

# **Amendment to the Third Round Housing Element and Fair Share Plan**

**South Brunswick Township, Middlesex County, New Jersey**

**June 8, 2018**

**Adopted July 11, 2018**

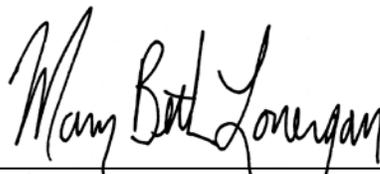


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Township of South Brunswick, Middlesex County,  
New Jersey

Adopted July 11, 2018

Prepared for the Township of South Brunswick by:

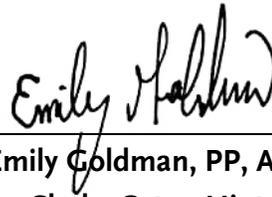


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## **South Brunswick Township Council**

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**Joseph J. Camarota, Jr., Deputy Mayor**

**Kenneth Bierman**

**Archana Grover**

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**Bryan Bidlack, Director of Planning, Zoning and Engineering**

**Denise Brown, Affordable Housing Administrative Agent/Municipal Housing  
Liaison**



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**Thomas Collins, Esq. and Thomas Molica, Esq., of the firm Vogel, Chait,  
Collins and Schneider, Planning Board Litigation Counsel**

**Patrick W. Foley, Esq., Planning Board Counsel**

**Bryan Bidlack, Director of Planning, Zoning and Engineering**

**Denise Brown, Affordable Housing Administrative Agent/Municipal Housing  
Liaison**



## EXECUTIVE SUMMARY

This amendment to the third round housing element and fair share plan has been prepared for South Brunswick Township, Middlesex County, in accordance with the rules of the New Jersey Council on Affordable Housing (hereinafter “COAH”) at *NJAC 5:93 et seq.* This plan is an amendment to the prior third round plan adopted by the Planning Board and endorsed by the Township Council in December 2008.

This amendment will serve to include the “Princeton Orchards” site – inclusionary rental housing development into the Township’s housing element and fair share plan. The inclusion of the Princeton Orchard site is in response to the Court-approved Settlement Agreement between the Township and Princeton Orchards Associates, LLC. No other revisions have been made to either the Township’s 2008 housing element and fair share plan and the 2017 amendment or the 2008 spending plan and the 2017 spending plan amendment at this time.

## **SOUTH BRUNSWICK'S THIRD ROUND PLAN AMENDMENT**

While the NJ Supreme Court, in its March 10, 2015 decision, pointed to the use of COAH's second round rules, it did not calculate each municipality's affordable housing obligation, leaving that to the Superior Court.

The Township has fully satisfied its 841-unit prior round obligation through prior cycle credits, completed inclusionary housing developments, completed 100% affordable developments, completed alternative living arrangements, completed write-down/buy-down units, and rental bonuses that have produced affordable family sale and rental units, affordable senior rental units, and special needs and supportive housing.

The limited plan amendment identifies the Princeton Orchard site as an additional means to address the Township's third round fair share obligation in response to the Court-approved Settlement Agreement between the Township and Princeton Orchards Associates, LLC.

## **Third Round Obligation**

### ***Inclusionary Development***

#### **Princeton Orchards**

Princeton Orchards Associates, LLC (“POA”) is the owner of the real property located on Route 522, Ridge Road and Griggs Drive and designated as Block 31, Lots 30.012 and 35.09 (the “Property”), consisting of approximately 49 acres, with a 24-acre portion of the Property developed for 120 two-bedroom apartments, known as “Princeton Orchards”, and the remaining 25 acres fronting on Route 522 being currently vacant. The Township had previously acquired title to certain property adjoining the existing Princeton Orchards apartments known as 368 Ridge Road, Dayton, NJ, and designated as Block 31, Lots 35.712 and 35.811, consisting of approximately 6.04 acres, and commonly referred to as the “Stover Tract”.

The Township and Princeton Orchards Associates, LLC (“POA”) executed a Settlement Agreement (“Agreement”) on March 19, 2018 (see Exhibit 1). Under the Agreement the Township, the Planning Board and POA have negotiated a resolution of the development of a combined 55-acre tract including the development of a new multi-family inclusionary family rental project as an expansion of an existing multi-family rental complex (“Princeton Orchards”) along Ridge Road and the development of commercial uses along Route 522. There will be the construction of 184 new multi-family apartments with a 25% affordable housing set-aside resulting in 46 affordable family rental units including ten (10) very-low income family rental units. The affordable housing production from the new inclusionary development is to provide the Township with affordable family rental credits to apply towards the Township’s third round affordable housing obligation including the ‘gap’ (1999–2015) and prospective need (2015-2025) third round fair share. In addition, the commercial development will pay a mandatory non-residential development fee pursuant to N.J.S.A. 40:55D-8.1.

The entire 55-acre tract includes an approximately six (6) acre site known as the ‘Stover Tract’ (Block 31/Lots 35.712 and 35.811) with frontage along Ridge Road. The Stover tract is owned by the Township and is to be transferred to POA. The overall 55-acre tract also includes an approximately 49 acre site (Block 31.00, Lots 30.012 and 35.09) which has an existing multi-family rental complex developed on

# Princeton Orchards

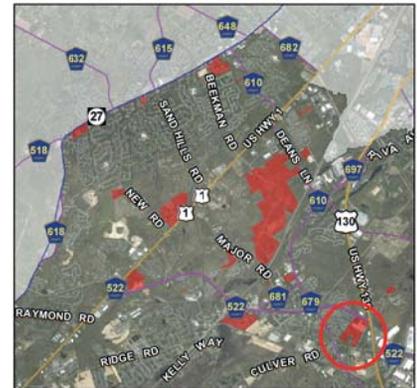
Block 31, Lots 30.012, 35.09, 35.712, 35.811

LOCATION:  
South Brunswick, Middlesex County, NJ

DATE:  
June 2018

### Legend

- WETLANDS (LOI)
- WATER
- Streams
- Slopes
  - 15 to 25 Percent
  - 25 Percent and above
- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Future Conditions 1% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee



KEY MAP



0 400FT

Clarke Caton Hintz

- Architecture
- Planning
- Landscape Architecture

24 of the 49 acres and the 25-acre balance will be developed as a portion of the new 184-unit inclusionary family rental development on 16 acres and nine (9) acres will be developed for commercial uses. In addition to the 16 acres noted above, the site of the new 184-unit inclusionary family rental development will also include the six (6) acres of the Stover Tract for a total of approximately 22 acres.

The new inclusionary family rental development on approximately 22 acres has frontage on Ridge Road and will have access to Ridge Road through the existing Princeton Orchards development (see Exhibit 2 - concept sketch prepared by POA's Architect/Planner Looney Ricks Kiss). The inclusionary site will also have access to Route 522 through the approximately 9-acre commercial tract owned by POA, which pursuant to the agreement is developed/will be developed for commercial purposes. As the 9-acre commercial tract has frontage along both Route 522 and Route 130, this portion of the property is most appropriate for development of non-residential uses because of the high volume of car and truck traffic on both roads. Although the existing Princeton Orchards rental complex and the proposed new inclusionary family rental development have frontage along Griggs Drive, there will be no vehicular access to Griggs Drive from either the existing or future residential development.<sup>1</sup>

The larger 55-acre tract is bounded by County Route 522 to the north near the intersection with NJ State Highway Route 130 and commercial uses to the north across Route 522; Griggs Drive and single-family dwellings to the east which back-up to commercial uses fronting Route 130; Ridge Road and single-family dwellings to the south; and Summerfield Plaza, multi-family attached units along Blossom Circle, and single-family dwellings along Larkspur Drive to the west. The site is located in Planning Area 2 of the 2001 State Plan, the preferred location of inclusionary development.

The new inclusionary family rental development will be built as an expansion of the existing 120-unit Princeton Orchards family rental complex and all new residents of the 184-unit inclusionary family rental development will have access to the existing amenities at Princeton Orchards which include an existing clubhouse, pool, tennis courts, basketball court and walking path. At least one new play lot will be provided for use by all residents of the existing and proposed development. Also, a new system of walking paths will be provided including a

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<sup>1</sup> The existing Maul Electric business within the nine-acre portion of the commercial tract along Route 522 has vehicular access to Griggs Drive which will remain.

walking path to commercial uses at the corner of Ridge and Georges Road and a pedestrian path to the adjacent Super Stop and Shop grocery store and the other commercial uses at the Summerfield Plaza.

The Agreement was subject to a Fairness Hearing on May 22, 2018 to determine whether the terms of the Agreement were fair and reasonable to low and moderate income households. The Honorable Arthur Bergman, J.S.C., approved the Agreement at the Fairness Hearing, see attached order (see Exhibit 3).

As stated in *NJAC 5:93-5*, affordable housing sites shall be available, approvable, developable, and suitable, as those terms are defined in *NJAC 5:93-1.3*, for the production of low- and moderate-income housing. As stated below, the Princeton Orchard site meets these criteria:

- ✓ Site Control – The site is available as defined at *NJAC 5:93-1.3*. POA has represented that the site has a clear title and has no encumbrances which would preclude its development with an inclusionary development. The Township represents that the portion of the tract known as the ‘Stover Tract’ also has clear title and has no encumbrances which would preclude its development with an inclusionary development.
- ✓ Approvable – The site is approvable as defined in COAH’s second round rules, *NJAC 5:93-1.3*. The Township and Planning Board have agreed to development regulations PRD VI (Mixed Development Zone) which are attached to the settlement agreement and were approved by the Court. The site appears to be in compliance with Residential Site Improvement Standards (“RSIS”) requirements and the parties will cooperate in order to permit POA to receive outside agency approvals from DEP, the County, etc.
- ✓ Developable – The proposed development is located in Planning Area 2 (Suburban Planning Area) of the State Plan which is the preferred location for affordable housing, is located in a DEP-approved Township sewer and water service area and is proposed to connect to public utilities. According to the 2017 *Sanitary Sewer System Capacity and Flow Study* (“2017 Sewer Capacity Study”), prepared by Richard A. Alaimo Associates, dated April 19, 2018, the site flows into the Route 130 Interceptor which has capacity for this project (see Exhibit 4). While the

2017 Sewer Capacity Study did not identify a pro rata project share of infrastructure improvement costs for this project, the Agreement commits POA to provide for on-site sewer infrastructure or improvements required for the development at the sole cost and expense of POA and may require POA to provide a pro rata contribution for any such sewer improvements that are off-site.

- ✓ Site Suitability – The site is suitable and developable as defined at NJAC 5:93-1.3. The new inclusionary development is adjacent to compatible land uses such as the existing multi-family Princeton Orchards apartments and other multi-family development as well as commercial uses that will provide shopping opportunities to the residents of the new inclusionary development. Access to the site will be provided along Ridge Road through the existing Princeton Orchards apartment complex and to Route 522 through the proposed commercial portion of the tract.

While County, DEP and other outside agency approvals are required, the parties do not anticipate major issues regarding access to the residential uses. According to POA's site suitability analysis, dated August 11, 2016, prepared by Art Bernard, P.P., "With regard to environmental issues, the site is almost constraint free. There is a small wetland area near a drainage basin on the existing Princeton Orchards site. Other than that, there are no wetlands, flooding, stream buffer requirements, slope issues or historic structures impacted..." As a term to the Agreement, the parties acknowledge that both the Stover Tract and the undeveloped portions of the tract require soil remediation to address historic pesticide contamination from prior use as an orchard. POA shall be solely responsible for all site remediation. The Agreement also permits a comprehensive storm water management system for the entire inclusionary development, regardless of internal lot configuration, and allows all existing impervious cover and associated storm water management facilities serving the existing Princeton Orchards Apartments to remain and no additional storm water requirements are required for the existing improvements.

The site will be designed in accordance with RSIS, where applicable.

- ✓ Accessibility – All units at the site will comply with the Barrier Free Subcode at NJAC 5:23-7.

- ✓ Administrative Entity – Pursuant to the Agreement, POA will contract with the Township’s experienced administrative agent for the administration of the affordable units and shall have the obligation to pay all costs associated with properly deed-restricting and the long-term administration of the affordable units in accordance with *NJAC 5:93, et seq.* and the Uniform Housing Affordability Controls (“UHAC”) per *NJAC 5:80-26.1*.
- ✓ Very Low/Low/Moderate Income Split – The Court-approved Agreement requires the developer to provide 10 very-low income affordable family rental units which is substantially more than the 13% statutory requirement. 21.7% of the units in the project will be reserved as very low-income units; at least 28.3% of the units will be reserved as low-income units; and the balance of 50% of the units may be moderate-income units with rents set no higher than 60% of the median income per *NJAC 5:93-2.20* and the UHAC at *NJAC 5:80-26.1*.
- ✓ Affirmative Marketing – POA will contract with the Township as administrative agent to affirmatively market the units in accordance with *NJAC 5:93 et seq.* and the UHAC per *NJAC 5:80-26.1* and pursuant to the Court-approved settlement agreement.
- ✓ Controls on Affordability – POA will place minimum 30-year affordability control deed restrictions on the units in accordance with *NJAC 5:93 et seq.* and the UHAC per *NJAC 5:80-26.1*.
- ✓ Bedroom Distribution – POA will follow the UHAC requirements in developing the bedroom breakdown of the affordable units in accordance with *NJAC 5:80-26.3(d)* and will provide nine (9) one-bedroom units, 27 two-bedroom units, and ten (10) three-bedroom units.

Regarding unit integration, pursuant to COAH’s regulations at N.J.A.C. 5:93-5.6(f), developers of inclusionary developments are encouraged to integrate affordable units with market units. The proposed ordinance indicates that one (1) and three (3) bedroom affordable units will be integrated into the new proposed housing and the two (2) bedroom units will be dispersed within the existing Princeton Orchards buildings. The two-bedroom units located within the existing Princeton Orchard buildings are required to be renovated prior to being deed restricted as affordable units such that the units shall be certified to be in sound

condition as a result of an inspection by a licensed building inspector and brought up to code as necessary with rehabilitation costs to be borne by POA.

Regarding phasing, the proposed ordinance requires affordable units phased with market units to comply with COAH’s rules. Pursuant to COAH regulations at N.J.A.C. 5:93-5.6(d), affordable housing units within inclusionary developments shall be built (receive a certificate of occupancy or a continuing certificate of occupancy for the existing units at Princeton Orchards) in accordance with the following schedule:

<u>Minimum Percentage of Affordable Units Completed</u>	<u>Percentage of Market Housing Units Completed</u>
0	25
10	25 + 1 unit
50	50
75	75
100	90
	<u>100</u>

In the Special Master’s Report - Site Suitability Ranking, dated September 2016, prepared by the Superior Court’s Special Master Christine A. Nazzaro-Cofone, AICP, PP, Ms. Cofone had raised concerns with the Richardson Fresh Ponds/Princeton Orchards Associates site and determined that “This site meets Judge Wolfson’s criteria, including, the site is more likely to result in actual construction than other projects lower in the ranking, has available infrastructure, is proximate to goods and services, has regional accessibility, and the property possesses environmental suitability and compatibility with neighboring land uses. The site also meets the secondary COAH’s site suitability criteria.” The Township’s Settlement Agreement with POA resolves all of the concerns expressed by the Special Master in her report and otherwise confirms the Special Master’s earlier findings of site suitability.

POA will be constructing 184 new multi-family apartments with a 25% affordable housing set-aside resulting in 46 affordable family rental units. As such, the Township is eligible for credit for 46 affordable family rental units and will be eligible for up to 46 rental bonuses. In addition, the commercial development will pay a mandatory non-residential development fee pursuant to N.J.S.A. 40:55D-8.1.

### **Affordable Units Meeting the Third Round Obligation**

Pursuant to this plan amendment, the Princeton Orchards project will result in 46 affordable family rental units. The project will provide more than 13% very-low income units. The site will also assist the Township in addressing its third round rental obligation and third round family affordable unit obligation. Lastly, the Princeton Orchards site will also contribute a non-residential development fee on the future commercial development.

### **SUMMARY**

South Brunswick Township has made substantial progress on meeting its third round obligation. The Township will continue to address its third round obligation with the Court-approved inclusionary housing development at the Princeton Orchards site.

**EXHIBIT 1**

**SOUTH BRUNSWICK TOWNSHIP / PRINCETON ORCHARDS  
SETTLEMENT AGREEMENT**



Record & Return to:  
Henry Kent-Smith, Esq.  
Fox Rothschild, LLP  
997 Lenox Drive, Building 3  
Lawrenceville, NJ 08648

Prepared by: Henry Kent-Smith, Esq.

## SETTLEMENT AGREEMENT

THIS SETTLEMENT AGREEMENT (“Agreement”) made this 19 day of March, 2018, by and between:

**TOWNSHIP OF SOUTH BRUNSWICK**, a municipal corporation of the State of New Jersey, County of Middlesex, having an address at 540 Ridge Road, Monmouth Junction, New Jersey 08852 (hereinafter the “**Township**”);

**TOWNSHIP OF SOUTH BRUNSWICK PLANNING BOARD**, a land use board constituted under the authority of the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq., having an address at 540 Ridge Road, Monmouth Junction, New Jersey 08852 (hereinafter the “**Planning Board**”);

And

**PRINCETON ORCHARDS ASSOCIATES, LLC**, a New Jersey limited liability company, c/o The Westover Companies, 550 American Avenue, Suite 1, King of Prussia, PA 19406 (hereinafter “**POA**”), on behalf of itself and as successor in interest to **RICHARDSON FRESH PONDS, LLC**;

Collectively, the Township, Planning Board and POA shall be referred to as the “**Parties.**”

**WHEREAS**, POA is the owner of the real property located on Route 522, Ridge Road and Griggs Drive and designated as Block 31.00, Lot 30.012 and Block 31.00, Lot 35.09 on the tax map of the Township of South Brunswick (the “**Property**”), consisting of approximately 49 acres, with a 24 acre portion of the Property developed for 120 two-bedroom apartments, known as “Princeton Orchards”, and the remaining 25 acres fronting on Route 522 being currently vacant; and

**WHEREAS**, on July 1, 2015, the Township filed a declaratory judgment action seeking a Judgment of Compliance and Repose approving its Affordable Housing Plan (as defined herein), in addition to related reliefs entitled In the Matter of the Application of the Township of South Brunswick, County of Middlesex, Docket No. MID-3878-15, transferred to Mercer County under Docket No. MER-L-0810-17 by order of April 20, 2017, and transferred back to Middlesex County by order of July 26, 2017 subsequently given Docket No. MID-L-4436-17 (the “**DJ Action**”); and

**WHEREAS**, on or about July 16, 2015, Richardson Fresh Ponds and POA filed a Motion to Intervene in the DJ Action (“**POA Intervention**”); and

**WHEREAS**, on July 31, 2015, the Court granted, among other things, the POA

Intervention, as well as temporary immunity to the Township from builder's remedy actions in the DJ Action; and

**WHEREAS**, on or about August 20, 2015, Richardson Fresh Ponds and POA filed their answer in the DJ Action; and

**WHEREAS**, the Court having revoked the Township's immunity permitting the filing of various builder's remedy actions under separate docket numbers, which were consolidated with the DJ Action, including a builder's remedy complaint filed on May 3, 2016 by Richardson Fresh Ponds and POA entitled, Richardson Fresh Ponds LLC v. Township of South Brunswick, et al., Docket No. MID-L-2638-16 (the "Builder's Remedy Action"); and

**WHEREAS**, the Court having rendered Opinions and Orders dated July 21, 2016, October 6, 2016, and October 21, 2016, following multiple dates of trial and briefing concerning the Township's regional fair share obligations for the period from 1999 through 2025 and notwithstanding the Township's and Planning Board's potential appeal of the above referenced Opinions and Orders, the Township and Planning Board have agreed to proceed with this settlement, and

**WHEREAS**, the Township had previously acquired title to certain property adjoining the existing Princeton Orchard apartments known as 368 Ridge Road, Dayton, NJ., and designated as Block 31 Lots 35.712 and 35.811, being approximately 6.04 acres in area, and commonly referred to as the "Stover Tract"; and

**WHEREAS**, the Township and POA have reached an agreement to convey the Stover Tract to POA as an adjoining property owner in consideration of POA's agreement to modify its proposed development to redistribute a portion of the proposed inclusionary housing development on to the Stover Tract; and

**WHEREAS**, in light of the agreement by the Township to convey the Stover Tract to POA, the Parties have reached an agreement whereby POA will develop its Property, inclusive of the Stover Tract (together referred to as the "Development Property"), for a subdivided commercial lot consisting of approximately (9) contiguous acres fronting on Route 522, inclusive of the existing Maul Electric property (the "**Commercial Lot**") and with an inclusionary project consisting of a total of 120 existing and 184 new apartments, with a 25% affordable housing set aside allocated to the 184 new market rate apartments, resulting in creation of 46 affordable family rental apartments; and

**WHEREAS**, the 46 affordable units will be set-aside for ten (10) very low income households, fourteen (14) low income households and twenty-two (22) moderate income households (the "**Inclusionary Development**"); and

**WHEREAS**, POA is amenable to fully and finally resolving the POA Intervention premised upon the Township's agreement to convey the Stover Tract to POA and securing the right to construct the Inclusionary Development contemplated herein on the Development Property pursuant to the standards set forth in the attached Ordinance; and

**WHEREAS**, the Planning Board is a party to this Settlement Agreement and will abide by the terms of this Agreement as set forth below for the purpose of facilitating a resolution of POA's objection to the Township's Affordable Housing Plan and the ultimate production of the affordable housing that is part of the Inclusionary Development as set forth in Section 10.8; and

**WHEREAS**, if required by the Court, the Parties will seek the Court's approval of this Settlement Agreement in connection with the DJ Action, and the Parties intend to be bound by this Agreement, provided this Agreement is approved by the Court; and

**WHEREAS**, to ensure that the Inclusionary Development contemplated by this Agreement generates affordable housing credits to be applied to the Township's Gap (1999-2015) and Round 3 (2015-2025) affordable housing obligations, the affordable units within the Inclusionary Development shall be developed in accordance with the COAH Prior Round regulations, the Uniform Housing Affordability Controls, N.J.A.C. 5:80-26.1 et seq. ("UHAC"), and all other applicable law, and said Inclusionary Development shall be deed restricted for a period of at least 30 years from the initial occupancy of the affordable units; and

**WHEREAS**, the Parties wish to enter into this Agreement, setting forth the terms, conditions, responsibilities and obligations of the Parties, and seek the Court's approval of this Agreement (if required by the Court);

**NOW, THEREFORE**, in consideration of the promises, the mutual obligations contained herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged by each of the Parties, the Parties hereto, each binding itself, its successors and assigns, do hereby covenant and agree, each with the other, as follows:

## **ARTICLE I – "PRD ZONE"**

**1.1 Purpose** The purpose of this Agreement is to settle the POA Intervention and to create a realistic opportunity for the construction of the Inclusionary Development, and to generate affordable housing credits for the Township to apply to its Gap (1999-2015) and Prospective Need (2015-2025) affordable housing obligations. The Inclusionary Development shall be substantially consistent with the concept plans, architectural elevations and floor plans attached hereto and made a part hereof as **Exhibit A** and zoning standards attached hereto and made a part hereof as **Exhibit B**, which have generally been reviewed and approved by the Township and the Township's professionals. The Inclusionary Development and the Commercial Lot shall be governed by "a PRD Zone" (the "PRD Zone") that will be adopted as part of Township Zoning Ordinances in accord with the timeframes and standards set forth herein.

**1.2 Standards** The PRD Zone shall incorporate the following requirements:

**1.2.1 Density.** The mixed-use development of the Development Property shall be developed with a residential unit yield not to exceed 304 total residential units (comprised of 120 existing residential units and 184 new residential units),

inclusive of the affordable housing component that is described in greater detail in Section 3.1 herein.

- 1.2.2 Setbacks.** The mixed-use development of the Development Property shall comply with the building setbacks set forth in the bulk chart attached as **Exhibit B**, which standards shall be adopted as part of the “PRD VI” Zone that will be part of Township Zoning Ordinances.
- 1.2.3 Commercial Lot.** The mixed-use development of the Development Property shall include an approximately nine (9) contiguous acre parcel both fronting on Route 522 and Griggs Drive, as shown on the attached **Exhibit A**. The Commercial Lot shall be zoned in accordance with the PRD Zone standards. The commercial development will pay any Non Residential Development Fee that may be in force at the time of site plan approval pursuant to N.J.S.A. 40:55D-8.1 et seq.
- 1.2.4 Amenities.** POA shall allow the affordable housing residents to use the various amenities in the Inclusionary Development designed to support the apartment uses, including, without limitation, the existing clubhouse, pool and tot lot, on the same terms and conditions as the market rate apartment residents.
- 1.2.5 RSIS.** The Parties agree that the residential portion of the Inclusionary Development shall be governed by the Residential Site Improvement Standards (“RSIS”) as to all matters covered by the RSIS.
- 1.2.6 Buffer and Linear Park.** Buffering shall be provided along Griggs Drive and along the common property line with the Summerfield development, including the construction of a Linear Park, in accord with the standards of the PRD VI Zone.
- 1.2.7 Pedestrian Pathway to Stop & Shop.** The Pedestrian pathway/sidewalk leading to the rear of the existing Super Stop & Shop shall include a new pathway/sidewalk, or an appropriate crosswalk leading to an existing pathway/sidewalk, on the Super Stop & Shop property sufficient to provide safe access for pedestrians to the Super Stop & Shop.
- 1.2.8 Maul Electric Driveway access.** If Maul Electric leaves its existing facility or otherwise abandons operations on the tract, the Maul Electric access driveway on Griggs Drive shall be closed and no further connection between the PRD VI zoned property shall be allowed onto Griggs Drive.
- 1.2.9 Existing Impervious Cover.** All existing impervious cover and associated storm water management facilities serving the existing Princeton Orchards Apartments shall be allowed to remain, and no additional storm water requirements shall be required for the existing improvements. All impervious coverage associated with any new development or improvements shall comply with current RSIS and NJDEP storm water regulations.
- 1.2.10 Cost Generation.** The Parties agree that the standards and requirements set forth

in Section 4.6 satisfy the requirement to limit cost generation.

**1.2.11 Site Remediation.** The Parties acknowledge that both the Stover Tract and the undeveloped portions of the Tract require soil remediation to address historic pesticide contamination. POA shall be solely responsible for all site remediation, and shall hold harmless the Township from any and all claims associated with the condition of the Stover Tract.

**1.2.12 Vacating and Relocation of Griggs Drive Cul de Sac.** The Parties agree that the proposed development plan contemplated by this Settlement Agreement requires that a portion of the existing Griggs Drive right of way, including the existing cul de sac, are to be vacated by the Township. The vacating of the Griggs Drive ROW shall be detailed in a separate Exhibit that shall include a metes and bounds description of the area to be vacated. The area of the Griggs Drive Right of Way to be vacated shall be reviewed and approved by the Planning Board as part of the site plan application. The Ordinance vacating the right of way shall be adopted within sixty (60) days following the site plan approval. Notwithstanding vacation of the Right of Way, any existing utility easements shall be specifically reserved. The work required to actually relocate the existing cul de sac shall be done by POA, at POA's expense, and shall be subject to inspection and approval by the Township.

## ARTICLE II - BASIC TERMS AND CONDITIONS

**2.1 Fairness Hearing.** This Agreement may be subject to Court approval at a Fairness Hearing to be scheduled at a date determined by the Court. If such Fairness Hearing is required by the Court, the Parties will work together to ensure that the Court approves this Agreement.

**2.2 Legal Challenges.** In the event of any legal challenges to the Court's approval of this Agreement pursuant to the East West Venture v. Ft Lee fairness procedure, or any appeal of any Approvals, the Parties shall diligently defend any such challenge and shall cooperate with each other regarding said defense. In addition, if any such challenge results in a modification of this Agreement or the Inclusionary Development, the Parties shall negotiate in good faith with the intent to draft a mutually-acceptable amended Agreement, provided that no such modification requires an increase or decrease in density from that agreed upon and reflected in the within Agreement. Each Party shall be responsible for their own legal fees and costs associated with any legal challenge.

**2.3 Continuation of DJ Action.** This Agreement does not purport to resolve all of the issues before the Court raised in the DJ Action. The Township and Planning Board may continue to prosecute the DJ Action, however, such continued prosecution shall not affect this Agreement and the Inclusionary Development that is authorized herein.

## ARTICLE III – POA OBLIGATIONS

**3.1 Affordable Housing Set-Aside.** POA shall have an obligation to deed-restrict forty-six (46) of the residential units in the Inclusionary Development as very low, low and moderate income affordable family rental units. Any such affordable rental units shall comply

with UHAC, applicable COAH affordable housing regulations (N.J.A.C. 5:93-1), any applicable order of the Court, and other applicable laws, including the 13% very low income requirement (a minimum of 13% very low income units, very low income being defined as 30% or less of the regional median income) embodied in the Fair Housing Act at N.J.S.A. 52:27D-329.1, et seq., in lieu of the UHAC requirement as to very low income of 10% at 35% or less of the regional median income.

- 3.1.1** The affordable units shall remain affordable rental units for a period of at least thirty (30) years from the date of their initial occupancy (“Deed-Restriction Period”) consistent with UHAC regulations (N.J.A.C. 5:80-26.11) or the then applicable regulation, so that the Township may count the units against its obligations to provide family rental affordable housing. This obligation includes, but is not limited to, POA’s obligation to comply with:
- (1) bedroom distribution requirements (10 three bedroom units (2 very low, 3 low and 5 moderate), 27 two bedroom units (6 very low, 8 low and 13 moderate) and 9 one bedroom units (2 very low, 3 low and 4 moderate),
  - (2) income split requirements (10 very low income units, 14 low income units and 22 moderate income units),
  - (3) pricing requirements pursuant to Court approval of the 2017 income limits,
  - (4) affirmative marketing requirements,
  - (5) candidate qualification and screening requirements,
  - (6) integrating the affordable units amongst the market rate units, and
  - (7) deed restriction and monitoring requirements.
- 3.1.2** Inspection and certification of existing 2 bedroom affordable family rental units shall occur when the unit has been vacated by the existing tenant. No existing tenant shall be displaced due to the imposition of the Deed Restriction. All existing two-bedroom units shall be inspected and certified to be in sound condition by an inspection performed by a licensed building inspector prior to acceptance of the existing units as affordable units. All existing two bedroom affordable units shall be subject to the administration of the affordable units pursuant to 3.1.1 above.
- 3.1.3** POA shall contract with the Township’s affordable housing administrative agent (“Administrative Agent”) for the administration of the affordable units and shall have the obligation to pay all costs associated with properly deed restricting and the long-term administration of the affordable units pursuant to 3.1.1 above in accordance with UHAC and other applicable laws for the Deed-Restriction Period. POA shall work with the Township and the Township’s Administrative Agent regarding any affordable housing monitoring requirements imposed by COAH or the Court.
- 3.1.4** The Parties agree that the affordable units are to be included in the Affordable Housing Plan to be approved and credited by the Court in the

DJ Action, and that the credits will be applied against the Township's Gap (1999-2015) and Prospective Need (2015-2025) obligations.

- 3.1.5 Upon written notice, POA shall provide detailed information requested by the Township, or the Township's Administrative Agent, within 30 days concerning POA's compliance with UHAC and other applicable laws.
- 3.1.6 The two (2) bedroom affordable family rental units shall be reasonably dispersed within the existing Princeton Orchards buildings. The one (1) and three (3) bedroom affordable family rental units shall be reasonably dispersed within the proposed new housing. The two (2) bedroom units shall be certified to be in sound condition as a result of an inspection performed by a licensed building inspector, and brought up to code as necessary, with the rehabilitation costs to be borne by POA. The two bedroom affordable controls shall be phased in as existing tenants terminate and vacate existing units. The Deed Restriction Period for each two bedroom unit shall commence on the date that an income qualified tenant commences occupancy of the Deed-Restricted Unit.
- 3.1.7 Each affordable unit shall contain at least one bedroom with an area of at least 150 square feet and no bedroom shall have an area of less than 100 square feet. The minimum area of each affordable unit shall be as follows:
  - a. One (1) bedroom – 650 square feet.
  - b. Two (2) bedroom – 875 square feet.
  - c. Three (3) bedroom – 1,150 square feet.

**3.2 Obligation Not To Oppose Township's Application for Approval of its Affordable Housing Plan.** As it pertains to the Township's Application for Approval of its Affordable Housing Plan, POA shall not directly or indirectly oppose or undertake any further action to interfere with the Court's adjudication of the Township's affordable housing obligations and compliance standards. POA shall also not directly or indirectly oppose or undertake any further action to interfere with the Court's approval and/or implementation of the Affordable Housing Plan, as it may be amended in any form, unless the Affordable Housing Plan deprives POA of any rights created hereunder, or unless any other defendants or interested parties undertake any action to obstruct or impede POA from securing such approvals as it needs to develop the Inclusionary Development on the Property.

**3.3 Obligation to Withdraw Objection To The Township's Affordable Housing Plan and Dismiss Complaint.** Upon approval of this Settlement Agreement by all Parties, and the Township adopting the Ordinance contemplated herein, POA agrees that it will withdraw its current objection to the Township's Affordable Housing Plan, dismiss with prejudice its Builder's Remedy Action entitled Richardson Fresh Ponds LLC v. Township of South Brunswick, et al., Docket No. MID-L-2638-16, filing a Stipulation of Dismissal with Prejudice substantially similar to that shown in **Exhibit C**, and that it will not object further to the Township's Affordable Housing Plan, as may be amended. However, nothing herein shall preclude either party from seeking

enforcement of this Settlement Agreement by Motion to Enforce Litigants Rights, and in the event such a Motion is filed, the prevailing party shall be entitled to legal fees.

#### **ARTICLE IV - OBLIGATIONS OF THE TOWNSHIP**

**4.1 Obligation To Adopt Zoning Ordinance.** The Township shall adopt the PRD Zoning Ordinance (the “**PRD Ordinance,**”) in substantially similar form as is attached hereto as “Exhibit B” within sixty (60) days following the Effective Date of this Settlement Agreement, subject to any Court approval that may be required. The PRD Ordinance shall be reasonably satisfactory to both the Township and POA (or its successor). In connection with the above actions, the Township shall comply with all applicable procedural requirements set forth in the Municipal Land Use Law and the case law interpreting same, including, but not limited to, legal notice requirements. All of the time periods set forth in this Section 4.1 may be subject to extension of time, which shall be reasonably agreed upon by the Parties, if at no fault of either Party the required actions cannot be completed within the time periods established.

**4.2 Obligation To Preserve The Zoning Ordinance.** The PRD Ordinance shall not be amended or rescinded for a period of ten (10) years, except upon the application of POA and consented to by the Township, or by Order of the Court.

**4.3 Representation regarding Sufficiency of Water and Sewer.** The Township agrees to reasonably assist with POA’s investigation and inquiry into the sufficiency of potable water and sewer capacity to service the proposed Inclusionary Development. The Parties acknowledge that the Township is currently conducting an engineering study to determine if sufficient sewer capacity exists. Any on-site water, sewer, or any other utility infrastructure or improvements required for the development of the proposed Inclusionary Development shall be at the sole cost and expense of POA. In addition, POA may be required to provide a pro rata contribution in accordance with N.J.S.A. 40:55D-42, as applicable, for any such improvements that are located off site or off tract.

**4.4 Obligation To Cooperate.** The Township acknowledges that in order for POA to construct its Inclusionary Development, POA will be required to obtain any and all necessary and applicable agreements, approvals, and permits from all relevant public entities and utilities; such as, by way of example only, the Township, the Planning Board, the County of Middlesex, the Middlesex County Planning Board, the New Jersey Department of Environmental Protection, the New Jersey Department of Transportation, Freehold Soil Conservation District and the like, including the Township’s ordinance requirements as to site plan and subdivision approval (the “**Required Approvals**”). The Township agrees to use all reasonable efforts to assist POA in its undertakings to obtain the Required Approvals.

**4.5 Obligation to Refrain From Imposing Cost-Generative Requirements.** The Township and Planning Board recognize that the Required Approvals and this Agreement all contemplate the development of an “Inclusionary Development” within the meaning of the Mount Laurel doctrine. Therefore, the Township and Planning Board will not impose development standards and/or requirements that have not been agreed to by the parties, and would otherwise be considered to be “cost generative.” In particular, the Parties agree that, as the inclusionary development described herein is providing a 25% affordable housing setaside, the following cost

controls shall apply to the Inclusionary Development:

- a. the Stover Tract shall be exempt from complying with the requirements of the Tree Replacement Ordinance, Section 62-121 to 133,
- b. no separate designated lighting for walkways and paths in buffer areas, other than ambient lighting from buildings and parking areas, those shown on the approved plans and such lighting as may be required to ensure pedestrian safety, shall be required,
- c. The Township and Planning Board agree that the concept plans, elevations and floor plans set forth in Exhibit A comply with the intent of Section 62-206 and there shall be no further requirements associated with Section 62-206 standards.

In addition, the Parties agree to the following in light of controlling cost generation aspects of this Inclusionary Development:

- d. all Township professional review escrow fees for review of the Inclusionary Development application from the date of application to the date of approval shall be capped at an amount not to exceed \$45,000.00.
- e. all off tract improvements related to traffic impacts associated with the Inclusionary Development shall be capped at \$100,000.00.
- f. all monetary obligations associated with the Tree Replacement Ordinance, Section 62-121 to 133, shall be capped at \$41,428.00 pursuant to the calculations shown in **Exhibit D**. During the course of design and/or construction, POA may elect to reduce this contribution by planting additional trees within the existing and proposed development. In such event, the replacement value of \$41,428.00 will be reduced based upon the number of additional trees planted in excess of 1,295.
- g. the Planning Board will allow a comprehensive storm water management system for the entire Inclusionary Development, regardless of internal lot configuration. Stormwater basin design standards shall adhere to RSIS and NJDEP requirements. The design standards in Section 62-2571 shall not apply if said standards are in addition to or exceed NJDEP and RSIS design standards.

**4.6** The Township will petition the Court to establish the Household Affordability Income Limits, with annual income adjustments as permitted by the Court.

## **ARTICLE V – OBLIGATIONS OF THE PLANNING BOARD**

**5.1 Obligation to Process POA’s Development Applications with Reasonable Diligence.** The Planning Board shall expedite the processing of POA’s development applications following POA’s filing of a complete application(s) and within the time limits imposed by the Municipal Land Use Law, N.J.S.A. 40:55D-1, et seq., (“MLUL”). In the event of any appeal of the Required Approvals, or Court approval of this Agreement, the Board shall process and take action on any development application by POA for the Property which decision may be conditioned upon the outcome of any pending appeal.

**5.2 Obligation to Refrain From Imposing Cost-Generative Requirements.** The Planning Board recognizes that the Required Approvals and this Agreement all contemplate the development of an “Inclusionary Development” within the meaning of the Mount Laurel doctrine.

The Planning Board agrees to adhere to the specific requirements of Section 4.6 above related to specific cost generation requirements associated with the Inclusionary Development as this inclusionary development is significantly exceeding the typical affordable housing rental setaside of 15% as generally approved in court and COAH matters by providing a 25% affordable family rental setaside. Except as to the standards and requirements set forth in this Agreement, nothing shall prevent POA from applying for a waiver or bulk variance from any standard imposed by the Township's Land Use and Development Ordinance, as applicable, and the standards set forth in the MLUL, as applicable. Notwithstanding the above, the Township Council and the Planning Board are under no obligation to grant or approve any request for a bulk variance, waiver or de minimus exception.

## **ARTICLE VI – MUTUAL OBLIGATIONS**

**6.1 Escrow Agreement.** Within thirty (30) days of the Effective Date (as this term is defined herein), POA shall deposit all necessary escrow monies with the Township to be utilized to tender payment of reasonable fees for professional services, including legal, engineering, and planning services being provided in conjunction with the Required Approvals. Upon receipt of all Approvals in final and unappealable form, POA shall deposit all necessary escrow monies with the Township to be utilized to tender payment of reasonable fees for professional services, including legal, engineering, building subcode and planning services for construction inspection of the Inclusionary Development.

**6.2 Obligation To Comply with State Regulations.** The Parties shall comply with any and all Federal, State, County and local laws, rules, regulations, statutes, ordinances, permits, resolutions, judgments, orders, decrees, directives, interpretations, standards, licenses, approvals, and similarly binding authority, applicable to the Inclusionary Development or the performance by the Parties of their respective obligations or the exercise by the Parties of their respective rights in connection with this Agreement.

**6.3 Mutual Good Faith, Cooperation and Assistance.** The Parties shall exercise good faith, cooperate, and assist each other in fulfilling the intent and purpose of this Agreement, including, but not limited to, the approval of this Agreement by the Court (if required), the Required Approvals, the development of the Property consistent with the terms hereof, and the defense of any challenge with regard to any of the foregoing.

**6.4 Failure to Adopt PRD Ordinance.** If the Township fails to adopt the PRD Ordinance within the time frames set forth in Section 4.1, then, at the option of POA, in its sole discretion and by prior written notice to the Township in accordance with Article IX of this Agreement, the Parties shall be restored to the status quo ante to the date hereof and all claims and defenses available now shall be available to the Parties:

**6.4.1** In the event that POA decides that the Parties shall be restored to the status quo ante to the date hereof and all claims and defenses available now shall be available to the Parties, no Party shall be entitled to use this Agreement, or negotiations in conjunction therewith.

**6.5 Defense of Agreement.** Each party exclusively shall be responsible for all costs that they may incur in obtaining Court approval of this Agreement (if required) and any appeal therefrom, or from obtaining the Required Approvals or the approval of the Affordable Housing Plan or any part thereof except as is otherwise provided in this Agreement. The Parties shall diligently defend any such challenge.

## ARTICLE VII - AFFORDABLE HOUSING CREDITS

**7.1 Demonstration of Creditworthiness of Units.** Upon written notice, POA agrees to supply the Township and the Township's Administrative Agent, within 30 days, all documents within its possession that may be reasonably necessary to demonstrate to the Court or any other reviewing agency, entity or body, the creditworthiness of the affordable units.

## ARTICLE VIII - COOPERATION AND COMPLIANCE

**8.1 Implementation And Enforcement Of Agreement.** The Parties agree to cooperate with each other, provide all reasonable and necessary documentation, and take all actions reasonably necessary to satisfy the terms and conditions hereof and assure compliance with the terms of this Agreement, subject to prior written agreement between the Parties on payment by the requesting party of the requested party's direct costs and expenses in connection with such assistance. The Township's obligation to cooperate shall be further conditioned upon POA paying and maintaining current real estate taxes and all other municipal assessments, subject to any exemption for the Inclusionary Development.

## ARTICLE IX - NOTICES

**9.1 Notices.** Any notice or transmittal of any document required, permitted or appropriate hereunder and/or any transmittal between the Parties relating to the Property (herein "Notice[s]") shall be written and shall be served upon the respective Parties by facsimile or by certified mail, return receipt requested, or recognized overnight or personal carrier such as, for example, Federal Express, with certified proof of receipt, and, where feasible (for example, any transmittal of less than fifty (50) pages), and in addition thereto, a facsimile delivery shall be provided. All Notices shall be deemed received upon the date of delivery set forth in such certified proof, and all times for performance based upon notice shall be from the date set forth therein. Delivery shall be affected as follows, subject to change as to the person(s) to be notified and/or their respective addresses upon ten (10) days' written notice as provided herein:

**TO POA:**

**Princeton Orchards Assoc., LLC**  
**c/o Guntram J. Weissenberger**  
The Westover Companies  
550 American Avenue, Suite 1  
King of Prussia, PA 19406

**WITH COPIES TO:**

**Fox Rothschild, LLP**  
**Attention: Henry L. Kent-Smith, Esq.**  
997 Lenox Drive, Building 3  
Lawrenceville, NJ 08648

Fax: 609-482-8901  
Email: hkent-smith@foxrothschild.com

**TO THE TOWNSHIP OF SOUTH BRUNSWICK:**

**Clerk of Township of South Brunswick**  
540 Ridge Road  
P.O. Box 190  
Monmouth Junction, NJ 08852

**WITH COPIES TO:** Law Department, Township of South Brunswick  
540 Ridge Road  
P.O. Box 190  
Monmouth Junction, NJ 08852  
Attn: Donald J. Sears, Director of Law  
PH: (732) 329-4000 ext. 7311  
Email: dsears@sbtanj.net

**TO THE SOUTH BRUNSWICK PLANNING BOARD:**

South Brunswick Planning Board  
Township of South Brunswick  
540 Ridge Road  
Monmouth Junction, NJ 08852  
Attn: Director of Planning  
PH: (732) 329-4000 X7239

**WITH COPIES TO:** Thomas F. Collins, Jr., Esq.  
Thomas J. Molica, Jr., Esq.  
Vogel, Chait, Collins & Schneider, P.C.  
25 Lindsley Drive, Suite 200  
Morristown, NJ 07960-4454  
PH: (908) 538-3800  
Email: tcollins@vccslaw.com  
tmolica@vccslaw.com

In the event any of the individuals identified above has a successor, the individual identified shall, in writing, name the successor and notify all others identified of their successor.

**ARTICLE X - MISCELLANEOUS**

**10.1 Severability.** Unless otherwise specified, it is intended that the provisions of this Agreement are to be severable. The validity of any article, section, clause or provisions of this Agreement shall not affect the validity of the remaining articles, sections, clauses or provisions hereof. If any section of this Agreement shall be adjudged by a court to be invalid, illegal, or unenforceable in any respect, such determination shall not affect the remaining sections.

**10.2 Successors Bound.** The provisions of this Agreement shall run with the land, and the obligations and benefits hereunder shall be binding upon and inure to the benefit of the Parties, their successors and assigns, including any person, corporation, partnership or other legal entity which at any particular time may have a fee title interest in the Property which is the subject of this Agreement. This Agreement may be enforced by any of the Parties, and their successors and assigns, as herein set forth.

**10.3 Recording of Agreement.** This Agreement shall be recorded in the office of the Middlesex County Clerk.

**10.4 No Modification.** This Agreement may not be modified, amended or altered in any way except by a writing signed by each of the Parties.

**10.5 Effect of Counterparts.** This Agreement may be executed simultaneously in one (1) or more facsimile or e-mail counterparts, each of which shall be deemed an original. Any facsimile or e-mail counterpart forthwith shall be supplemented by the delivery of an original counterpart pursuant to the terms for notice set forth herein.

**10.6 Voluntary Agreement.** The Parties acknowledge that each has entered into this Agreement on its own volition without coercion or duress after consulting with its counsel, that each party is the proper person and possesses the authority to sign the Agreement, that this Agreement contains the entire understanding of the Parties and that there are no representations, warranties, covenants or undertakings other than those expressly set forth herein.

**10.7 Interpretation.** Each of the Parties hereto acknowledges that this Agreement was not drafted by any one of the Parties, but was drafted, negotiated and reviewed by all Parties, and, therefore, the presumption of resolving ambiguities against the drafter shall not apply. Each of the Parties expressly represents to the other Parties that: (a) it has been represented by counsel in connection with negotiating the terms of this Agreement; and (b) it has conferred due authority for execution of this Agreement upon the person(s) executing it.

**10.8 Necessity of Required Approvals.** The Parties recognize that the site plans and subdivision required to implement the Inclusionary Development provided in this Agreement, and such other actions as may be required of the Planning Board or Township under this Agreement, cannot be approved except on the basis of the independent reasonable judgment by the Planning Board and the Township Council, as appropriate, and in accordance with the procedures established by law. Nothing in this Agreement is intended to constrain that judgment or to authorize any action not taken in accordance with procedures established by law. Similarly, nothing herein is intended to preclude POA from appealing any denials of or conditions imposed by the Planning Board in accordance with the MLUL or taking any other action permitted by law, subject to POA's compliance with the terms of this Agreement.

**10.9 Schedules.** Any and all Exhibits and Schedules annexed to this Agreement are hereby made a part of this Agreement by this reference thereto. Any and all Exhibits and Schedules now and/or in the future are hereby made or will be made a part of this Agreement only upon the prior written approval of all Parties.

**10.10 Entire Agreement.** This Agreement constitutes the entire agreement between the Parties and supersedes all prior oral and written agreements between the Parties with respect to the subject matter hereof except as otherwise provided herein.

**10.11 Conflict Of Interest.** No member, official or employee of the Township or the Planning Board shall have any direct or indirect interest in this Agreement, nor participate in any decision relating to the Agreement which is prohibited by law, absent the need to invoke the rule of necessity.

**10.12 Effective Date.** Anything herein contained to the contrary notwithstanding, the effective date (“Effective Date”) of this Agreement shall be the date upon which the last of the Parties to execute this Agreement has executed and delivered this Agreement.

**10.13 Waiver.** The Parties agree that this Agreement is enforceable. Each of the Parties waives all rights to challenge the validity or the ability to enforce this Agreement. Failure to enforce any of the provisions of this Agreement by any of the Parties shall not be construed as a waiver of these or other provisions.

**10.14 Captions.** The captions and titles to this Agreement and the several sections and subsections are inserted for purposes of convenience of reference only and are in no way to be construed as limiting or modifying the scope and intent of the various provisions of this Agreement.

**10.15 Default.** In the event that any of the Parties shall fail to perform any material obligation on its part to be performed pursuant to the terms and conditions of this Agreement, unless such obligation is waived by all of the other Parties for whose benefit such obligation is intended, or by the Court, such failure to perform shall constitute a default of this Agreement. Upon the occurrence of any default, the non-defaulting Party shall provide notice of the default and the defaulting Party shall have a reasonable opportunity to cure the default within forty-five (45) days. In the event the defaulting Party fails to cure within forty-five (45) days or such reasonable period of time as may be appropriate, the Party(ies) for whose benefit such obligation is intended shall be entitled to exercise any and all rights and remedies that may be available in equity or under the laws of the State of New Jersey, including the right of specific performance to the extent available. Further, the Parties may apply to the Court for relief, by way of a motion for enforcement of litigant’s rights.

**10.16 Notice of Actions.** The Parties and their respective counsel agree immediately to provide each other with notice of any lawsuits, actions or governmental declarations threatened or pending by third parties of which they are actually aware which may affect the provisions of this Agreement.

**10.17 Governing Law, Construction, Resolution of Disputes.** This Agreement has been entered into and shall be construed, governed and enforced in accordance with the laws of the State of New Jersey without giving effect to provisions relating to the conflicts of law. Jurisdiction of any litigation ensuing with regard to this Agreement exclusively shall be in the Superior Court of New Jersey, with venue in Middlesex County.

**10.18 DJ Action.** The Parties acknowledge that this Agreement cannot be modified by the DJ Action or any amendments to the Township’s Affordable Housing Plan or Land Use and

Development Ordinances and this Agreement shall control with respect to those matters as applied to the Development Property. Upon the entry of a Judgment of Compliance and Repose in the Township's DJ Action, and after the DJ Action is concluded, the Court shall retain jurisdiction to ensure compliance with the terms and conditions of this Agreement. As to any inconsistencies between the Required Approvals and this Agreement, the Required Approvals shall control. In the event of an appeal of the DJ Action, the terms and conditions of this Agreement shall control and shall not be effected by the outcome of any such appeal.

**10.19 Recitals.** The recitals of this Agreement are incorporated herein and made a part hereof.

**THE REMAINDER OF THIS PAGE IS PURPOSEFULLY BLANK**

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be properly executed, their corporate seals affixed and attested and this Agreement to be effective as of the Effective Date.

Witness/Attest:

PRINCETON ORCHARDS ASSOCIATES,  
LLC

*Kenneth Callahan*  
Name: Kenneth Callahan  
Title: COO

By: *Quintan J. Weissenberger, Jr.*  
Name: Quintan J. Weissenberger, Jr.  
Title: Managing Member

Dated: 3/16/18

Witness/Attest:

TOWNSHIP OF SOUTH BRUNSWICK  
By: Charlie Carley,  
as its DEPUTY MAYOR

*Barbara Nyitrai*  
Barbara Nyitrai, Township Clerk

By: *Charlie Carley*  
Charlie Carley, Deputy Mayor

Dated: 2/28/2018

Witness/Attest:

TOWNSHIP OF SOUTH BRUNSWICK  
PLANNING BOARD  
By:

*Tammy Scimone*  
Tammy Scimone, Secretary

By: *Paul Prodromo*  
Paul Prodromo, Chair

Dated: 3/9/18

STATE OF PA :

SS  
COUNTY OF Montgomery :

I CERTIFY that on March 16, 2018, Kenneth Goffman personally came before me and he/she acknowledged under oath, to my satisfaction, that:

(a) he/she is the COO of Princeton Orchards Associates, LLC, the Limited Liability Company named in this document;

(b) he/she is the attesting witness to the signing of this document by Grantman Weissenberg Jr who is the Managing Member;

(c) this document was signed and delivered by the Company as its voluntary act duly authorized by a proper resolution;

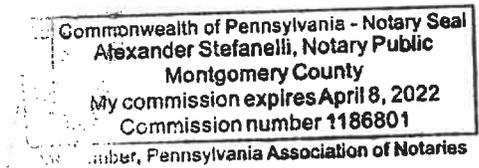
(d) he/she knows the proper seal of the Company (if any), which was affixed to this document; and

(e) he/she signed this proof to attest to the truth of these facts.

Signed and sworn to before me  
On March 16, 2018

Alexander Stefanelli

Kenneth Goffman  
Kenneth Goffman  
COO



STATE OF NEW JERSEY:  
SS  
COUNTY OF MIDDLESEX:

I CERTIFY that on February 28, 2018, BARBARA NYITRAI, personally came before me and she acknowledged under oath, to my satisfaction, that:

- (a) she is the Township Clerk of the Township of South Brunswick, the municipal corporation named in this document;
- (b) she is the attesting witness to the signing of this document by Charlie Carley, who is the Deputy Mayor of the Township of South Brunswick;
- (c) this document was signed and delivered by the Township of South Brunswick as its voluntary act duly authorized by a proper resolution of the Township Council;
- (d) she knows the proper seal of the Township of South Brunswick which was affixed to this document; and
- (e) she signed this proof to attest to the truth of these facts.

Signed and sworn to before me  
On February 28, 2018

  
Donald J. Sears  
An Attorney At Law  
In the State of New Jersey

  
Barbara Nyitrai, Township Clerk

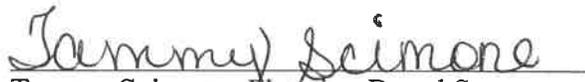
STATE OF NEW JERSEY:  
SS  
COUNTY OF MIDDLESEX:

I CERTIFY that on March 9, 2018, TAMMY SCIMONE, personally came before me and she acknowledged under oath, to my satisfaction, that:

- (a) she is the Secretary of the South Brunswick Planning Board, the municipal corporation named in this document;
- (b) she is the attesting witness to the signing of this document by Paul Prodromo, who is the Chairperson of the South Brunswick Planning Board;
- (c) this document was signed and delivered by the South Brunswick Planning Board as its voluntary act duly authorized by a proper resolution of the Board;
- (d) she knows the proper seal of the Board (if any) which was affixed to this document; and
- (e) she signed this proof to attest to the truth of these facts.

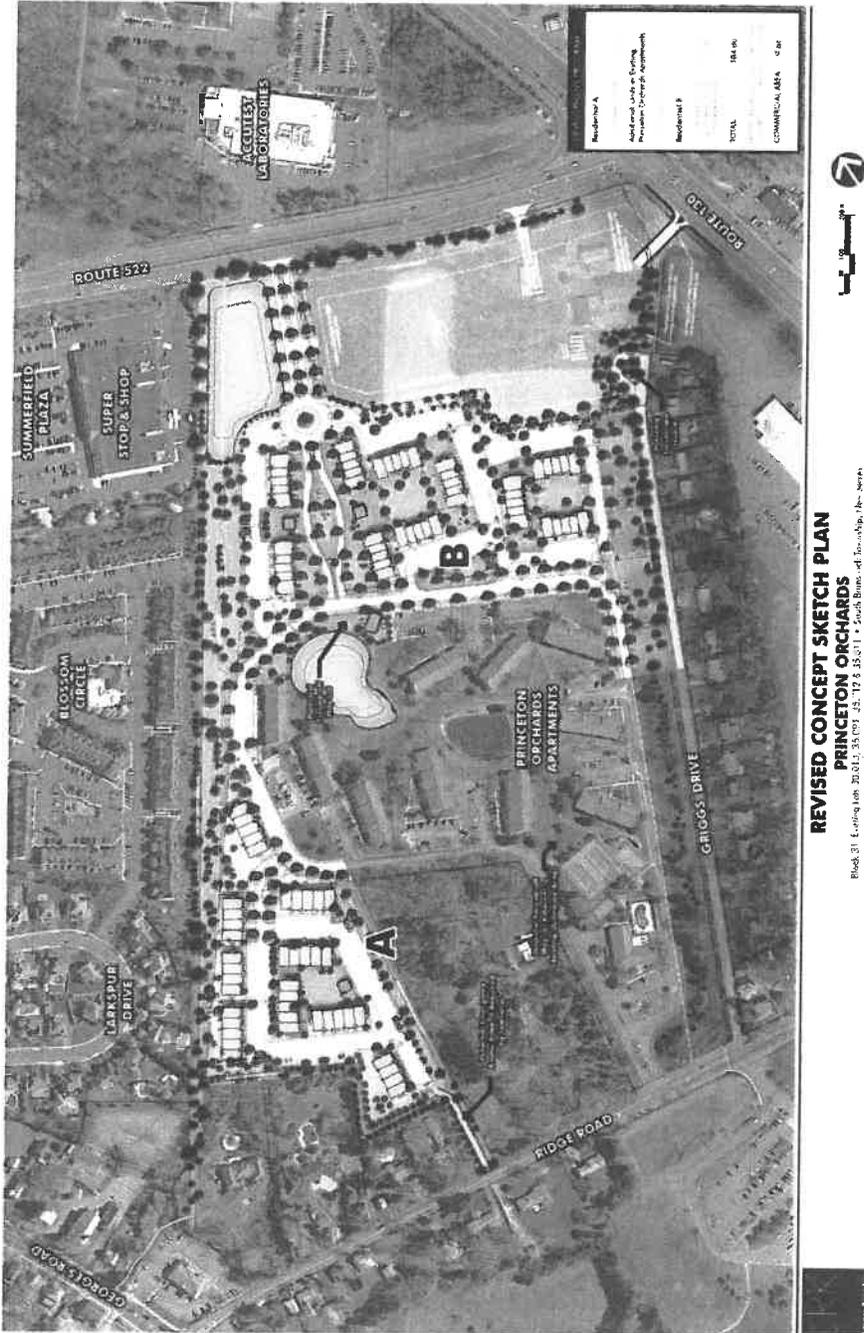
Signed and sworn to before me  
On March 9, 2018

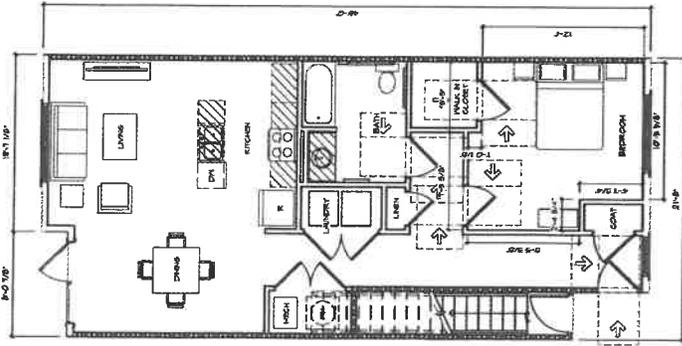
  
\_\_\_\_\_  
Donald J. Sears  
An Attorney at Law  
In the State of New Jersey

  
\_\_\_\_\_  
Tammy Scimone, Planning Board Secretary

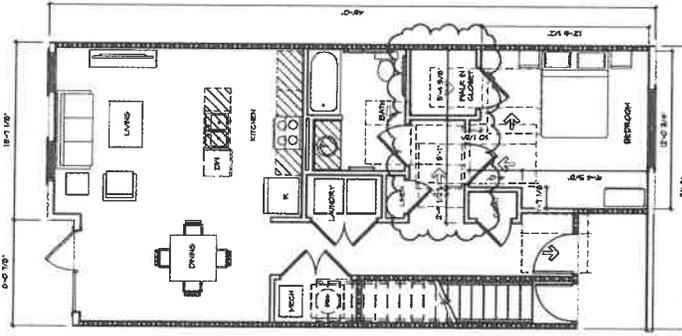
# EXHIBIT A

## CONCEPT PLAN FOR INCLUSIONARY DEVELOPMENT ARCHITECTURAL ELEVATIONS AND FLOOR PLANS

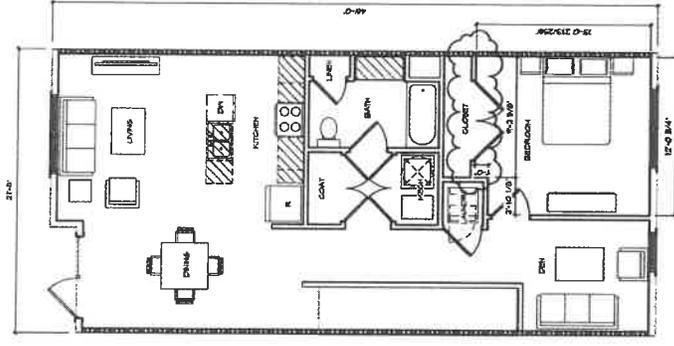




1 UNIT A1 PLAN  
SCALE: 1/4" = 1'-0"



3 UNIT A1-ALT PLAN  
SCALE: 1/4" = 1'-0"

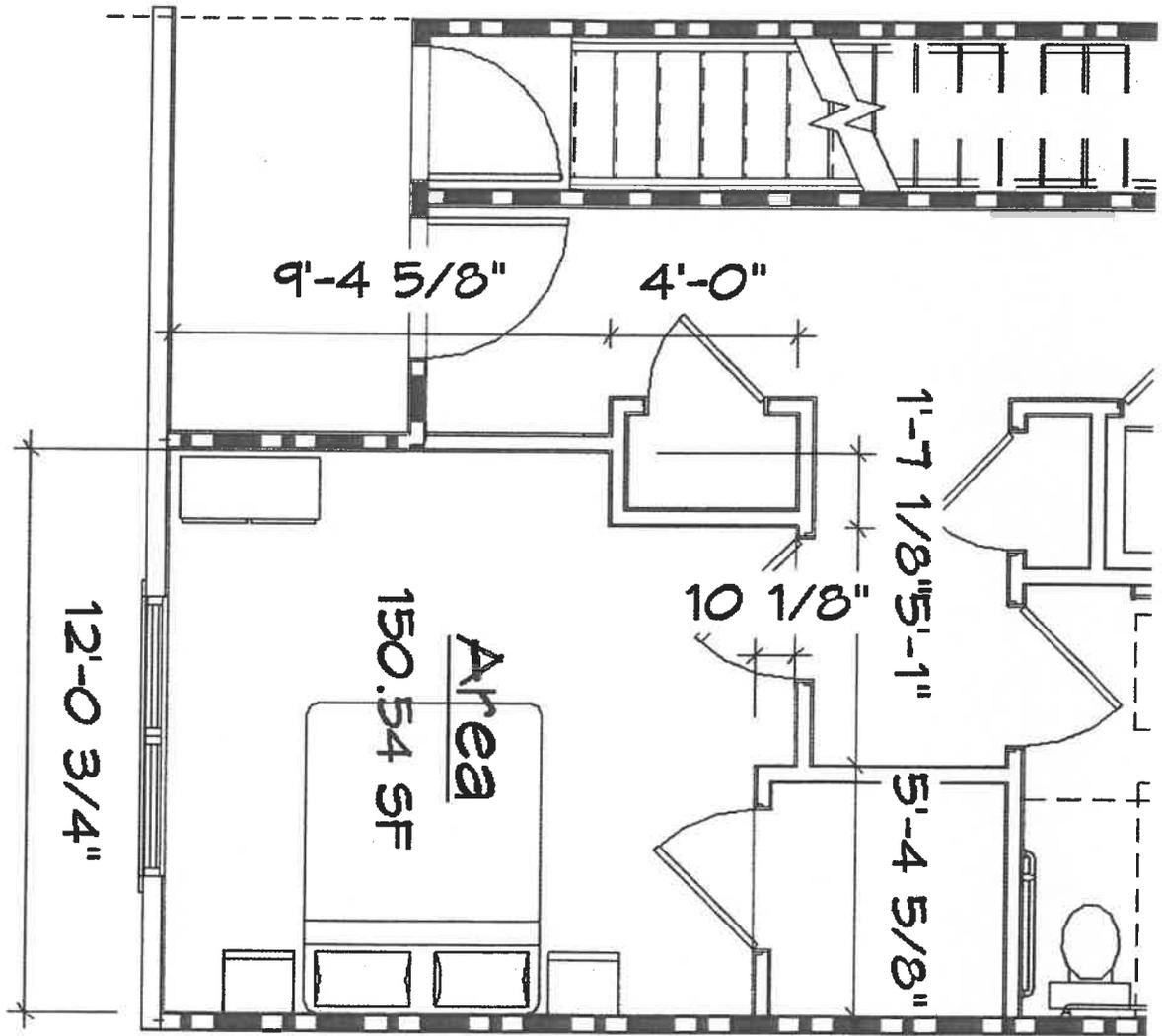


2 UNIT A2 PLAN  
SCALE: 1/4" = 1'-0"

**CONCEPT UNIT PLANS**

**PRINCETON ORCHARDS**  
 Block 31 - Existing Lots 30,013, 35,091, 35,712 & 35,811 • South Brunswick Township, New Jersey  
 February 2, 2018; Last Revised March 2, 2018 • Project Number: C0313018.00





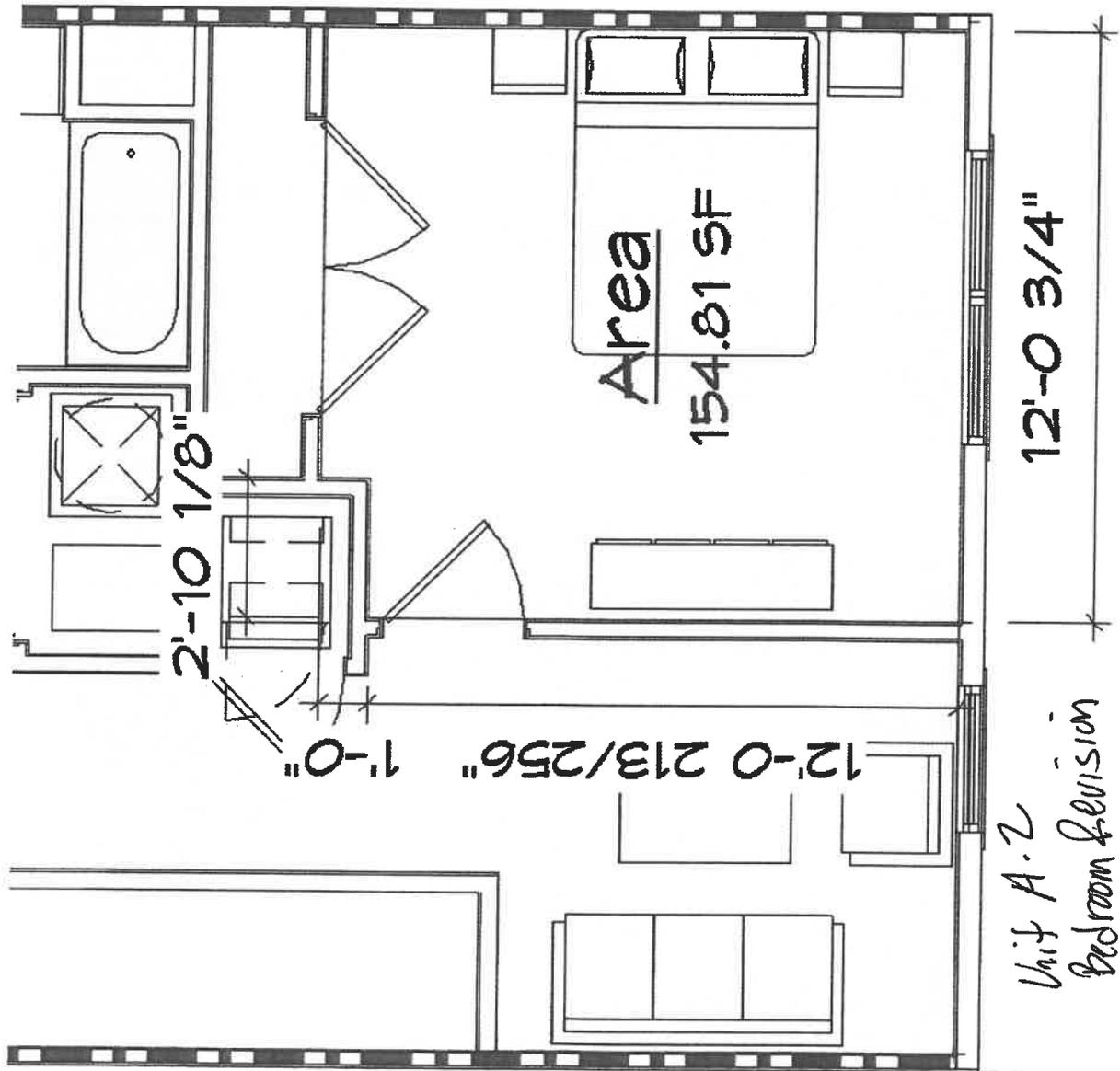
12'-6 1/2"

Unit A-1

Bedroom

Revisia

03.02.2018

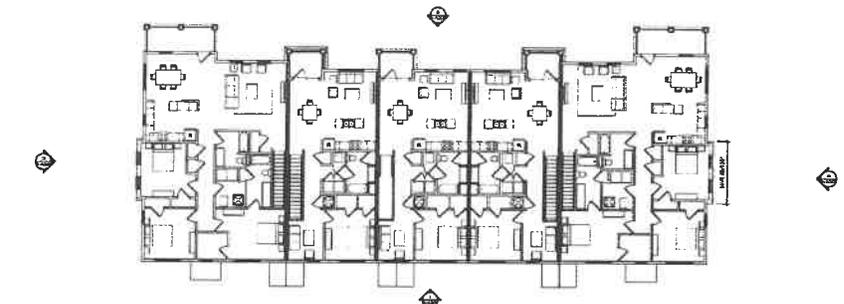


03.02.2018

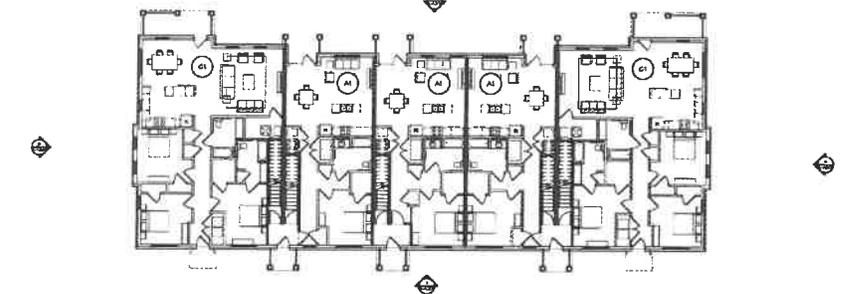
Unit A-2  
Bedroom Revision



Architect: [unreadable] 1000 [unreadable] Princeton, NJ 08540  
Project: [unreadable] 1000 [unreadable] Princeton, NJ 08540  
Date: [unreadable] 2018



2 BLDG - A SECOND FLOOR  
SCALE: 1/8" = 1'-0"



1 BLDG - A GROUND FLOOR  
SCALE: 1/8" = 1'-0"

**CONCEPT FLOOR PLANS & ELEVATIONS**  
**PRINCETON ORCHARDS**  
Block 31 - Easing Lane 30.013, 35.091, 35.712 & 35.811 - South Brunswick Township, New Jersey  
February 2, 2018 • Project Number: 03.13018.00



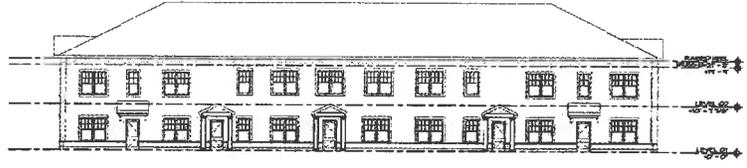
3 BLDG - A REAR ELEVATION  
SCALE: 1/8" = 1'-0"



2 BLDG - A LEFT ELEVATION  
SCALE: 1/8" = 1'-0"



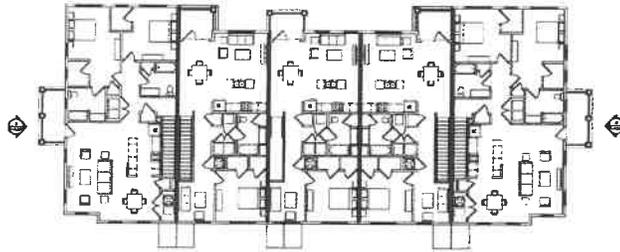
4 BLDG - A RIGHT ELEVATION  
SCALE: 1/8" = 1'-0"



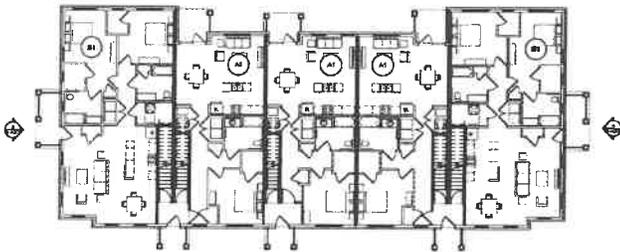
1 BLDG - A FRONT ELEVATION  
SCALE: 1/8" = 1'-0"

**CONCEPT FLOOR PLANS & ELEVATIONS**  
**PRINCETON ORCHARDS**  
Block 31 - Easing Lane 30.013, 35.091, 35.712 & 35.811 - South Brunswick Township, New Jersey  
February 2, 2018 • Project Number: 03.13018.00

Architectural Scale: 1/8" = 1'-0" (Architectural Scale: 1/8" = 1'-0")



2 BLDG - B SECOND FLOOR  
SCALE: 1/8" = 1'-0"



1 BLDG - B GROUND FLOOR  
SCALE: 1/8" = 1'-0"

**CONCEPT FLOOR PLANS & ELEVATIONS**

**PRINCETON ORCHARDS**

Block 31 - Existing Lots 30,013, 35,091, 35,712 & 35,811 - South Brunswick Township, New Jersey  
February 2, 2018 - Project Number: 03.13018.00

Architectural Scale: 1/8" = 1'-0" (Architectural Scale: 1/8" = 1'-0")



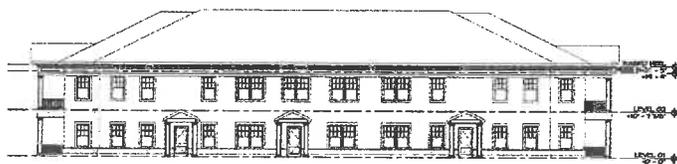
3 BLDG - B REAR ELEVATION  
SCALE: 1/8" = 1'-0"



2 BLDG - B LEFT ELEVATION  
SCALE: 1/8" = 1'-0"



4 BLDG - B RIGHT ELEVATION  
SCALE: 1/8" = 1'-0"



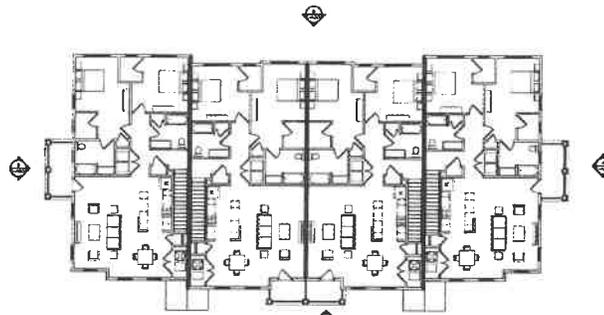
1 BLDG - B FRONT ELEVATION  
SCALE: 1/8" = 1'-0"

**CONCEPT FLOOR PLANS & ELEVATIONS**

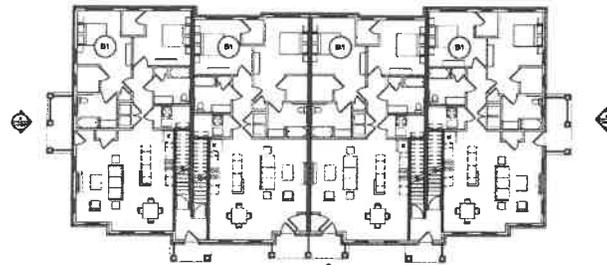
**PRINCETON ORCHARDS**

Block 31 - Existing Lots 30,013, 35,091, 35,712 & 35,811 - South Brunswick Township, New Jersey  
February 2, 2018 - Project Number: 03.13018.00

Multi-Stage Building, Inc. No. 18, 1800 American Road, Suite 100, Princeton, NJ 08540, Tel: 609.981.1100, Fax: 609.981.1101, www.msb.com



2 BLDG - C SECOND FLOOR  
SCALE: 1/8" = 1'-0"



1 BLDG - C GROUND FLOOR  
SCALE: 1/8" = 1'-0"

**CONCEPT FLOOR PLANS & ELEVATIONS**  
**PRINCETON ORCHARDS**  
Block 31 - Existing Lots 30.013, 35.001, 35.712 & 35.811 - South Brunswick Township, New Jersey  
February 2, 2018 • Project Number: 0313018.00

Multi-Stage Building, Inc. No. 18, 1800 American Road, Suite 100, Princeton, NJ 08540, Tel: 609.981.1100, Fax: 609.981.1101, www.msb.com



3 BLDG - C REAR ELEVATION  
SCALE: 1/8" = 1'-0"



2 BLDG - C LEFT ELEVATION  
SCALE: 1/8" = 1'-0"



4 BLDG - C RIGHT ELEVATION  
SCALE: 1/8" = 1'-0"



1 BLDG - C FRONT ELEVATION  
SCALE: 1/8" = 1'-0"

**CONCEPT FLOOR PLANS & ELEVATIONS**  
**PRINCETON ORCHARDS**  
Block 31 - Existing Lots 30.013, 35.001, 35.712 & 35.811 - South Brunswick Township, New Jersey  
February 2, 2018 • Project Number: 0313018.00



## **EXHIBIT B**

### **Subdivision XV(B) PRD VI (Mixed Development Zone)**

#### **Section 62-867 – Purpose**

The PRD VI Zone includes Block 31, Lots 30.012, 35.09, 35.712 and 35.811 (hereafter, “the Tract”) containing approximately 55 acres. The purposes of the PRD Zone are to permit up to nine (9) acres of commercial development adjacent to the intersection of Routes 522 and 130 (excluding any future right-of-way dedications or vacations)(the “Commercial Tract”); render the 120 existing multi-family units within the existing Princeton Orchards Apartments a conforming use and permit the construction of 184 additional housing units on the remaining undeveloped acres (the “Residential Tract”). The PRD VI Zone shall permit within the Residential Tract up to 304 total units, consisting of 120 existing apartments and 184 new apartments, of which an amount equal to 25% of the new apartments (46 units) shall be set-aside for and affordable to very low, low and moderate income households.

#### **Section 62-868 – Uses Permitted**

The following uses are permitted in the PRD VI district:

- (1) Multifamily residential units, but only within the Residential Tract.
- (2) Within the Commercial Tract:
  - a. Communitywide and area-wide retail establishments, including department and variety stores, supermarkets, clothing stores, furniture and appliance stores, drugstores and liquor stores, but excluding warehouse/discount clubs.
  - b. Communitywide and area-wide service activities, excluding movie theaters, but including banks, restaurants, fast food restaurants, exercise and dance schools, taverns, travel agencies, indoor recreation facilities and fitness centers and other such ancillary supermarket services.
  - c. Offices for physicians, dentists, engineers, lawyers, architects, public accountants, real estate and insurance brokers, city planners and similar professions.
  - d. Medical HMO facilities and medical laboratories.
  - e. Educational facilities for learning and training.
  - f. Health Clubs.
  - g. Dance studios.
  - h. Medical service and retail medical supply.
  - i. Duplicating or office supply service.
  - j. Product demonstration, display or showroom facilities.
  - k. Conference or training centers.
  - l. Family recreation facilities.
  - m. Nursing homes.
  - n. Child care centers.
  - o. Assisted living facilities, with an affordable housing component.
  - p. Laboratory or research facilities.
  - q. Existing Contractor business and related storage.

**Section 62-869 – Uses permitted as conditional uses.**

Uses permitted as conditional uses in the PRD VI district shall be subject to planning board approval under N.J.S.A. 40:55D-67. Provisions and performance standards for conditional uses shall apply, as specified in this chapter. The following uses shall be permitted as conditional uses:

- (1) Community buildings or activities of a quasipublic, social or fraternal character.

**Section 62-870 – Accessory uses permitted.**

Accessory uses permitted in the PRD VI district:

- (1) Private garages.
- (2) Community swimming pools, tennis courts, basketball courts, tot lots, volley ball courts and other recreational facilities.
- (3) Gazebos, trellises, arbors, pergolas, decks, patios, gardens and landscaped areas including fountains, ponds and other water features.
- (4) A clubhouse, including, but not limited to: a fitness center; multi-purpose rooms, wellness center; leasing office; entertainment center; meeting rooms; resident food and beverage area; and business center.
- (5) Maintenance and storage buildings.
- (6) Signs, as regulated in this chapter.
- (7) Fences and walls, as regulated in this chapter.

**Section 62-871 – Tract and open space requirements.**

- (1) It is recognized that the Tract may be subdivided. The Tract bulk standards associated within the PRD VI Zone shall apply to the overall Tract. In the event there are subdivided lots within the Tract, there may be easements for vehicular and pedestrian circulation, shared parking and storm water management facilities for use on a Tract wide basis, so as to permit the development of the PRD Zone as a comprehensive mixed use project.
- (2) The maximum building coverage shall be 25 percent of the total land area of the Tract.
- (3) The minimum open space standard shall be 30 percent of the Tract.
- (4) **Residential Tract buffers.** Residential Tract buffers shall be provided along the residential portion of the Tract (the portion south of the proposed commercial subdivision line), which residential buffers shall include a landscaped berm of 20' in width within the buffer as follows:
  - a. 65 feet along the western property line.
  - b. 100 feet along the eastern property line, adjacent to the existing right of way of Griggs Drive.
  - c. 50 feet along the southern property line, including adjacent to Ridge Road and along the westerly property line of Lot 35.812.
- (5) **Commercial Tract buffers.** Commercial Tract buffers shall be as follows:

- a. 40 feet along the northerly property line, adjacent to Route 522 and Route 130 frontage.
  - b. 10 feet along the remaining property lines.
- (6) **Griggs Drive cul-de-sac bulb buffer.** There shall be a 50 foot buffer adjacent to the cul-de-sac bulb of Griggs Drive. The buffer shall begin at the subdivision line separating the Residential Tract from the Commercial Tract. There shall be a landscaped berm of 20' in width within the 50 foot buffer. The purpose of the landscaped berm is to provide additional screening of existing and proposed non-residential improvements for the properties adjacent to this portion of the PRD VI zone.
- (7) The following encroachments into the Tract buffers are permitted:
- a. Pedestrian trails, sidewalks, signs, retaining walls, and landscaped areas are permitted in all buffer areas.
  - b. Stormwater facilities shall not be located within 20 feet of the Tract boundary line.
  - c. Driveways are permitted within the Tract buffer adjacent to Route 522.
  - d. An access drive is permitted to connect Griggs Drive to the existing Contractor Business. However, in the event the existing Contractor Business ceases operation, the Contractor Business driveway onto Griggs Drive shall be closed, and no interconnection between the Tract and Griggs Drive shall be allowed.
  - e. Emergency access if required by Township
- (8) Existing roads, existing parking areas and related improvements are exempt from all Tract buffer requirements.

### **Section 62- 872 – Area, Yard, and Density Tract Requirements**

- (1) The maximum residential yield shall be 304 units.
  - (2) The maximum impervious coverage shall be 70%.
  - (3) Multiple principal buildings and multiple principal uses shall be allowed on a single lot.
  - (4) No building shall exceed three (3) stories and 40 feet in height, except as regulated by the height exception provision of Section 62-2341 of this chapter.
- (5) **Residential Building Setbacks.** Residential buildings shall be setback at least:
- a. 400 feet from the northerly property line, adjacent to Route 522.
  - b. 65 feet from the westerly property line, adjacent to Summerfield.
  - c. 50 feet from the southerly property line, adjacent to Ridge Road.
  - d. 100 feet from the easterly property line, adjacent to Griggs Drive.
  - e. 10 feet from any street or driveway.
  - f. 6 feet from any parking area.
- (6) **Commercial Building Setbacks.** Commercial buildings shall be setback at least:
- a. 100 feet from Route 522 and Route 130.
  - b. 40 feet from all other property lines.
  - c. 10 feet from any street or driveway (other than Route 522 and Route 130).
  - d. 5 feet from any parking area.

- (7) Minimum distances between buildings. The following minimum distances between buildings is required:
  - a. 50 feet between residential and nonresidential buildings within the Tract, irrespective of a subdivision of the tract.
  - b. 30 feet between residential buildings, exclusive of covered and uncovered stairs and stoops, stairways, balconies, decks, cornices, eaves, gutters, bay windows, chimneys and other projections from buildings.
  
- (8) Non-residential uses shall be subject to the following bulk standards:
  - a. Minimum lot area: 40,000 square feet.
  - b. Minimum lot frontage: 200 feet.
  - c. Front Yard setback : 100 feet from Route 522 and Route 130
  - d. Minimum rear setback: 40 feet
  - e. Maximum Building Coverage: 25%
  - f. Maximum lot coverage: 70 %
  
- (9) All residential development must be served by public water and sanitary sewer service.

**Section 62-873 – Off-street parking requirements and loading requirements.**

- (1) Off-street parking in the PRD VI district shall be provided as follows: All off-street parking shall be designed to comply with the standards set forth in the New Jersey Residential Site Improvements Standard (RSIS). The parking requirement for the clubhouse shall be 2.5 spaces per 1,000 square feet of gross floor area.
- (2) The parking requirement for non-residential development shall be four (4) parking spaces per 1,000 square feet. Shared parking arrangements are encouraged.
- (3) Parking and parking setbacks are as follows:
  - a. No parking is allowed within any Tract buffer. Parking and drive aisles shall be permitted in all building setback areas.
  - b. All nonresidential parking shall be setback a minimum of 40 feet from Routes 130 and 522, and 10 feet from all other Tract boundaries.
  
- (4) All nonresidential buildings shall face the public roadways or entrance boulevard. Any service or loading areas facing public roadways shall be sufficiently screened from view from the public road.
- (5) Parking Stall and Aisle dimensions:
  - a. Parking stall dimensions shall be nine (9') feet wide and eighteen (18') feet deep.
  - b. Parking aisle width shall be twenty four (24') feet.

**Section 62-874 – Lighting.**

Lighting shall be provided in accordance with Section 62-208, with the exception that Section 62-208(g)(4) regarding lighting of sidewalks and pedestrian walkways may be accomplished by ambient lighting from buildings and parking areas and such lighting as may be required to ensure pedestrian safety. No lighting is required for pedestrian trails located within buffer areas, except

for such lighting as may be required to ensure pedestrian safety.

**Section 62-875 – Trash and Recycling Enclosures.**

- (1) There shall be one enclosure (18' X 24') for every three (3) residential buildings for trash and recycling.
- (2) Trash and recycling enclosures shall be completely surrounded by a six-foot-high solid architectural fence and solid gate. All outside trash shall be stored in this area and shall not be in public view over the fence height. All similar accessory appurtenances, such as propane tanks, must be similarly enclosed.

**Section 62-876 - Recreational facilities.**

Section 62-206(5)e shall not apply to the PRD VI Zone. Instead, 80 square feet of recreational facilities per housing unit shall be provided. Recreational facilities in the PRD VI Zone may include a clubhouse, pool and pool area, outdoor courts, and fenced off play areas designated for children of different ages. The existing clubhouse, pool, pool area and outdoor courts shall be available to all residents of Princeton Orchards and shall be credited toward satisfaction of the recreational facility requirement.

**Section 62-877 – Affordable Housing**

- (1) Forty-six (46) affordable housing units shall be provided which equates to 25% of the 184 new residential units.
- (2) Pursuant to the Uniform Housing Affordability Controls (“UHAC”), the affordable units shall be restricted to eligible very-low, low and moderate income households for a minimum of thirty (30) years from the date of their initial occupancy (“Deed- Restriction Period”).
- (3) Ten (10) units, or 21.7% of the affordable units, shall be affordable to very-low income households, defined as those households earning 30 percent or less of the regional median income; fourteen (14) units, or 30.4% of the affordable units, shall be affordable to low-income households, defined as those households earning between 30 percent and 50 percent of the regional median income; and twenty two (22) units, or 47.8% of the affordable units, shall be affordable to moderate-income households, defined as those households earning between 50 percent and 80 percent of the regional median income.
- (4) The affordable units shall comply with the following bedroom distribution requirements: ten (10) three bedroom units (2 very-low, 3 low and 5 moderate), twenty seven (27) two bedroom units (6 very-low, 8 low and 13 moderate) and nine (9) one bedroom units (2 very-low, 3 low and 4 moderate).
- (5) The affordable units shall comply with the UHAC regulations with regards to the pricing of rents associated with very low, low and moderate income units pursuant to N.J.A.C. 5:80-26.3(d) (with one exception that very-low income units shall be provided (as noted in 62-877(3) above) for households at 30% or less of median income and pursuant to N.J.A.C. 5:80-26.12.
- (6) The affordable units shall comply with the phasing of market housing and affordable housing pursuant to N.J.A.C. 5:93-5.6(d), and in accordance with the following schedule:

<u>Minimum Percentage of Low and Moderate Income Units Completed</u>	<u>Percentage of Market Rate Housing Units Completed</u>
0	25
10	25 + 1 unit
50	50
75	75
100	<u>90</u>
	100

- (7) The affordable units shall comply with the UHAC bedroom distribution requirements, N.J.A.C. 5:80-26.3(b), as follows:
  - a. The combined number of efficiency and one-bedroom units is no greater than 20 percent of the total low- and moderate-income units;
  - b. At least 30 percent of all low- and moderate-income units are two bedroom units;
  - c. At least 20 percent of all low- and moderate-income units are three bedroom units; and
  - d. The remainder, if any, may be allocated at the discretion of the developer as two or three bedroom units.
- (8) The two (2) bedroom affordable units shall be reasonably dispersed within the existing Princeton Orchards buildings. The one (1) and three (3) bedroom affordable units shall be reasonably dispersed within the new housing. The two (2) bedroom units shall be certified to be in sound condition as a result of an inspection performed by a licensed building inspector, and brought up to code as necessary.
- (9) Each affordable unit shall contain at least one bedroom with an area of at least 150 square feet and no bedroom shall have an area of less than 100 square feet. The minimum area of each affordable unit shall be as follows:
  - a. One (1) bedroom – 650 square feet.
  - b. Two (2) bedroom – 875 square feet.
  - c. Three (3) bedroom – 1,150 square feet.
- (10) The affordable units shall utilize the same heating sources as the market units within the inclusionary development.
- (11) With regard to ADA compliance, all low and moderate income housing provided as townhouses or multistory dwelling units shall comply with N.J.A.C. 5:97-3.14.
- (12) The cost of amenities shall be included within the maximum housing fees permitted by the UHAC regulations.
- (13) The developer shall contract with an experienced administrative agent as per the UHAC regulations (N.J.A.C. 5:80-26.14).
- (14) The affordable units shall comply with the UHAC regulations with regards to affirmative marketing per N.J.A.C. 5:80-26.15.

### **Section 62-878 – Conflicts in Standards**

RSIS standards and the PRD VI standards shall supersede any conflicting standards within this chapter.

**EXHIBIT C**

**FORM OF STIPULATION OF DISMISSAL**

VOGEL, CHAIT, COLLINS AND SCHNEIDER  
25 Lindsley Drive, Suite 200  
Morristown, NJ 07960  
973-538-3800  
Special Counsel to Defendant Planning Board of the  
Township of South Brunswick  
Thomas J. Molica, Jr., Esq. (Attorney ID NO. 019442000)

IN THE MATTER OF THE APPLICATION OF THE TOWNSHIP OF SOUTH BRUNSWICK, COUNTY OF MIDDLESEX	SUPERIOR COURT OF NEW JERSEY MIDDLESEX COUNTY – LAW DIVISION DOCKET NO. MID-L-004433-17
SOUTH BRUNSWICK CENTER, LLC, Plaintiff,  v. TOWNSHIP OF SOUTH BRUNSWICK, and the PLANNING BOARD OF THE TOWNSHIP OF SOUTH BRUNSWICK, Defendants.	SUPERIOR COURT OF NEW JERSEY MIDDLESEX COUNTY – LAW DIVISION DOCKET NO. MID-L-004432-17
AVALON BAY COMMUNITIES, INC., Plaintiff,  v. TOWNSHIP OF SOUTH BRUNSWICK, and the PLANNING BOARD OF THE TOWNSHIP OF SOUTH BRUNSWICK, Defendants.	SUPERIOR COURT OF NEW JERSEY MIDDLESEX COUNTY – LAW DIVISION DOCKET NO. MID-L-004435-17
RICHARDSON FRESH PONDS, LLC & PRINCETON ORCHARDS ASSOCIATES, LLC  Plaintiff,  v. TOWNSHIP OF SOUTH BRUNSWICK, Defendant.	SUPERIOR COURT OF NEW JERSEY MIDDLESEX COUNTY – LAW DIVISION DOCKET NO. MID-L-004436-17
WINDSOR ASSOCIATES, Plaintiff,  v. TOWNSHIP OF SOUTH BRUNSWICK, and the PLANNING BOARD OF THE TOWNSHIP OF SOUTH BRUNSWICK, Defendants.	SUPERIOR COURT OF NEW JERSEY MIDDLESEX COUNTY – LAW DIVISION DOCKET NO. MID-L-004434-17

<p>STANTON GIRARD, LLC, Plaintiff,</p> <p>v.</p> <p>TOWNSHIP OF SOUTH BRUNSWICK, and the PLANNING BOARD OF THE TOWNSHIP OF SOUTH BRUNSWICK, Defendants.</p>	<p>SUPERIOR COURT OF NEW JERSEY MIDDLESEX COUNTY – LAW DIVISION DOCKET NO. MID-L-004433-17</p>
<p>AMERICAN PROPERTIES AT SOUTH BRUNSWICK, LLC, Plaintiff,</p> <p>v.</p> <p>TOWNSHIP OF SOUTH BRUNSWICK, TOWNSHIP COUNCIL OF THE TOWNSHIP OF SOUTH BRUNSWICK, and the PLANNING BOARD OF THE TOWNSHIP OF SOUTH BRUNSWICK, Defendants.</p>	<p>SUPERIOR COURT OF NEW JERSEY MIDDLESEX COUNTY – LAW DIVISION DOCKET NO. MID-L-004437-17</p>
<p>PPF INDUSTRIAL – ROUTE 130/EXIT 8A, L.L.C., a limited liability company organized under the laws of the State of Delaware, Plaintiff,</p> <p>v.</p> <p>TOWNSHIP OF SOUTH BRUNSWICK, TOWNSHIP COUNCIL OF THE TOWNSHIP OF SOUTH BRUNSWICK, and the PLANNING BOARD OF THE TOWNSHIP OF SOUTH BRUNSWICK, Defendants.</p>	<p>SUPERIOR COURT OF NEW JERSEY MIDDLESEX COUNTY – LAW DIVISION DOCKET NO. MID-L-004094-17</p>
<p>K HOVNANIAN SHORE ACQUISITIONS, LLC, Plaintiff,</p> <p>v.</p> <p>TOWNSHIP OF SOUTH BRUNSWICK AND PLANNING BOARD OF THE TOWNSHIP OF SOUTH BRUNSWICK, Defendants.</p>	<p>SUPERIOR COURT OF NEW JERSEY MIDDLESEX COUNTY – LAW DIVISION DOCKET NO. MID-L-001194-17</p> <p style="text-align: center;"><b><u>STIPULATION AND ORDER OF DISMISSAL</u></b></p>

Pursuant to applicable Rules Governing the Courts of the State of New Jersey, Plaintiffs Richardson Fresh Ponds, LLC and Princeton Orchards Associates, LLC ("Plaintiffs") and Defendants Township of South Brunswick, Township Council of the Township of South Brunswick, and Planning Board of the Township of South Brunswick ("Defendants"), by and through their respective undersigned counsel, do hereby **STIPULATE** and **AGREE** the action docketed in the Superior Court of New Jersey, Law Division, Middlesex County as MID-L-004436-17 and part of the above-captioned consolidated actions be and is hereby dismissed with prejudice, with each party to bear its own costs.

VOGEL, CHAIT, COLLINS AND SCHNEIDER  
Attorneys for South Brunswick Township  
Planning Board

By: \_\_\_\_\_  
THOMAS J. MOLICA, JR.

Dated: \_\_\_\_\_

TOWNSHIP OF SOUTH BRUNSWICK  
Attorney for the Township of South Brunswick and  
the Township Council of the Township of South  
Brunswick

By: \_\_\_\_\_  
DONALD J. SEARS

Dated: \_\_\_\_\_

FOX ROTHSCHILD, LLP  
Attorneys for Richardson Fresh Ponds LLC and  
Princeton Orchards Associates

By: \_\_\_\_\_  
HENRY KENT-SMITH

Dated: \_\_\_\_\_

## EXHIBIT D

### PRINCETON ORCHARDS TREE REPLACEMENT WORKSHEET

#### Princeton Orchards and Stover Site

Obligation	1,571
Planting	<u>1,295</u>
Deficit	276

#### Deficit In-Lieu Calculation

First 50 trees @ \$181 each	\$ 9,050.00
Second 50 trees @ \$163 each	\$ 8,150.00
Next 100 @ \$145 each	\$14,500.00
Last 76 @ \$128 each	<u>\$ 9,728.00</u>
	\$41,428.00

**EXHIBIT 2**  
**PRINCETON ORCHARDS CONCEPT PLAN**

Public Ledger Building, Suite 756 • 120 S. Independence Mall West, Philadelphia, PA 19106 • 724.261.7040 • www.lrk.com • ©2018 LRK Inc. All Rights Reserved.



DEVELOPMENT PROGRAM	
<b>Residential A:</b>	
2-Bedroom Units	74 du
<b>Additional Units in Existing Princeton Orchards Apartments:</b>	
2-Bedroom Units	10 du
<b>Residential B:</b>	
1-Bedroom Units	60 du
2-Bedroom Units	28 du
3-Bedroom Units	12 du
<b>TOTAL</b>	<b>184 du</b>
Number of parking spaces provided to meet or exceed minimum required pursuant to R51S.	
<b>COMMERCIAL AREA</b>	<b>9 ac</b>



## REVISED CONCEPT SKETCH PLAN PRINCETON ORCHARDS

Block 31 - Existing Lots 30.013, 35.091, 35.712 & 35.811 • South Brunswick Township, New Jersey  
February 2, 2018 • Project Number: 03.13018.00



**EXHIBIT 3**

**COURT ORDER APPROVING SETTLEMENT AGREEMENT  
BETWEEN SOUTH BRUNSWICK TOWNSHIP AND  
PRINCETON ORCHARDS ASSOCIATES, LLC**





interest to Richardson Fresh Ponds, LLC (“POA”), the plaintiff in the second above-captioned matter, earlier consolidated with the Township’s Mount Laurel IV Declaratory Judgment Action (first captioned above), and

WHEREAS, the Court having previously been advised by the parties of a written Settlement Agreement between the Township, Township of South Brunswick Planning Board (the “Planning Board”), and POA, for which the Court’s approval is sought pursuant to the “fairness hearing” judicial standards prescribed by the Appellate Division in East/West Venture v. Bor. of Fort Lee, 286 N.J. Super. 311 (App. Div. 1996), and

WHEREAS, on notice to all Counsel of record in the consolidated Declaratory Judgment Action, as well as in accord with all notice requirements to the public and interested parties as specified by this Court’s Order of March 20, 2018, and the Court having conducted a Fairness Hearing on May 22, 2018 in accordance with East/West Venture v. Borough of Fort Lee, 286 N.J. Super. 311 (App. Div. 1996) and Morris County Fair Housing Council v. Township of Boonton, 197 N.J. Super. 359 (Law Div. 1984), and

WHEREAS, the court heard the testimony of Art Bernard, P.P. on behalf of Princeton Orchard Associates, Mary Beth Lonergan, P.P. on behalf of the Township of South Brunswick, the Planning Board, and the Court-appointed Special Master Christine Nazzaro-Cofone, P P. and the Court having considered the testimony and exhibits marked in evidence, including the Settlement Agreement, planning reports and concept plan for development, and for good cause shown;

**IT IS** on this 22nd day of May, 2018, **ORDERED:**

1. The Court finds and determines pursuant to the standards prescribed by the Appellate Division in East/West Venture v. Bor. of Fort Lee, 286 N.J. Super. 311 (App. Div. 1996), that the settlement between POA, and the Township and Planning Board is fair, reasonable and adequately protects the interest of low and moderate income households, and the Court hereby approves the documents implementing the settlement, specifically the Settlement Agreement, the terms and conditions of which are hereby incorporated by reference, together with the exhibits marked and entered into evidence at the Fairness Hearing on May 22, 2018.

2. The terms of the Settlement Agreement provide for the development of the Property for (1) a subdivided commercial lot consisting of approximately 8.5 contiguous acres fronting on Route 522 (the "Commercial Lot"), for which POA will pay a mandatory 2.5% non-residential development fee for affordable housing production; and (2) an inclusionary project consisting of a total of 120 existing and 184 new apartments, with a 25% affordable housing set aside allocated to the 184 new market rate apartments, resulting in the creation of 46 affordable family rental apartments.

3. The Court Special Master has determined, and this Court finds, that the Property is suitable for the proposed project.

4. All other terms and conditions in the Settlement Agreement requiring action by POA or the Township or the Planning Board, or any other municipal agency of the Township shall be adhered to, and all such terms and conditions are hereby incorporated by reference **to the extent applicable to these parties!**

5. The matter is hereby remanded to the Township and Planning Board for appropriate amendments to the South Brunswick Master Plan and zoning ordinances that may be necessary to implement the terms of the Settlement Agreement.

6. Notwithstanding the foregoing, the Court will retain jurisdiction for the limited purpose of enabling the parties to seek enforcement of the terms of the settlement.

**FURTHER ORDERED** that counsel for Plaintiff shall serve a copy of this Order on all parties of record within seven (7) days ~~XXXXXX~~ ~~XXXXXX~~ ~~XXXXXX~~ ~~XXXXXX~~ of the date of posting to eCourts.

Arthur Bergman  
Hon. Arthur Bergman, J.S.C.

Opposed       

Unopposed   X

**EXHIBIT 4**  
**2017 SEWER CAPACITY STUDY**

**TOWNSHIP OF SOUTH BRUNSWICK**

**2017 SANITARY SEWER SYSTEM CAPACITY AND FLOW  
STUDY**

**APRIL 19, 2018**

**OUR FILE NO. M-300-110-000**

*Richard A. Alaimo Associates*  
*- Consulting Engineers -*

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## **EXECUTIVE SUMMARY**

The Township of South Brunswick authorized Richard A. Alaimo Associates to conduct a Capacity and Flow Study of the Township's major sanitary sewer interceptors in the spring of 2017. The first step of this study was to perform flow monitoring to identify areas within the sanitary sewer system that have problems with infiltration and inflow (I & I). The flow data were then analyzed and recommendations were made for both further investigations and corrective actions that would help mitigate the problems identified.

The Township is divided into two service areas. The eastern side of the Township's wastewater system flows to the Middlesex County Utilities Authority (MCUA) and the western side flows to the Stony Brook Regional Sewerage Authority (SBRSA). Flow meters were installed at thirteen locations along five interceptors for a two month period starting in early June 2017. Three flow meters each were placed along the Kingston and Ridge Road interceptors, which discharge to the SBRSA. Also, three flow meters each were placed in the Oakeys Brook and Town Center interceptors and one in the Route 130 interceptor. All three of these interceptors discharge into the MCUA system.

Given the age of the Township's sewage collection system and the proximity of some of the sewer mains to water bodies, it was not surprising to see significant I & I flows measured in the interceptors. The most significant I & I was measured in portions of the Oakeys Brook, Town Center and Ridge Road interceptors. Recommendations for further investigation and rehabilitation within these interceptors are presented at the end of this report. The report also addresses the remaining capacity of the interceptors so that there will be a basis for deciding whether sufficient capacity exists to allow for future connections within each drainage basin. The downstream portions of the Oakeys Brook and Ridge Road interceptors proved to be currently over capacity and little remaining capacity is shown to exist in an upstream portion of the Oakeys Brook Interceptor and the two upstream portions of the Ridge Road Interceptor. New sewer main construction may be required to allow future flows into these lines.

## I. INTRODUCTION

In accordance with South Brunswick Township Resolutions No. RES-2017-132 and RES-2017-211, Richard A. Alaimo Associates (Alaimo) has conducted a study to determine the magnitude of inflow and infiltration (I & I) in the Township's major sanitary sewer interceptors. The goal of this study is to use flow metering data to identify areas prone to I & I problems, recommend areas for further study and recommend corrective actions.

This study is a follow-up to a previous study performed by Alaimo in 1998 and 1999. A report with recommendations for further investigation and system rehabilitation was presented to the Township dated October 1999. Pipeline inspection and rehabilitation work was performed in 2003 in accordance with the recommendations made in the report.

In May 2017, Alaimo retained the services of CSL Services Incorporated (CSL), to perform flow monitoring and provide an analysis of the flow monitoring results. The flow monitoring was conducted within the Kingston, Ridge Road, Oakeys Brook, Town Center and Route 130 interceptors. A total of thirteen flow meters and two rain gauges were installed and monitored over the two month period. CSL presented the results of their analysis of the data collected during this period in a report dated November 1, 2017. Their report is included as Appendix A of this report.

CSL started collecting data from the flow meters and rain gauges on June 10, 2017 and continued doing so until August 10, 2017. During this period, there were eleven rain events with rainfall ranging from less than 0.2 inches to almost two inches per event. This weather pattern provided a good look at how the collection system is affected by various rainfall amounts. Also, the flow meters were installed at the end of a short period without rain, so the first week of data collection could be used as the dry weather benchmark period.

After the measurement period was completed, CSL presented the raw data to Alaimo along with simple statistical analyses in early September 2017. CSL also conducted further analyses of the data and prepared the November 2017 report that provided estimates of the dry weather flow, wet weather flow and rainfall induced infiltration and inflow (RDII) quantities.

Typically, inflow and infiltration are caused by a combination of the following:

### Inflow

- Surface water leakage through manhole covers.
- Discharge from basement sump pumps.

- Roof drain connections to the sanitary system.
- Storm sewer connections.

### **Infiltration**

- Groundwater leakage through cracks or broken seals in sewer pipes and manholes.
- Groundwater leakage through poorly laid or broken private laterals.

## **II. METHODOLOGY**

The Township is divided into two separate service areas with multiple drainage basins based on the direction of flows through the sanitary system to the receiving regional systems. Each drainage basin is served by an interceptor sewer main that conveys sewage to a point where it is transferred to the respective regional system. Manhole locations were identified within five interceptors to isolate the drainage basins and their flows. The manholes that were identified were then inspected to ensure the condition of the system and potential for use in the installation of metering devices.

Figure 1 shows a map of the entire Township with the service areas, drainage basins, and manholes used for metering identified.

The meters used in this study were the area/velocity type. The flow meter consists of sensors that measures depth, which is used for calculating the area of the pipe, and velocity measurements, which are used in determining the flow rate through the pipe. The depth and velocity measurements were taken every five minutes using pressure and/or ultrasonic sensors. Two rain gauges were installed, one in each service area, to record the rain events during the flow metering. The locations of the rain gauges are also shown in Figure 1.

## **III. SEWER SYSTEM AREA**

The Township's sanitary sewer system is divided into two service areas that flow to either Stony Brook Regional Sewerage Authority (SBRSA) in Princeton or the Middlesex County Utilities Authority (MCUA) in Sayreville. Within the two service areas, the major sewer interceptors of concern were identified. In the SBRSA the interceptors investigated were Kingston and Ridge Road. The Oakeys Brook, Town Center, and the Route 130 interceptors were investigated in the MCUA service area.

Each of the interceptors identified were used as the basis in creating drainage basins that were then sub-divided into smaller sub-basins to facilitate ease of monitoring and data collection. Descriptions on the locations of meter installations within the sub-basins are listed below:

- Kingston Interceptor

The Kingston drainage basin was split into three sub-basins. The first meter was installed in a manhole near a baseball field on Quentin Road. The meter was placed in an eighteen inch diameter pipe. The second meter was placed in a twenty-four inch diameter pipe located in the woods off of Ridge Road. The final meter was installed in a thirty inch diameter pipe in the woods off of Ridge Road. Those last two meters were installed in two parallel pipes in order to capture the total flow in the downstream part of the drainage basin. It must be noted, however, that not all of the Kingston drainage basin consists of parallel lines and that approximately 10,000 feet of single twenty-four inch sewers comprise this drainage basin between the K1 and K2, K3 sites. In total the Kingston drainage basin consists of 255,117 linear feet of pipe that includes eight inch through thirty inch diameter pipe.

- Ridge Road Interceptor

The Ridge Road drainage basin was divided into three sub-basins. The first meter was installed in a manhole along Stouts Lane in a twenty inch diameter pipe. The second meter was placed in a twenty-one inch diameter pipe located on the southbound side of Route 1 across from a lake located next to the Kilgore Center. The final meter was installed in a twenty-four inch diameter pipe in the woods off of Ridge Road. In total the Ridge Road drainage basin consists of 191,884 linear feet of pipe that includes eight inch through twenty-four inch diameter pipe.

- Oakeys Brook Interceptor

The Oakeys Brook drainage basin was separated into three sub-basins. The first meter was installed in a manhole along Black Horse Lane in an eighteen inch diameter pipe with flows coming from Henderson Road. The second meter was placed in a twelve inch diameter pipe along Black Horse Lane with flows coming from Deans Lane. The pipes into which the first and second meters were placed join together on Black Horse Lane, from which point flows continue towards Route 130. The final meter was installed in a twenty-one inch diameter pipe across the street from Pump Station No. 10. In total the Oakeys Brook drainage basin includes 142,708 linear feet of pipe that consists of eight inch through twenty-one inch diameter pipe.

- Town Center Interceptor

The Town Center drainage basin was split into three sub-basins. The first meter was installed in a manhole off of Major Road in a twelve inch diameter pipe. The second meter was placed in a twenty-four inch diameter pipe along Deans Pond Lane. This line does not receive flow from the pipe in which the first meter along this drainage basin is located, but it will receive flow from the proposed South Brunswick Center development. The final meter was installed in a thirty-six inch diameter pipe located next to the Teyma building off of Route 130 along the creek. In total the Town Center drainage basin consists of 57,495 linear feet of pipe that includes eight inch through thirty-six inch diameter pipe.

- Route 130 Interceptor

The meter used to measure the Route 130 drainage basin was placed in a thirty-six inch diameter pipe in a manhole near the intersection of Route 130 and Viking Way. In total the Route 130 drainage basin consists of 93,592 linear feet of pipe that includes eight inch through thirty-six inch diameter pipe.

#### IV. FLOW ANALYSIS

CSL conducted an analysis of the data recorded from June 2017 through August 2017 in the Township's collection system. The results of this analysis are shown in Table 1, which is a copy of Table 3.2 of the CSL report. CSL first separated the data into two time periods. The first is the "dry" period prior to the first rainfall event of the study period. This period ran from June 10 through June 16. Since the previous recorded rainfall for the area occurred on June 6, the "dry" period reflects the system flows over a ten day period with no rain. CSL then estimated the amount of dry weather infiltration (DWI) by assuming eighty-five percent of the minimum flow through the pipes during this period came from seepage of groundwater into the pipes and manholes. This is a good baseline estimate of the constant flow of groundwater into the collection system. These flows will be higher during the late winter/early spring when groundwater levels are higher than they were during this study period.

The second time period was the wet weather period (June 17 – August 11) when flows were analyzed and statistical projections were made to predict the rates of flow in the interceptors after a twenty-four hour rain event with a two-year frequency. This flow rate represents the Rain Derived Infiltration and Inflow (RDII) for each metering location. The RDII was then divided by the total length of sewers upstream from the metering location to obtain the RDII/LF value which can be used to compare the relative integrity of each sewer sub-basin. A ranking of each sub-basin was then generated based upon this comparison and the resulting priority for further investigation and rehabilitation is shown in Table 1.

**Table 1**  
**South Brunswick Township**  
**Interceptor Flow Studies**  
**Flow Monitoring Data Analysis**

Sub-Basin Details					Dry Weather Results										Wet Weather Results				
					Average				Minimum		Peak				Net RDII 2 yr-24 hr (mgd)	Net RDII per LF (gpd/LF)	Priority	Peak Depth (in)	Peak Depth/Diameter (%)
Site	Sewer Service Area	Pipe Diameter (in)	Sub-basin Size (LF)	Silt Debris, Gravel, Grease	Depth (in)	Depth/Diameter (%)	Velocity (fps)	Flow (mgd)	Min Flow (mgd)	DWI (mgd)	Depth (in)	Depth/Diameter (%)	Velocity (fps)	Net Flow (mgd)	Net RDII 2 yr-24 hr (mgd)	Net RDII per LF (gpd/LF)	Priority	Peak Depth (in)	Peak Depth/Diameter (%)
K1	SBRSA	18	138,720	0	1.77	10%	1.22	0.16	0.00	0.00	4.13	23%	3.9	0.693	1.420	10.23	7	7.82	43%
K2		24	118,222	0	6.93	29%	1.68	0.82	0.44	0.38	8.65	36%	2.0	0.915	1.701	14.39	6	20.75	86%
K3		30	118,222	0	3.43	11%	3.36	0.68	0.43	0.37	4.37	15%	3.9	0.707	0.74	6.26	11	7.61	25%
OB1	MCUA	18	23,195	0	5.76	32%	1.88	0.60	0.24	0.20	7.69	43%	2.5	1.093	0.97	41.82	1	25.8	143%
OB2		12	109,248	0	3.56	30%	1.50	0.16	0.06	0.05	4.47	37%	2.1	0.351	0.19	1.74	13	8.06	67%
OB3		20	10,265	0	5.78	29%	2.58	0.91	0.39	0.33	7.02	35%	3.8	0.056	0.28	27.28	3	10.5	52%
TC1	MCUA	24	18,216	0	5.38	22%	1.10	0.39	0.10	0.08	7.20	30%	1.7	0.856	0.128	7.01	10	12.24	51%
TC2		24	6,246	0	0.54	2%	0.43	0.01	0	0	1.01	4%	0.9	0.024	0.019	3.02	12	5.23	22%
TC3		36	33,033	1.5	13.94	39%	0.69	1.08	0.55	0.47	15.5	51%	1.3	1.697	0.648	19.61	4	31.04	86%
RR1	SBRSA	20	112,110	0	8.36	42%	1.48	0.84	0.37	0.32	10.38	52%	2.2	1.513	0.848	7.56	9	44.75	224%
RR2		21	49,102	0	7.64	36%	1.87	0.97	0.42	0.36	10.5	50%	2.4	0.285	0.824	16.78	5	43.47	207%
RR3		24	30,672	0	11.34	47%	1.67	1.58	0.77	0.65	14.47	60%	2.2	0.966	1.085	35.37	2	31.25	130%
RT130	MCUA	36	93,592	0	9.91	28%	1.19	1.24	0.40	0.34	12.38	34%	1.8	2.214	0.83	8.87	8	14.9	41%
Total			860,843												9.683	199.97			

Note: The metering points K2 and K3 are in parallel sewer mains, allowing for extra capacity. The 24" sewer main directly upstream from the parallel pipes will likely be subject to surcharging.

**Table 2**  
**South Brunswick Township**  
**Interceptor Flow Studies**  
**Sewer Capacity Analysis**

Interceptor	Monitoring MH	Pipe Diameter, in	Average Dry Weather Flow, MGD	Dry Weather Infiltration, MGD	Dry Weather Connected Flow, MGD	Depth/Diameter (%)	Full Flow, MGD	Committed Capacity Ratio
<b>Kingston</b>	K1	18	0.16	0.00	0.16	10%	1.86	17%
	K2	24	0.82	0.38	0.44	29%	3.27	27%
	K3	30	0.68	0.37	0.31	11%	4.96	13%
<b>Oakeys Brook</b>	OB1	18	0.60	0.20	0.40	32%	1.86	43%
	OB2	12	0.16	0.05	0.11	30%	0.89	25%
	OB3	20	0.91	0.33	0.58	29%	2.29	51%
<b>Town Center</b>	TC1	24	0.39	0.08	0.31	22%	3.27	19%
	TC2	24	0.01	0.00	0.01	2%	3.27	1%
	TC3	36	1.08	0.47	0.61	39%	7.22	17%
<b>Ridge Road</b>	RR1	20	0.84	0.32	0.52	42%	2.29	45%
	RR2	21	0.97	0.36	0.61	36%	2.51	49%
	RR3	24	1.58	0.65	0.93	47%	3.27	57%
<b>Route 130</b>	RT130	36	1.24	0.34	0.90	28%	7.22	25%

## V. FINDINGS

### A. Interceptor Capacity

The New Jersey Department of Environmental Protection (DEP) requires that sanitary sewers be able to convey twice the average flow from the connected properties while flowing no more than half full. This is to allow for eventual infiltration and inflow during peak storm events. In order to evaluate the remaining capacity of each sewer sub-basin, we started with the Average Dry Weather Flow from Table 1 and subtracted the Dry Weather Infiltration since it is accounted for in the DEP's capacity calculations. The full flow capacity for each pipe diameter was calculated at the minimum allowable slope and a Coefficient of Roughness of 0.013 to reflect the existing pipe material. The Committed Capacity Ratio was then developed by dividing twice the Dry Weather Connected Flow by the full flow capacity. If the resulting value exceeds fifty percent, then the interceptor has insufficient capacity to receive additional connections. As can be seen on Table 2, this occurs only for the OB3 and RR3 metering locations. It should be noted, however, that the OB1, RR1 and RR2 locations have limited remaining capacity. Also, since the interceptors at K2 and K3 are parallel lines, the twenty-four inch interceptor immediately upstream from these locations must be evaluated for capacity issues. The combined dry weather connected flow upstream from these metering points is 0.75 MGD, which would require forty-six percent of the upstream twenty-four inch sewer capacity.

### B. Response to Rainfall Events

In addition to having the capacity to transmit sanitary sewage flows in accordance with NJDEP regulations, the collection system must be able to carry infiltration and inflow that would be expected from a periodic rainfall event. CSL used the rainfall expected over a twenty-four hour period with a frequency of every two years based on historic data as its baseline storm. The storm data was obtained from the National Oceanographic and Atmospheric Administration (NOAA) Intensity Frequency Curves for South Brunswick, New Jersey.

As shown in the last column on Table 1, all of the Ridge Road interceptor and the Oakeys Brook interceptor at OB1 can be expected to surcharge at least once every two years. Also, since the interceptors at K2 and K3 are parallel lines, the twenty-four inch interceptor immediately upstream from these locations must be evaluated for possible surcharges during storm events. If the combined RDII from K2 and K3 (2.441 MGD) were to flow through the single twenty-four inch upstream sewer, that sewer would flow at 123% of its capacity, thereby surcharging this line during the two year rain event. It should also be noted that flows in the Town Center Interceptor approach the maximum capacity during the selected storm event. This is likely due to insufficient capacity at Pumping Station No. 10 causing backups into this interceptor.

The Township has already experienced surcharges in the Town Center and Ridge Road interceptors during major storm events. As required, the surcharges were reported to the NJDEP emergency hotline. No enforcement actions were lodged against the Township as a result of timely and appropriate actions taken by the Sewer Utility in response to the surcharges.

C. Base Dry Weather Flows

The analysis performed by CSL on the minimum dry weather flows provides insight into the cost of a leaky collection system to the Township. We have prepared Table 3 to further analyze this relationship. This table separates the interceptors by the regional system to which they discharge and repeats the values for the total feet of sewer mains directly upstream from each measuring site. The estimated volume of dry weather infiltration is also entered for each site. The length of sewer mains within each sub-basin was then used to arrive at a value for the volume of dry weather inflow per linear foot of upstream pipe. This value can be used to help establish priorities for rehabilitation work.

The importance of reducing the volume of dry weather infiltration flow is twofold. First, these flows take up sewer capacity that may be needed for current and future customers. Secondly, the Township must pay for the treatment of this groundwater by the regional sewerage authorities. The magnitude of this flow can be seen for each of the two major collection basins that are totaled on Table 3. These basin totals represent a significant portion of the sewage that is conveyed to the regional treatment authorities each day. For instance, the total flows from South Brunswick to the SBRSA in the months of June and July 2017 averaged 3.31 MGD. Therefore, the estimated total DWI in this basin would represent over forty percent of the total daily flow discharged to SBRSA. While the estimate may be high, it is apparent that DWI significantly increases the amount that the Township must pay to the regional authorities each year. Efforts to reduce the amount of DWI in all sewer mains within the Township should prove cost effective. It will not be possible to eliminate 100% of the DWI, but efforts to do so in the oldest sewer mains and those in the areas of high groundwater will show the largest return on investment.

**Table 3**  
**South Brunswick Township**  
**Interceptor Flow Studies**  
**Dry Weather Infiltration Analysis**

Interceptor	Monitoring MH	Direct Contributions, LF	Cumulative Contributions, LF	Net DWI, MGD	Net DWI/LF, gpd/lf
Oakeys Brook	OB1	23,195	23,195	0.20	8.62
	OB2	109,248	132,443	0.05	0.46
	OB3	10,265	142,708	0.08	7.79
Town Center	TC1	18,216	18,216	0.08	4.39
	TC2	6,246	6,246	0.00	0.00
	TC3	33,033	57,495	0.39	11.81
Route 130	RT130	93,592	93,592	0.34	3.63
MCUA BASIN TOTAL				<b>1.14</b>	
Kingston	K1	138,720	138,720	0.00	0.00
	K2	118,222	256,942	0.38	1.48
	K3	118,222	256,942	0.37	1.44
Ridge Road	RR1	112,110	112,110	0.32	2.85
	RR2	49,102	161,212	0.04	0.81
	RR3	30,672	191,884	0.29	9.45
SBRSA BASIN TOTAL				<b>1.40</b>	

## **VI. IMPACT OF PROPOSED FUTURE DEVELOPMENTS**

Fourteen new developments are proposed for the Third Round of Affordable Housing within South Brunswick Township. We previously prepared a desktop analysis of the impact of future flows from these projects on the Township's sewage collection system. We presented our findings in a report dated August 2016.

The data that was collected for the current study has enabled us to check some of the assumptions made in the 2016 study and take a closer look at the issues of capacity and surcharges. As reported in earlier sections of this report, the Ridge Road and Oakeys Brook interceptors have already exceeded the allowable capacities of the downstream sections. Also, the remaining capacity in the upper reaches of the Ridge Road Interceptor is minimal. Additionally, surcharging can be expected in the entire Ridge Road Interceptor, the upper portion of the Oakeys Brook Interceptor that services Henderson Road and the portion of the Kingston twenty-four inch interceptor upstream from metering points K2 and K3.

To assess the impact of the flows from the Third Round of Affordable Housing projects, we have created Table 4, which designates the metering points along the interceptors through which the flow from each development will pass. The proposed development locations are shown on Figure 2.

Tables 5 and 6 were then generated to analyze the impact of the proposed developments on pipe capacity and the likelihood of surcharging. From Table 5 it can be seen from the increase in the committed capacity ratio that the existing capacity issues in the Ridge Road and Oakeys Brook Interceptors will be exacerbated. Additionally, the twenty-four inch sewers upstream from the parallel metering points K1 and K2 will receive flows that take up fifty-two percent of its capacity if the proposed development flows are connected.

The analysis performed on Table 6 evaluates the ability of each interceptor to accommodate the future maximum flows. It also provides an estimate of the total maximum flows to each of the two regional sewerage authorities. The results show that surcharging can be expected during significant future storm events in the Oakeys Brook, Kingston and Ridge Road interceptors.

Table 6 also shows that the firm capacity of Pumping Station No. 10, which receives all flows within the MCUA basin, will be exceeded by these projected maximum flows. Our November 2000 report on this pumping station calculated the station's firm capacity to be 9.55 MGD. As stated in our earlier report, the Township has entered into an agreement with Cranbury Township to reserve 1.75 MGD of capacity at this pump station for future connections within Cranbury. Therefore, the total capacity available for South Brunswick Township is 7.80 MGD. The projected maximum flows of 10.17 MGD greatly exceed this capacity. The tendencies for the maximum flows to surcharge the interceptors and exceed the pumping station capacity can be alleviated through an

aggressive I & I reduction program in both the Oakeys Brook and Town Center Interceptors, but improvements to the pump station and force mains may also be necessary.

From those analyses, it is recommended that no new developments be allowed into the Oakeys Brook, Kingston or Ridge Road Interceptors without improvements to the interceptors to provide the required capacity. Such improvements may include construction of parallel sewers or diversion of flows to an interceptor with available capacity. Furthermore, it is also recommended that developments that propose to connect into interceptors predicted to surcharge, and all interceptors that contribute flows to Pumping Station No. 10, contribute to the cost of reducing I & I in the drainage basins to which they will flow into plus any costs required to upgrade Pumping Station No. 10 and its force main.

## **VII. FURTHER INVESTIGATION AND REHABILITATION**

This report contains three metrics that can be used to determine priorities for further investigation and rehabilitation work. They are percent of sewer capacity used by the average dry weather flow, the likelihood of surcharging based upon the Net RDII/LF and the estimated DWI/LF. All three of these metrics are summarized and prioritized on Table 7. Determining which of these are most important to the Township in allocating resources will depend on the goals for each sub-basin. The percent of sewer capacity estimation will be most important within those sub-basins where capacity is needed for proposed development projects. The RDII/LF priorities should govern where surcharges have been most frequently reported. If best return on investment is the main consideration, then the DWI/LF priorities are most important.

**Table 4**  
**South Brunswick Township**  
**Third Round Affordable Housing**  
**Interceptor Runs Impacted**

<b>Map Label</b>	<b>Project</b>	<b>Proposed Flow, gpd</b>	<b>Meter Locations</b>
A	Roedel	27,000	K2,K3
B	Cambridge Crossing	25,050	RR1,RR2,RR3
C	American Properties	20,250	OB1,OB3
D	Avalon Bay	42,750	TC1,TC3
E	SBC	457,875	TC2,TC3
F	Princeton Orchards	78,150	Rte 130
G	Windsor Assoc	13,950	TC1,TC3
H	RPM	45,750	OB2,OB3
I	E. Meadow Estates	16,500	OB1,OB3
J	Stanton Girard	27,000	K1,K2,K3
K	Wilson Farms	45,075	K1,K2,K3
L	Toll Bros (Mindel)	25,500	RR1,RR2,RR3
M	K Hovnanian (Bellemead)	28,125	RR3
N	PPF Industrial	142,200	TC3

**Table 5**  
**South Brunswick Township**  
**Interceptor Flow Studies**  
**Future Sewer Capacity Analysis**

<b>INTERCEPTOR</b>	<b>Monitoring MH</b>	<b>Pipe Diameter, in</b>	<b>Average Dry Weather Flow, MGD</b>	<b>Dry Weather Infiltration, MGD</b>	<b>Dry Weather Connected Flow, MGD</b>	<b>Proposed Connections, MGD</b>	<b>Future Flow, MGD</b>	<b>Full Flow, MGD</b>	<b>Committed Capacity Ratio</b>
<b>KINGSTON</b>	K1	18	0.16	0.00	0.16	0.07	0.23	1.86	25%
	K2	24	0.82	0.38	0.44	0.04	0.48	3.27	29%
	K3	30	0.68	0.37	0.31	0.06	0.37	4.96	15%
<b>OAKEYS BROOK</b>	OB1	18	0.60	0.20	0.40	0.04	0.44	1.86	47%
	OB2	12	0.16	0.05	0.11	0.05	0.16	0.89	35%
	OB3	20	0.91	0.33	0.58	0.08	0.66	2.29	58%
<b>TOWN CENTER</b>	TC1	24	0.39	0.08	0.31	0.06	0.37	3.27	22%
	TC2	24	0.01	0.00	0.01	0.46	0.47	3.27	29%
	TC3	36	1.08	0.47	0.61	0.66	1.27	7.22	35%
<b>RIDGE ROAD</b>	RR1	20	0.84	0.32	0.52	0.06	0.58	2.29	50%
	RR2	21	0.97	0.36	0.61	0.06	0.67	2.51	53%
	RR3	24	1.58	0.65	0.93	0.08	1.01	3.27	62%
<b>ROUTE 130</b>	RT130	36	1.24	0.34	0.90	0.08	0.98	7.22	27%

**Note:** The K1 and K2 combined flows will exceed the capacity of the single twenty-four inch sewers upstream from these locations.

**Table 6**  
**South Brunswick Township**  
**Interceptor Flow Studies**  
**Maximum Future Flow Analysis**

Interceptor	Monitoring Manhole	Sewer Service Area	Pipe Diameter (in)	Net Peak Dry Weather Flow (mgd)	Net RDII 2 yr-24 hour (mgd)	Basin Total Peak Flow, MGD	Basin Total RDII, MGD	Basin Present Max Flow, MGD	Basin Proposed Connections, MGD	Basin Future Flows, MGD	Full Flow, MGD	Committed Capacity Ratio	Total Service Area Max Flows, MGD
Oakeys Brook	OB1	MCUA	18	1.09	0.97	1.09	0.97	2.06	0.04	2.10	1.86	113%	10.17
	OB2		12	0.35	0.19	0.35	0.19	0.54	0.05	0.59	0.89	66%	
	OB3		20	0.06	0.28	1.50	1.44	2.94	0.08	3.02	2.29	132%	
Town Center	TC1	MCUA	24	0.86	0.13	0.86	0.13	0.98	0.06	1.04	3.27	32%	
	TC2		24	0.02	0.02	0.02	0.02	0.04	0.46	0.50	3.27	15%	
	TC3		36	1.70	0.65	2.58	0.80	3.37	0.66	4.03	7.22	56%	
Route 130	RT130	MCUA	36	2.21	0.83	2.21	0.83	3.04	0.08	3.12	7.22	43%	
Kingston	K1	SBRSA	18	0.69	1.42	0.69	1.42	2.11	0.07	2.19	1.86	117%	
	K2		24	0.92	1.70	1.19	2.27	3.46	0.04	3.50	3.27	107%	
	K3		30	0.71	0.74	1.12	1.59	2.71	0.06	2.77	4.96	56%	
Ridge Road	RR1	SBRSA	20	1.51	0.85	1.51	0.85	2.36	0.06	2.42	2.29	106%	
	RR2		21	0.29	0.82	1.80	1.67	3.47	0.06	3.53	2.51	140%	
	RR3		24	0.97	1.09	2.76	2.76	5.52	0.08	5.60	3.27	171%	

8.37

**Note:** Net flows represent only those flows that directly contribute to the sewers directly connected to the portion of the interceptor between the previous metering point to the metering point noted.  
Total flows represent all upstream contributions to the metering point noted.  
Net upstream flows into K2 & K3 were proportionally divided into these parallel lines to arrive at basin totals.  
The total future flows to Pumping Station No. 10 will include the 10.17 MGD from South Brunswick plus 1.75 MGD from Cranbury for a total of 11.92 MGD

The results of the flow monitoring were used to create a picture of the areas within the system that should be prioritized to address the I & I problems. However, further investigations are needed to determine the actual root of the problems within each service area, which is typical following a flow monitoring study. Studies have shown that 100% removal of I & I is not something that can be achieved, but approximately thirty percent removal can be expected. This removal can be obtained by manhole inspections, CCTV inspections and smoke testing in conjunction with flow monitoring.

The goal of the manhole inspections will be to identify any infiltration that is getting into the manhole via cracks within the manhole itself or at the frame and cover. The CCTV inspections will allow for an internal investigation of the pipes to identify any cracked pipes and leaky joints. Smoke testing is useful to locate any illegal connections to the sanitary sewer system as well and any cracked mains and laterals within the system. These investigations should start in the interceptors with the highest priority for corrections. If the corrections made as a result of the investigations do not yield sufficient I & I reduction, the Township should then continue upstream to the sewer mains that supply the interceptors to determine if there are any I & I problems that need to be addressed in the smaller pipes.

It should be noted that addressing sewer capacity issues is a much more costly endeavor than sewer rehabilitation to reduce I & I. Since sewer capacity is determined based upon the size of the pipe, reducing I & I in the affected lines will not serve to increase the pipe's capacity. The construction of a parallel sewer main would be the most practical way to increase an interceptor's capacity. These costs should be the responsibility of the developers that propose to send more flow through the affected sewers.

## **VIII. RECOMMENDATIONS AND COST ANALYSIS**

For the next phase of the Township's I & I corrections program, emphasis should be placed on those interceptors that are rated with a high priority on Table 7. These would include the interceptors upstream from monitoring manholes OB1, OB3, TC3 and RR3. All of these trunk sewers either run along the banks of a stream or have at least one stream crossing. They are probably in areas of high groundwater and any cracked pipes or leaking joints would allow significant amounts of infiltration into the system.

**Table 7**  
**South Brunswick Township**  
**Interceptor Flow Studies**  
**Composite Priorities**

Interceptor	Monitoring MH	Basis for Priority		
		Interceptor Capacity	Surcharge Prevention	DWI
Kingston	K1	11	4	12
	K2	8	6	8
	K3	13	9	9
Oakeys Brook	OB1	5	5	3
	OB2	6	8	11
	OB3	2	3	4
Town Center	TC1	12	12	5
	TC2	9	13	12
	TC3	6	9	1
Ridge Road	RR1	4	7	7
	RR2	3	2	10
	RR3	1	1	2
Route 130	RT130	10	11	6

**Note:** The K1 and K2 combined flows will exceed the capacity of the single 24" sewers upstream from these locations.

We have prepared Table 8 to estimate the approximate cost to investigate and correct all of the sewer main runs along the interceptors named above that are projected to have a high likelihood to surcharge during storm events. The cost estimates assume that full rehabilitation will be required for all sewer mains and manholes within these runs. It also assumes that the initial cleaning and TV inspection will be conducted by contracted forces since the heavy flows through the interceptors require specialized bypass pumping procedures. Some of these costs may be reduced by the use of Township forces and equipment, where possible. Also, initial investigations may reveal that rehabilitation of certain pipes and/or manholes is not necessary at this time. However, we recommend that the presented costs be used for budgeting purposes.

**Table 8**  
**South Brunswick Township**  
**Interceptor Flow Studies**  
**Investigations and Corrections Cost Estimates**

Interceptor	Pipe Diameter, in	Length, LF	Manholes	Clean & TV,		Pipe Lining, \$/LF	Pipe Lining, Total \$	Manhole Rehab, Total \$	Total Cost
				\$/LF	Total \$				
OB 1	18	2,420	9	\$7.00	\$16,940	\$145	\$ 350,900	\$ 54,000	\$ 421,840
OB 3	21	2,110	8	\$7.00	\$14,770	\$175	\$ 369,250	\$ 48,000	\$ 432,020
K2&K3	18	1,640	24	\$7.00	\$11,480	\$145	\$ 237,800	\$144,000	\$ 393,280
	20	4,960	33	\$7.00	\$34,720	\$175	\$ 868,000	\$198,000	\$1,100,720
	24	2,240	29	\$7.00	\$15,680	\$195	\$ 436,800	\$174,000	\$ 626,480
RR1	20	5,670	22	\$7.00	\$39,690	\$175	\$ 992,250	\$132,000	\$1,163,940
RR2	20	7,190	19	\$7.00	\$50,330	\$175	\$1,258,250	\$114,000	\$1,422,580
RR3	20	7,400	25	\$7.00	\$51,800	\$175	\$1,295,000	\$150,000	\$1,496,800
<b>Total Corrective Costs</b>									<b>\$7,057,660</b>
<b>Follow-up Flow Study</b>									<b>\$ 70,000</b>
<b>Smoke Testing, if required</b>									<b>\$ 20,000</b>
<b>Total Costs</b>									<b>\$7,147,660</b>

When considering the cost effectiveness of performing the recommended investigations and rehabilitation, several factors should be kept in mind. As we previously noted, 100% reduction of I & I cannot be obtained. However, even typical amounts of reduction can alleviate the surcharging experienced during major storms which subject the Township to fines from the NJDEP. Also, even a thirty percent reduction of dry weather infiltration in the recommended interceptors would result in a 210,000 gpd reduction of flows to MCUA and a 90,000 gpd reduction of flows to SBRSA.

**Table 9**  
**South Brunswick Township**  
**Interceptor Flow Studies**  
**Estimated Maximum Cost to Provide Necessary Capacity**

<b>Interceptor</b>	<b>Pipe Diameter, in</b>	<b>Length, LF</b>	<b>Manholes</b>	<b>Parallel Main, \$/LF</b>	<b>Parallel Main, Total \$</b>	<b>Manhole Replacement, Total \$</b>	<b>Total Cost</b>
<b>OB 1</b>	18	2,420	9	\$200.00	\$484,000	\$90,000	\$574,000
<b>OB 3</b>	21	2,110	8	\$200.00	\$422,000	\$80,000	\$502,000
<b>TC3</b>	24	5,000	17	\$220.00	\$1,100,000	\$70,000	\$1,270,000
	36	4,400	12	\$300.00	\$1,320,000	\$120,000	\$1,440,000
<b>RR1</b>	20	5,670	22	\$200.00	\$1,134,000	\$220,000	\$1,354,000
<b>RR2</b>	20	7,190	19	\$200.00	\$1,438,000	\$190,000	\$1,628,000
<b>RR3</b>	20	7,400	25	\$200.00	\$1,480,000	\$250,000	\$1,730,000
<b>Estimated Maximum Parallel Main Costs</b>							<b>\$8,498,000</b>

**Table 10**  
**South Brunswick Township**  
**Third Round Affordable Housing**  
**Interceptor Runs Impacted**

Map Label	Project	Proposed Flow, gpd	Meter Locations	Total Cost of Improvements to Accept Flow	Full Flow, MGD	Improvement Cost per MGD	Project's Pro Rata Share of Cost
A	Roedel	27,000	K2,K3	\$2,120,480	4.96	\$ 427,516	\$ 11,543
B	Cambridge Crossing	25,050	RR1,RR2,RR3	\$4,712,000	3.27	\$1,440,979	\$ 36,097
C	American Properties	20,250	OB1,OB3	\$ 853,860	2.29	\$ 372,865	\$ 7,551
D	Avalon Bay	42,750	TC1,TC3	\$2,710,000	7.22	\$ 375,346	\$ 16,046
E	SBC	457,875	TC2,TC3	\$2,710,000	7.22	\$ 375,346	\$171,862
F	Princeton Orchards	78,150	Rte 130	-----	7.22	-----	-----
G	Windsor Assoc	13,950	TC1,TC3	\$2,710,000	7.22	\$ 375,346	\$ 5,236
H	RPM	45,750	OB2,OB3	\$ 432,020	2.29	\$ 188,655	\$ 8,631
I	E. Meadow Estates	16,500	OB1,OB3	\$ 853,860	2.29	\$ 372,865	\$ 6,152
J	Stanton Girard	27,000	K1,K2,K3	\$2,120,480	4.96	\$ 427,516	\$ 11,543
K	Wilson Farms	45,075	K1,K2,K3	\$2,120,480	4.96	\$ 427,516	\$ 19,270
L	Toll Bros (Mindel)	25,500	RR1,RR2,RR3	\$4,712,000	3.27	\$1,440,979	\$ 36,745
M	K Hovnanian (Bellemead)	28,125	RR3	\$1,496,800	3.27	\$ 457,737	\$ 12,874
N	PPF Industrial	142,200	TC3	\$2,710,000	7.22	\$ 375,346	\$ 53,374

**IX. INCREASED CAPACITY COST ANALYSIS**

In order to allow any flows into the lower reaches of the Kingston, Oakeys Brook and Ridge Road interceptors, merely decreasing I & I will not be sufficient, and parallel sewer mains may need to be constructed within the interceptor's easements. It should be noted that the determination of remaining capacity in this study was calculated with the assumption that the interceptor sewers were constructed at minimum allowable slopes. It is possible that this is not the case for the entire length of each interceptor. To determine the actual capacity of each run along the interceptors, the actual lengths and depths of each run will need to be determined through an examination of as-built plans, if they exist, or surveying. The costs for any such study should be borne by the developers of the projects looking to connect into the sewer system.

Table 9 presents the estimated costs to increase the capacity of the three interceptors noted above. To develop these estimates, it was assumed that the entire interceptor upstream from the measuring point will need to be paralleled with a new sewer line. It was also assumed that the parallel sewer line would need to be the same size as the existing sewer line in order to comply with the DEP's minimum slope requirement for various size pipes. This is a worst case scenario for developing the maximum possible costs for providing additional capacity. The necessity of parallel mains and the sizes of such mains can only be determined once the above described studies have been completed.

Also included in Table 9 is the estimated cost to provide additional capacity at Pumping Station No. 10 and its downstream force main. These improvements were originally discussed in our July 2003 report on the subject and have been updated to March 2018 dollars.

**X. COSTS ATTRIBUTABLE TO PROPOSED DEVELOPMENTS**

The additional flows that are estimated to be generated by the currently proposed Third Round Affordable Housing developments will exacerbate the capacity and surcharging issues that exist within the Township's sanitary sewer system. In order to provide capacity for these flows, improvements to the sewer interceptors, the Township's Pumping Station No. 10, and its downstream force main will be necessary. These costs have been allocated to the proposed developments on a pro rata basis. That is, the cost of improvements required for the downstream interceptor and pumping station into which they will contribute flows has been converted into a cost per MGD and this unit cost has been multiplied by the projected rate of flow. The costs presented may be adjusted in the future after additional studies are performed to determine the actual extent of improvements required.

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***Richard A. Alaimo Associates***  
***- Consulting Engineers -***

# APPENDIX

*Richard A. Alaimo Associates*  
*- Consulting Engineers -*

# 2017 INFLOW & INFILTRATION REPORT

NOVEMBER 1, 2017



South Brunswick, NJ

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ALAIMO GROUP



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Cover

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## SECTION ONE: EXECUTIVE SUMMARY

CSL Services, Inc. (CSL) was retained by the Alaimo Group to conduct a temporary flow monitoring study in South Brunswick, NJ's wastewater collection system. A total of 13 flow monitors and 2 rain gauges were installed in early June 2017 and the monitoring period began on June 10th and continued to August 10th, 2017. The Final Report was submitted in September 2017. Figure 1.1 shows a typical flow monitor installation.



Figure 1.1: Typical Flow Monitoring Installation

Generally speaking, wastewater collection systems are designed with the capacity to handle the peak wastewater flow that is discharged by the homes and businesses that are the customers of the wastewater utility. There is also an allowance made for some extraneous contribution in the form of groundwater (infiltration) and rainwater runoff (inflow). Together these extraneous flows are called "I & I". As the pipes and manholes that make up a wastewater collection system deteriorate, the amount of I & I that enters the collection system can increase to unacceptable levels. Excessive I & I can result in an increase in treatment and transportation costs, and backups and overflows of untreated wastewater. The purpose of this study is to determine the amount of I & I that is entering the South Brunswick wastewater collection system and to identify which areas of the system should be considered priority areas as the Township takes the steps necessary to reduce this I & I.

This report is based on analysis of the data collected during the two-month period from June 10th, 2017 to August 10th, 2017. Flow data collected during dry weather periods was analyzed and dry weather infiltration rates were determined for each of the five sub-basins. This dry weather infiltration results from groundwater that is not directly rain related entering the sewer system through such sources as defective joints, cracked and broken pipe and other similar defects that can be below the groundwater table. Flow data collected during 11 rain events were analyzed and rainfall derived infiltration and inflow, or RDII, rates were determined. CSL was then able to compare wastewater flows from dry weather periods to wastewater flows during rain events.

- Rainfall-derived infiltration and inflow (RDII) is the extraneous flow that occurs as a direct result of rain events and is primarily inflow entering the system through sources such as shallow pipe defects, manhole lids, storm connections, and defective cleanouts.
- Dry Weather infiltration is mostly unrelated to rain events and exists more or less continuously. The amount of dry weather infiltration is a function (typically 85%) of dry weather minimum flows.

Figure 1.2 presents a generic hydrograph that illustrates the relationship between typical dry weather flow patterns, typical wet weather flow patterns and typical rainfall related flow patterns.

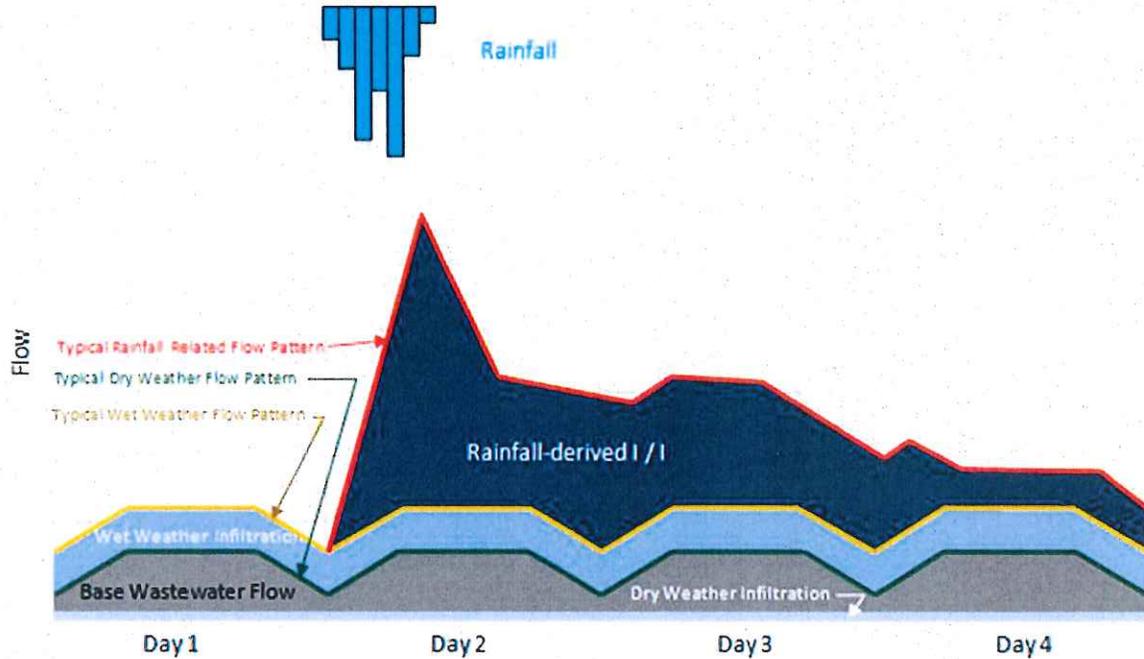


Figure 1.2: Hydrograph showing dry, wet, and rainfall related flow patterns

Note that the green line represents a typical dry day flow pattern and is comprised of Base Wastewater Flow and some amount of Dry Weather Infiltration. The yellow line represents a typical wet weather flow pattern, which is normally somewhat greater than the dry weather pattern. The difference between the green and yellow lines is Wet Weather infiltration and is due to higher groundwater levels during the wet season. The red line represents the flow pattern during and after a rainfall event. The difference between the red line and the yellow line is RDII.

**SECTION TWO: INTRODUCTION**

The five basins that were monitored within the South Brunswick wastewater collection system contain about 860,843 linear feet of gravity sewer line.

The 13 flow meters and 2 rain gauges were installed at the following locations in the South Brunswick wastewater collection system.

<u>Site</u>	<u>Diameter</u>	<u>Location</u>
K1	18"	8 Quentin Road
K2	24"	1026 Ridge Road
K3	30"	1026 Ridge Road
OB1	18"	398 Black Horse Lane
OB2	12"	335 Black Horse Lane
OB3	20"	2082 US-130
TC1	24"	Access road at 182 Major Road
TC2	24"	1 Deans Pond Lane
TC3	36"	2088 US- 130
RR1	20"	26 Stouts Lane
RR2	21"	4300 Rt. 1
RR3	24"	1022 Ridge Road
RT130	36"	2140 Rt.130
PS 7 RG		3 Pyne Rd
PS 10 RG		2082 US-130

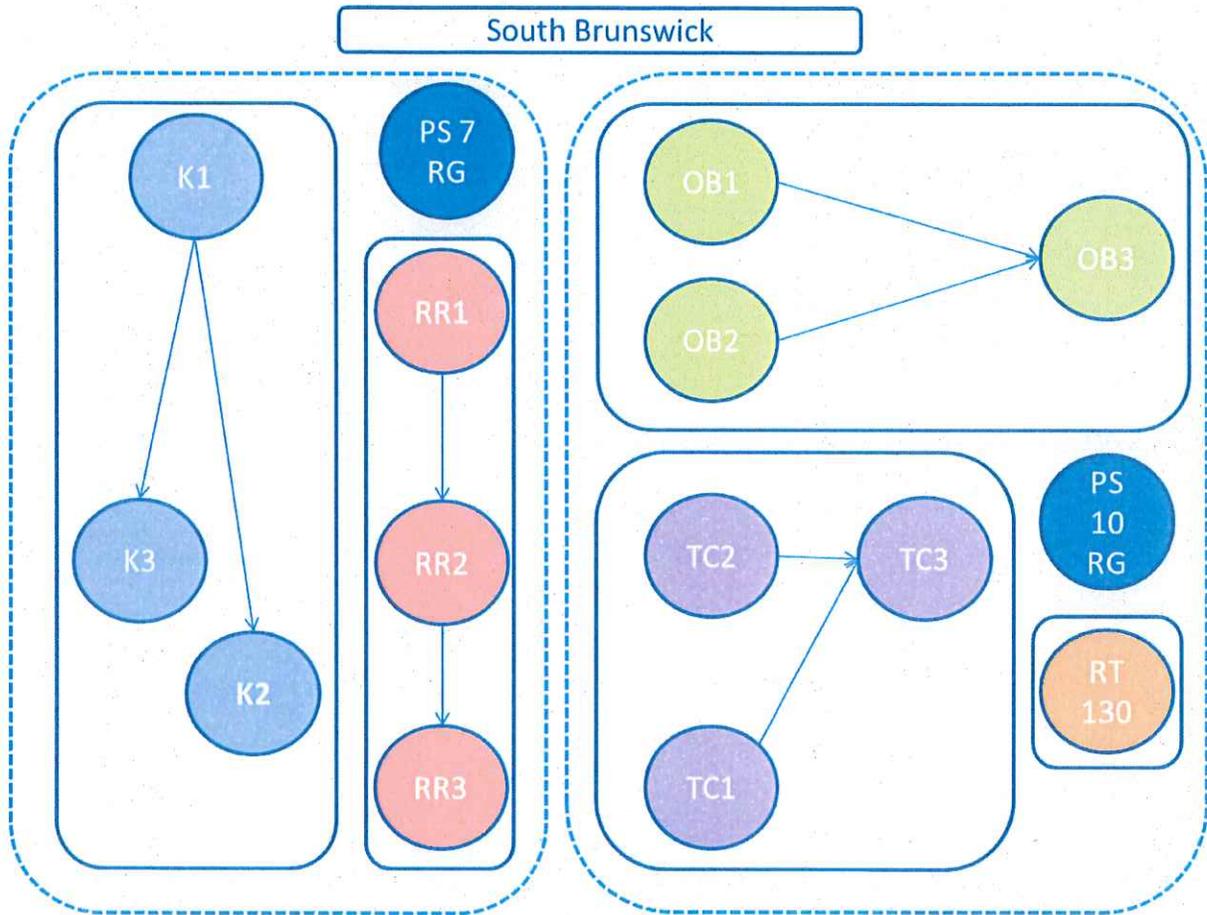


Figure 2.1: Flow Schematic

Figure 2.1 illustrates the relationship between the flow monitors that were installed in the collection system. Note that monitoring points K1, RR1, OB1, OB2, TC1, TC2 and RT 130 have no other flow monitors upstream. The data collected at these points is considered “independent” data because it does not include metered upstream flows. The data collected at monitoring points K2, K3, RR2, RR3, OB3, and TC3 are considered “dependent” data because upstream metered flows must be subtracted to determine the net flow from this sub-basin.

**SECTION THREE: ANALYSIS AND RESULTS**

**Dry Weather Analysis:**

This week occurred from June 10th to June 16th, 2017. From this driest week data, the average dry weather flow for weekdays, the average dry weather flow for weekends, the average dry weather flow for the 7-day period and the minimum dry weather flow were determined. Based on the standard assumption that 85% of the average dry weather flow for the 7-day period is base wastewater flow, the dry weather infiltration was determined. These results are shown in Table 3.1.

**Wet Weather Analysis:**

11 rain events were selected for analysis with varying totals and durations. The rain events used for the study are shown in Table 3.1

Dates	PS 7 (in)	PS 10 (in)
6/17/2017	0.65"	0.64"
6/19/2017	1.28"	1.19"
6/24/2017	1.8"	1.98"
7/7/2017	0.2"	0.46"
7/13/2017	0.52"	0.68"
7/20/2017	0.13"	0.25"
7/22/2017	0.95"	1.05"
7/24/2017	0.79"	0.8"
8/2/2017	1.04"	1.14"
8/5/2017	0.47"	0.58"
8/7/2017	0.6"	0.8"

Table 3.1: Rain Events Selected for Analysis

For each site, the peak 24-hour flow volume was plotted against the contributing 24-hour rain amount for each of the analyzed rains. The results were normalized by conducting a regression analysis to determine the projected RDII that could result from a 2-year 24 hour storm event. National Oceanographic and Atmospheric Administration Intensity Duration Frequency Curves for South Brunswick, New Jersey were used to determine design storms. Regression analysis curves for each site can be found in Appendix A-E.

**Summary of Analysis:**

Table 3.2 presents a summary of the results of this study in an easy-to-read format. The table is divided into three sections: Sewer Sub-System Details, Dry Weather Results, and Wet Weather Results.

Site	SUB-SYSTEM DETAILS				DRY WEATHER RESULTS						WET WEATHER RESULTS							
	Pipe Diameter (in)	Mini System Size (LF)	Silt, Debris, Gravel, Grease	Depth (in)	AVERAGE			MINIMUM			PEAK			Net RDII 2 Yr-24 hour (mgd)	Net RDII per LF (gpd/LF)	Priority	Peak Depth (in)	Peak Depth/Diameter (%)
					Depth/Diameter (%)	Velocity (fps)	Flow (mgd)	Min. Flow (mgd)	DWI (mgd)	Depth (in)	Depth/Diameter (%)	Velocity (fps)	Net Flow (mgd)					
K1	18	138,720	0	1.77	10%	1.22	0.16	0.00	0.00	4.13	23%	3.9	0.693	1,420	10.23	7	7.82	43%
K2	24	118,222	0	6.93	29%	1.68	0.82	0.44	0.38	8.65	36%	2.0	0.915	1,701	14.39	6	20.75	86%
K3	30	118,222	0	3.43	11%	3.36	0.68	0.43	0.37	4.37	15%	3.9	0.707	0.740	6.26	11	7.61	25%
OB1	18	23,195	0	5.76	32%	1.88	0.60	0.24	0.20	7.69	43%	2.5	1.093	0.970	41.82	1	25.80	143%
OB2	12	109,248	0	3.56	30%	1.25	0.16	0.06	0.05	4.47	37%	2.1	0.351	0.190	1.74	13	8.06	67%
OB3	20	10,265	0	5.78	29%	2.58	0.91	0.39	0.33	7.02	35%	3.8	0.056	0.280	27.28	3	10.50	52%
TC1	24	18,216	0	5.38	22%	1.10	0.39	0.10	0.08	7.20	30%	1.7	0.856	0.128	7.01	10	12.24	51%
TC2	24	6,246	0	0.54	2%	0.43	0.01	0.00	0.00	1.01	4%	0.9	0.024	0.019	3.02	12	5.23	22%
TC3	36	33,033	1.5	13.94	39%	0.69	1.08	0.55	0.47	18.50	51%	1.3	1.697	0.648	19.61	4	31.04	86%
RR1	20	112,110	0	8.36	42%	1.48	0.84	0.37	0.32	10.38	52%	2.2	1.513	0.848	7.56	9	44.75	224%
RR2	21	49,102	0	7.64	36%	1.87	0.97	0.42	0.36	10.50	50%	2.4	0.285	0.824	16.78	5	43.47	207%
RR3	24	30,672	0	11.34	47%	1.67	1.58	0.77	0.65	14.47	60%	2.2	0.966	1.085	35.37	2	31.25	130%
RT130	36	93,592	0	9.91	28%	1.19	1.24	0.40	0.34	12.38	34%	1.8	2.214	0.830	8.87	8	14.90	41%
Total		860,843												9,683	199.97			

Table 3.2: Summary of Results

for D/D  
 0.50  
 0.60  
 0.67  
 0.60  
 0.50  
 0.67

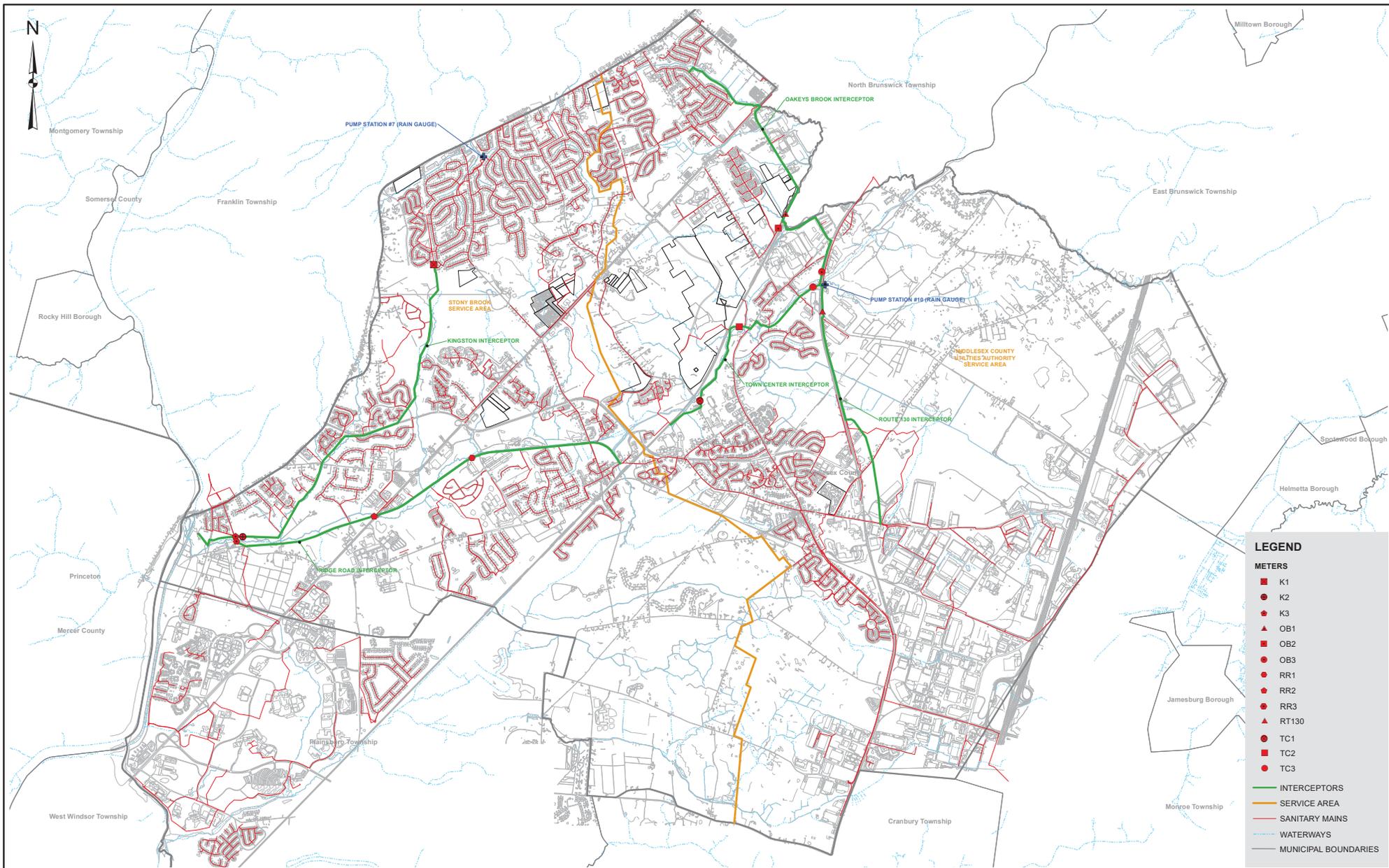
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#### SECTION FOUR: CONCLUSIONS

This analysis concluded that an RDII quantity of 199.97 gpd/LF would be expected for a 2-year, 24-hour rain event. Site specific contributions and priority classifications for the study can be found on table 3.2. The three monitoring points of OB1, OB3 and RR3 are identified as the highest priorities based on wet weather RDII rates of over 25 gpd/LF. Overall these three lines contribute to about 52% of the total RDII per linear foot and only contain roughly 7% of the total linear footage in the collection system. It is generally considered to be cost-effective to pursue remedial activities in areas that contribute RDII at rates greater than 5.0 gpd/LF.

Common practices to further identify the specific source of Inflow and Infiltration challenges are:

- Manhole inspections,
- Wet Weather flow Isolations,
- CCTV inspections,
- Smoke testing



**LEGEND**

**METERS**

- K1
- K2
- K3
- ▲ OB1
- OB2
- OB3
- RR1
- RR2
- RR3
- ▲ RT130
- TC1
- TC2
- TC3

— INTERCEPTORS  
 — SERVICE AREA  
 — SANITARY MAINS  
 - - - WATERWAYS  
 — MUNICIPAL BOUNDARIES

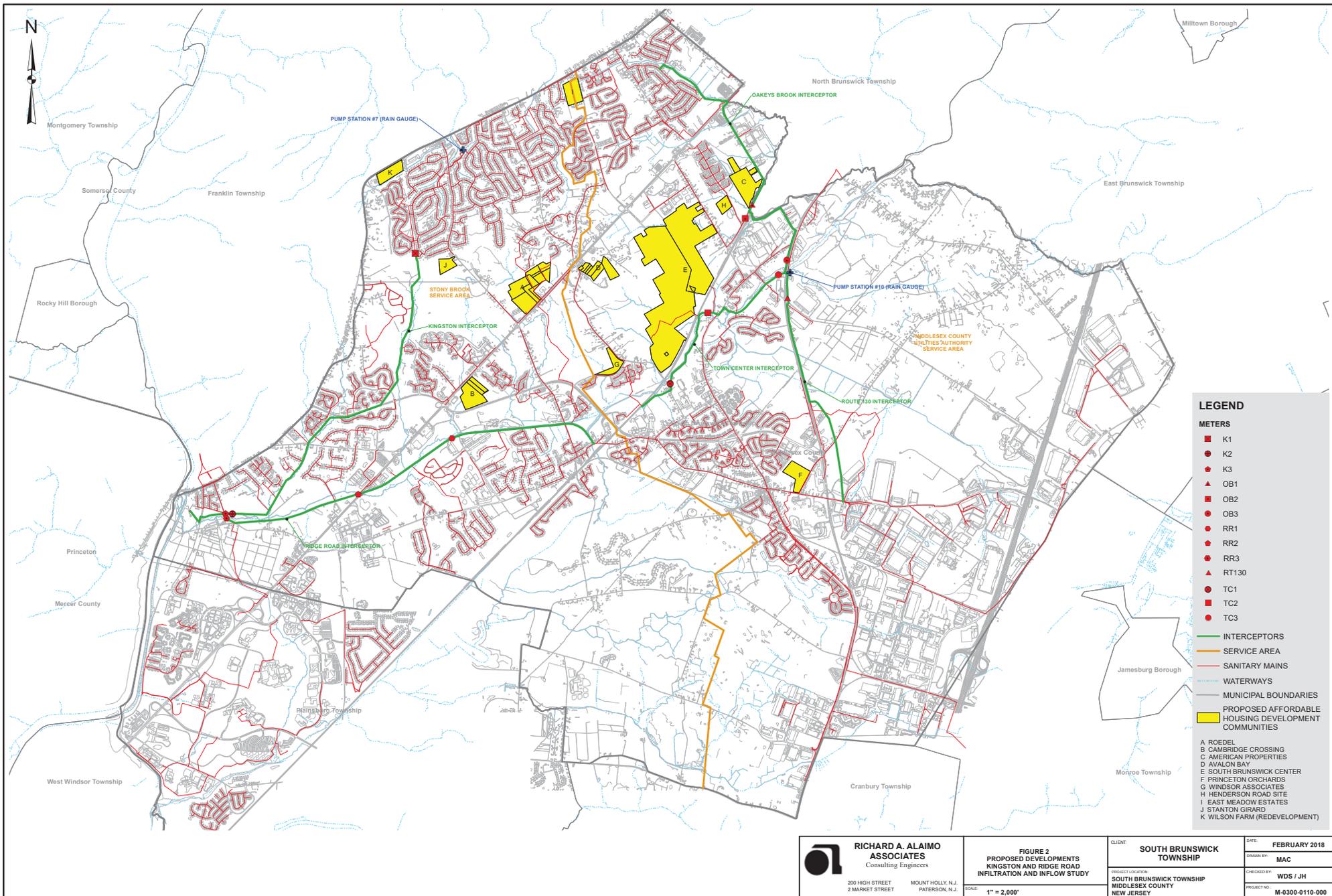
**RICHARD A. ALAIMO ASSOCIATES**  
 Consulting Engineers

200 HIGH STREET MOUNT HOLLY, N.J.  
 2 MARKET STREET PATERSON, N.J.

**FIGURE 1**  
**PROPOSED MONITORS**  
**KINGSTON AND RIDGE ROAD**  
**INFILTRATION AND INFLOW STUDY**

SCALE 1" = 2,000'

CLIENT	<b>SOUTH BRUNSWICK TOWNSHIP</b>	DATE	FEBRUARY 2018
DRAWN BY	MAC	CHECKED BY	WDS / JH
PROJECT LOCATION	<b>SOUTH BRUNSWICK TOWNSHIP</b> <b>MIDDLESEX COUNTY</b> <b>NEW JERSEY</b>	PROJECT NO.	M-0300-0110-000



**LEGEND**

**METERS**

- K1
- K2
- ▲ K3
- OB1
- OB2
- OB3
- RR1
- RR2
- RR3
- RT130
- ▲ TC1
- TC2
- TC3

- INTERCEPTORS
- SERVICE AREA
- SANITARY MAINS
- WATERWAYS
- MUNICIPAL BOUNDARIES
- PROPOSED AFFORDABLE HOUSING DEVELOPMENT COMMUNITIES

A ROEDEL  
 B CAMBRIDGE CROSSING  
 C AMERICAN PROPERTIES  
 D AVALON BAY  
 E SOUTH BRUNSWICK CENTER  
 F PRINCETON ORCHARDS  
 G WINDSOR ASSOCIATES  
 H HENDERSON ROAD SITE  
 I EAST MEADOW ESTATES  
 J STANTON GIRARD  
 K WILSON FARM (REDEVELOPMENT)

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200 HIGH STREET MOUNT HOLLY, N.J.  
 2 MARKET STREET PATERSON, N.J.

**FIGURE 2**  
 PROPOSED DEVELOPMENTS  
 KINGSTON AND RIDGE ROAD  
 INFILTRATION AND INFLOW STUDY

SCALE 1" = 2,000'

CLIENT	<b>SOUTH BRUNSWICK TOWNSHIP</b>	DATE	FEBRUARY 2018
DESIGN BY	MAC	CREATED BY	WDS / JH
PROJECT LOCATION	SOUTH BRUNSWICK TOWNSHIP MIDDLESEX COUNTY NEW JERSEY	PROJECT NO.	M-0300-0110-000