITCHIE ASSOCIATES, LLC  
ATTORNEY AT LAW  
PHILADELPHIA, PA 19103

**ABBEE CREEK**  
NEW CASTLE COUNTY, DELAWARE  
TOWN OF MIDDLETOWN



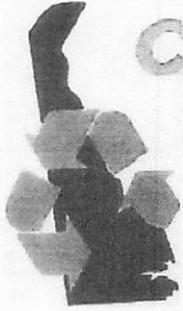
MORRIS & RITCHIE ASSOCIATES, INC.

1	MIDDLETOWN COMMENTS	05/15/25
2	REVISION	DATE
21447	DESIGNED BY	10/31/24
	CHECKED BY	

**SANITARY SEWER PLAN**

SHEET NUMBER





# Clean Delaware

P.O. Box 123 · Milton · DE 19968  
1.888.667.1517 · 302.684.4221 · Fax: 302.684.1850

[www.cleandelaware.com](http://www.cleandelaware.com)

## PUMP AND HAUL SEWAGE MAINTENANCE CONTRACT

PROPERTY OWNER: K. Hovnanian

TELEPHONE: 302-223-0105 Mike Irons

TAX MAP NUMBER:

PROPERTY LOCATION: Mike Irons

2308000066

New Castle County

Middletown, DE

HOLDING TANK SIZE:      gallons  
14,425

DISPOSAL SITE: Clean Delaware, LLC  
Route 30  
Milton, DE 19968

CONTRACT EXPIRES: March 31, 2027

### TERMS OF CONTRACT:

1. Pumping frequency will be such that the waste level is maintained to prevent overflowing.
2. Property owners will notify waste hauler when holding tank is 80% full and request that the tank be pumped within 1-2 working days.
3. Duration of contract is one year or that part of, until expiration date.
4. Equipment availability with a variety of vacuum pump trucks 4000-to-7000-gallon capacity.
5. Emergency response will be within 4 hours.

Gerry Desmond

Clean Delaware, LLC

2-12-2026

Date

Signed by:

Mike Irons

2/12/2026

Property Owner/Agent

Date

**Environmental Pumping + Complete Septic Service**  
**Grease Trap Pumping + Portable Toilet Rentals**  
**Residential + Commercial + Industrial**

# TANK ALERT® SOLAR

Sistema de Alarma de Energía Solar de Fácil Instalación (interior / exterior)

La innovadora alarma **Tank Alert® Solar** advierte sobre niveles de líquidos potencialmente peligrosos en aplicaciones de agua y aguas residuales mediante la utilización de un panel solar con batería de respaldo para una fácil instalación y operación. Es una solución simple e ideal para casas vacacionales, aplicaciones en ubicaciones remotas o para actualizar sistemas existentes.

Instale el panel donde pueda recibir luz solar directamente para que la alarma funcione correctamente. Cuando ocurre una condición de alarma, la luz/baliza se iluminará y activará la bocina.

## CARACTERÍSTICAS

- Fácil instalación, instálelo usted mismo
- Conexiones seguras de bajo voltaje para panel solar e interruptores de flotador
- La alarma funciona con una batería recargable a través de un panel solar de 12 VDC y 10 watts (incluye soporte / cable de montaje)
- Dos (2) baterías de iones de litio que proporcionan energía de respaldo
- Gabinete NEMA 4X clasificada para uso interior / exterior
- Indicador LED verde de encendido
- Indicador LED rojo de polaridad inversa de la batería
- Indicador LED ámbar de carga de batería
- Botón de prueba / silencio y reinicio automático de alarma
- Interruptor principal de encendido / apagado
- Lengüetas de montaje integradas para una fácil instalación
- Pestillo integrado para candado que otorga una mayor seguridad
- Garantía limitada de dos años para el paquete de alarma (incluye alarma, interruptor de flotador y panel solar). Garantía limitada de un año para baterías de iones de litio.

## # DE PARTE DESCRIPCIÓN

- **1052473** TA Solar, con SJE SignalMaster® de alto nivel, 6m de cable
- **1052474** TA Solar, con SJE SignalMaster® de bajo nivel, 6m de cable
- **1052475** TA Solar, NO interruptor de flotador



Debe instalarse en un lugar con luz solar adecuada para la carga solar. La unidad en alarma constante sin carga solar funcionará durante aproximadamente 24 horas.

La unidad inactiva sin carga solar funcionará durante aproximadamente 5 días.



**Parcel # 2308000066**

Property Address: 3399 MARABEL BLVD  
 MIDDLETOWN, DE 19709-  
 Subdivision: ABBEY CREEK  
 Owner: K HOVNANIANS FOUR SEASONS AT ABBEY CREEK  
 2499 S DUPONT BLVD  
 Owner Address: UNIT G  
 SMYRNA, DE 19977  
 Municipal Info: Incorporated in MIDDLETOWN PROPERTY TAX AREA

Lot #: PUMPSTA	Property Class: RESIDENTIAL
Location:	Lot Size: 0.47
Map Grid: 06602760	Lot Depth: 0
Block:	Lot Frontage: 0
Census Tract: 168.06	Street Finish:
Street Type:	
Water:	
Microfilm #: 202505270034883	

**Tax/Assessment Info**

Current Assessment  
 Land: 0  
 Structure: 0  
 Homesite: 0  
 Total: 0  
 County Taxable: 0  
 School Taxable: 0

**District & Zoning Info**

Districts

- **FIRE/RESCUE - TOWNSEND**
- **APPOQUINIMINK SCHOOL DIST-TRES**
- DE SEN 14-KYRA HOFFNER
- PLANNING 7 - MOT
- ABBEY CREEK
- WETLANDS-LU
- DE REP 11-JEFFREY N SPIEGELMAN
- SOUTH OF C & D CANAL
- FLOODPLAIN
- ROLLBACK PENDING CHANGE OF USE
- COUNCIL 6 - DAVID B CARTER

Zoning

- R3 -

**Deed History**

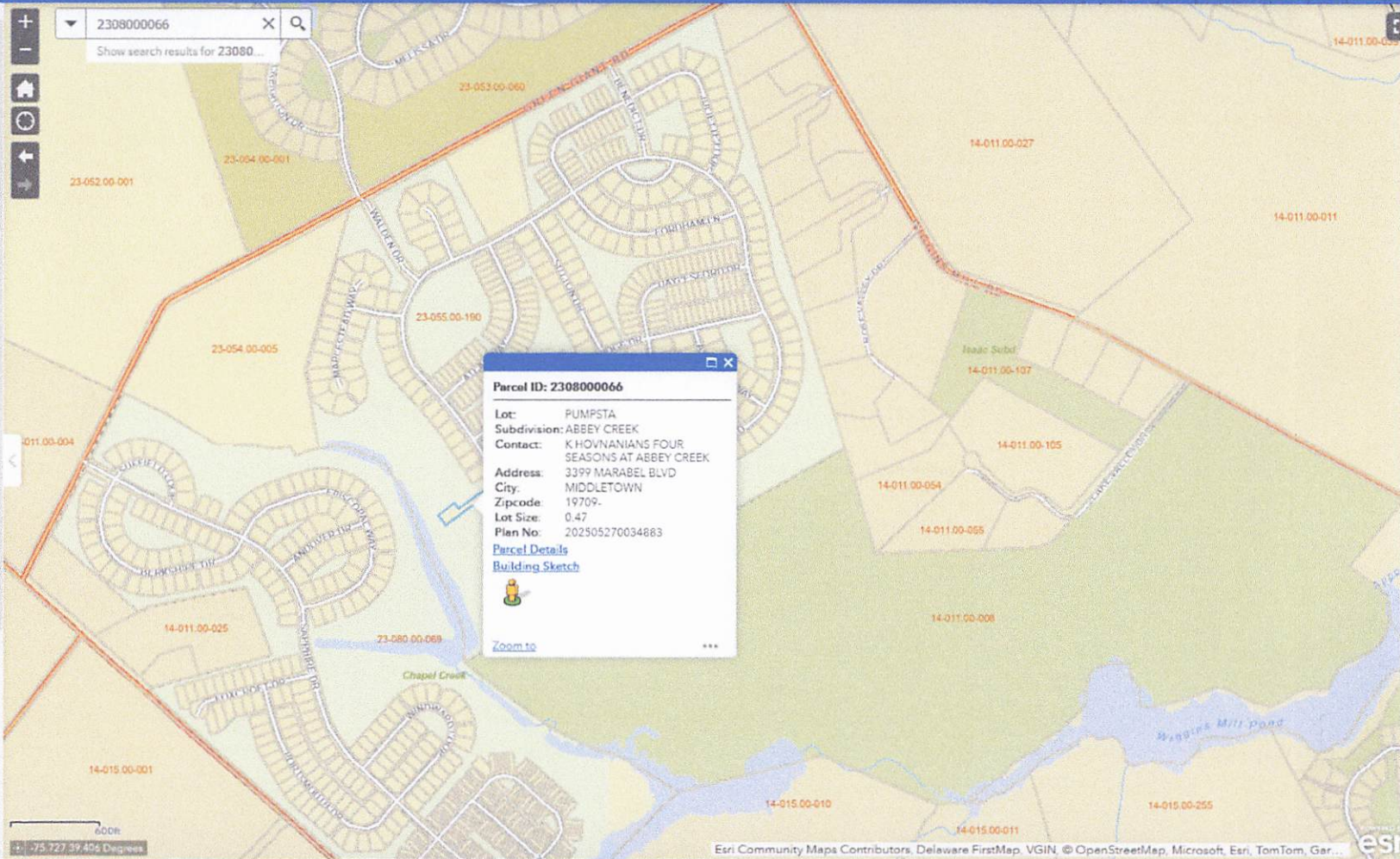
Grantee(s)	Deed	Multi?	Sale Date	Sale Amount
R ACRES INC	763 158	N	9/15/1988	\$10.00
K HOVNANIANS FOUR SEASONS AT ABBEY CREEK	20250919 0067778	Y	9/16/2025	\$1.00

# Explore New Castle County

Click here for more GIS services Try out the newest version of Explore New Castle County!

## Layers

- Street View
- Aglands Preservation Districts
- Economic Development
- Land Use
- Auburn Valley Master Plan
- Permits
- Development Activity Plans
- Zoning
- Civic
- Political
- Public Services
- Education
- Property Sales
- DE State Strategies
- Emergency Services
- Parks and Open Space
- Environmental
- Water Resource Protection Areas
- Base Layers
- 2025 NCC Aerial Imagery
- 2023 NCC Aerial Imagery
- 2022 NCC Aerial Imagery



**Parcel ID: 2308000066**

Lot: PUMPSTA  
 Subdivision: ABBEY CREEK  
 Contact: K HOVNANIANS FOUR SEASONS AT ABBEY CREEK  
 Address: 3399 MARABEL BLVD  
 City: MIDDLETOWN  
 Zipcode: 19709-  
 Lot Size: 0.47  
 Plan No: 202505270034683

[Parcel Details](#)  
[Building Sketch](#)

  
[Zoom to](#)