



BOROUGH OF OCEANPORT

PLANNING/ZONING BOARD

AGENDA • JANUARY 12, 2021

Reorganization

REMOTE/VIRTUAL

7:00 PM

Municipal Building, 315 E. Main Street, Oceanport, NJ 07757

I. Call to Order

II. Open Public Meetings Statement

This meeting complies with the Open Public Meetings Act by adequate and electronic notification on January 4, 2021 of this virtual/remote meeting and its location, date and time to the Asbury Park Press and Two River Times and by the posting of same on the municipal bulletin board and Borough's Web Site. This meeting is also being broadcast on the Borough's Local Public Access Channel, Verizon FiOS Channel 28. Members of the general public can register for meetings from the Borough website at www.oceanportboro.com by scrolling to the bottom of the homepage and clicking "REGISTER for Mayor & Council Virtual Meetings" on the left-hand side of the screen. Registering allows the general public to view and participate in meetings on their computers, smart phones and tablets. Once registered, members of the general public will be muted upon entry to a meeting. Registration allows a member of the general public to participate during the public portions of a meeting by using one of the following options:

1. Text. Once registered for and admitted to a meeting, members of the general public can text comments through the GotoWebinar application. These text comments will be read out loud by the Secretary during the livestream public portions of the meeting.
2. Raise Your Hand Feature. Once registered for and admitted to a meeting, members of the general public can use the GoToWebinar's "Raise Your Hand" icon to be acknowledged for an opportunity to speak. Once recognized and advised to speak, members of the general public may need to unmute themselves to participate in the meeting.

Whether registered or not, the general public can (a) e-mail questions or comments prior to or during the meeting to public.comments@oceanportboro.com or (b) call the Borough's Public Comments Line at (732)-272-8337. The Public Comments Line is only answered during the livestream broadcast of a meeting. A caller to the Public Comments Line must provide his or her name and address in order to participate in a meeting. Once this information is provided, callers will either be admitted to speak at the meeting immediately or they will be called back by the Borough at the appropriate or designated time so that they can speak. Speakers participating through the Public Comments Line will be placed on speaker and all comments made will be part of the digital record of the meeting. The instructions for Public Participation in the Borough's meetings are also available on the Borough's website at www.oceanportboro.com.

III. Board Policy

- It is Board Policy that no application will be opened after 10:00 P.M.
- No new testimony will be taken after 10:30 P.M., except at the discretion of the Board.

IV. Flag Salute

V. Oaths of Office

1. Patricia Cooper, Class I (Mayor's Designee)
2. Thomas J. Tvrdik, Class III (Council Liaison)
3. Robert Kleiberg, Class IV
4. John Kahle, Class IV
5. Darren Davis, Class IV
6. Michael Dailey, Alternate #1

VI. Roll Call**VII. Election of Chairman****VIII. Election of Vice-Chairman****IX. Appointment of Board Secretary****X. Board Business**

PR-21-1 Approval of 2021 Meeting Schedule

PR-21-2 Resolution appointing Board Attorney

PR-21-3 Resolution appointing Board Engineer/Planner

Correspondence

1. PB2020-19 KBeeHaven LLC

XI. Old Business

1. PB2020-18 Beim, Jake
2. PB2020-21 Somerset Development

XII. Petitions from the Public**XIII. Adjournment**



Planning/Zoning Combined Board

315 E. Main Street
Oceanport, NJ 07757

SCHEDULED

RESOLUTION - PB 21-1

Meeting: 01/12/21 07:00 PM
Department: Planning/Zoning Board
Category: PB Resolutions
Prepared By: Jeanne Smith
Initiator: Jeanne Smith
Sponsors:
DOC ID: 1931

RESOLUTION OF THE BOROUGH OF OCEANPORT PLANNING BOARD APPROVING ANNUAL MEETING SCHEDULE FOR 2021 January 12, 2021

WHEREAS, the Open Public Meetings Act requires that all public bodies at the time of their annual organization meetings or within 7 days thereof, shall post, mail to newspapers and give notice to certain persons the schedule of meetings for the year 2021.

NOW, THEREFORE, BE IT RESOLVED that the Oceanport Planning/Zoning Combined Board for the 2021 calendar year will conduct the following meetings for the purpose of conducting Board business for 2021. Due to the ongoing COVID19 pandemic and Governor's Executive Orders, meetings will be held virtually from the Clement V. Sommers Municipal Building, 910 Oceanport Way, Oceanport, NJ 07757 until further notice. Meetings are generally held on the second and fourth Tuesday of each month except as otherwise noted below. All meetings will begin at 7:00 p.m. A Workshop Session will be held at 6:30 p.m. prior to a Regular Meeting as the Board deems it necessary. Virtual meetings will be held via the GoToWebinar online meeting platform. Instructions for joining and participating in virtual meetings are available on the Borough website at www.oceanportboro.com on the home page by clicking the thumbnail "Instructions for Participation Virtual Meetings". Official action may be taken.

- January 12th and 26th
- February 9th and 23rd
- March 9th and 23rd
- April 13th and 27th
- May 11th and 25th
- June 8th and 22nd
- July 13th*
- August 10th*
- September 14th and 28th
- October 12th and 26th
- November 9th*
- December 14th*

*Summer schedule is in effect with one meeting in July and August and due to holidays, Nov. and December have one meeting scheduled.

BE IT FURTHER RESOLVED that the Board Secretary is hereby directed to file a copy of the schedule with the municipal clerk, post and maintain posted a copy of the resolution in the place designated for the posting of notices and forward a copy of same to The Two River Times and the Asbury Park Press.

BE IT FURTHER RESOLVED that this resolution and the schedule contained herein may be amended from time to time provided the terms of the Act are fully followed.



Planning/Zoning Combined Board

315 E. Main Street
Oceanport, NJ 07757

SCHEDULED

RESOLUTION - PB 21-2

Meeting: 01/12/21 07:00 PM
Department: Planning/Zoning Board
Category: PB Resolutions
Prepared By: Jeanne Smith
Initiator: Jeanne Smith
Sponsors:
DOC ID: 1932

RESOLUTION OF THE OCEANPORT PLANNING BOARD APPOINTMENT OF BOARD ATTORNEY FOR CY2021

WHEREAS, Chapter 291, Laws of New Jersey, 1975, known as the Municipal Land Use Law, provides for the appointment of a Planning Board Attorney authorized to practice in the State of New Jersey; and

WHEREAS, the Planning Board desires to retain the services of Kevin E. Kennedy, Esq. as the Board Attorney for the period commencing January 1, 2021 and ending December 31, 2021 by means of a non-fair and open contract based on his experience and specialized knowledge of land use matters and continuity with ongoing litigation and pending matters pursuant to the provisions of N.J.S.A. 19:44A-20.B; and

WHEREAS, it has been determined that the value of the services may exceed \$17,500.00; and

WHEREAS, Kevin E. Kennedy, Esq. has completed and submitted a Business Entity & Political Contribution Disclosure Certification which certifies that Kevin E. Kennedy, Esq. has not made any reportable contributions to a political or candidate committee in the Borough of Oceanport in the previous one year, and the contract will prohibit Kevin E. Kennedy, Esq. from making any reportable contributions through the term of the contract; and

WHEREAS, funds shall be available for the stated purpose in the 2021 municipal budget subject to adoption of the 2021 budget.

NOW THEREFORE, BE IT RESOLVED, by the Planning Board of the Borough of Oceanport, County of Monmouth, State of New Jersey that:

1. Kevin E. Kennedy, Esq. be and is hereby appointed as Board Attorney for CY2021.
2. Kevin E. Kennedy, Esq. is prohibited from making any reportable contribution to a political or candidate committee during the term of this appointment.
3. The Chairman and Board Secretary are hereby authorized to execute a contract on behalf of the Borough of Oceanport with Kevin E. Kennedy, Esq. for legal services for a monthly retainer of \$500.00 per month for Board meetings subject to adoption of the 2021 municipal budget.
4. That the contract shall also provide for an open-ended contract for services performed in regards to land development applications contingent upon the availability of funds in the Developer's Escrow and municipal budget with no firm quantities being guaranteed. Funds will be certified and encumbered by individual purchase order prior to each request for service.
5. This contract is awarded without competitive bidding as a "Professional Service" under the provisions of the Local Public Contracts Law because the service is a recognized profession, licensed and regulated by the State of New Jersey, and bids are not required as per N.J.S.A. 40A:11-1, et seq.

BE IT FURTHER RESOLVED that the Business Disclosure Entity Certification and Political Contribution Disclosure Form, the contract & resolution shall be placed on file in the office of the Borough Clerk.

BE IT FURTHER RESOLVED that a notice of this action shall be printed once in a newspaper of general circulation within the boundaries of the Borough of Oceanport.



Planning/Zoning Combined Board

315 E. Main Street
Oceanport, NJ 07757

SCHEDULED

RESOLUTION - PB 21-3

Meeting: 01/12/21 07:00 PM
Department: Planning/Zoning Board
Category: PB Resolutions
Prepared By: Jeanne Smith
Initiator: Jeanne Smith
Sponsors:
DOC ID: 1934

RESOLUTION OF THE OCEANPORT PLANNING BOARD APPOINTMENT OF BOARD ENGINEER/PLANNER FOR CY2021

WHEREAS, Chapter 291, Laws of New Jersey, 1975, known as the Municipal Land Use Law, provides for the appointment of a Planning Board Engineer/Planner authorized to practice in the State of New Jersey; and

WHEREAS, the Planning Board desires to retain the services of William White, PE/PP, as the Board Engineer/Planner for the period commencing January 1, 2021 and ending December 31, 2021 by means of a non-fair and open contract based on his experience and specialized knowledge of land use matters and continuity with ongoing projects pursuant to the provisions of N.J.S.A. 19:44A-20.B; and

WHEREAS, it has been determined that the value of the services may exceed \$17,500.00; and

WHEREAS, William White, PE/PP has completed and submitted a Business Entity & Political Contribution Disclosure Certification which certifies that William White, PE/PP has not made any reportable contributions to a political or candidate committee in the Borough of Oceanport in the previous one year, and the contract will prohibit William White, PE/PP from making any reportable contributions through the term of the contract; and

NOW THEREFORE, BE IT RESOLVED, by the Planning Board of the Borough of Oceanport, County of Monmouth, State of New Jersey that:

1. William White, PE/PP be and is hereby appointed as Board Engineer/Planner for CY2021.
2. William White, PE/PP is prohibited from making any reportable contribution to a political or candidate committee during the term of this appointment.
3. The Chairman and Board Secretary are hereby authorized to execute a contract on behalf of the Borough of Oceanport with William White, PE/PP of the firm Maser Consulting PA (soon to be Colliers International) for engineering/planning services.
4. That the contract shall also provide for an open-ended contract for services performed in regards to land development applications contingent upon the availability of funds in the Developer's Escrow and municipal budget with no firm quantities being guaranteed. Funds will be certified and encumbered by individual purchase order prior to each request for service.
5. This contract is awarded without competitive bidding as a "Professional Service" under the provisions of the Local Public Contracts Law because the service is a recognized profession, licensed and regulated by the State of New Jersey, and bids are not required as per N.J.S.A. 40A:11-1, et seq.

BE IT FURTHER RESOLVED that the Business Disclosure Entity Certification and Political Contribution Disclosure Form, the contract & resolution shall be placed on file in the office of the Borough Clerk.

BE IT FURTHER RESOLVED that a notice of this action shall be printed once in a newspaper of general circulation within the boundaries of the Borough of Oceanport.

**Planning/Zoning Combined Board**

315 E. Main Street
Oceanport, NJ 07757

SCHEDULED**PLANNING BOARD APPLICATION (ID # 1747)**

Meeting: 01/12/21 07:00 PM
Department: Planning/Zoning Board
Category: PB Applications
Prepared By: Jeanne Smith
Initiator: Jeanne Smith
Sponsors:
DOC ID: 1747

PB2020-19 KBeeHaven LLC

CARRIED from November 10, 2021
196 Monmouth Blvd
Block 65, Lot 37

HISTORY:

11/10/20 Planning/Zoning Board



Planning/Zoning Combined Board

315 E. Main Street
Oceanport, NJ 07757

SCHEDULED

PLANNING BOARD APPLICATION (ID # 1746)

Meeting: 01/12/21 07:00 PM
Department: Planning/Zoning Board
Category: PB Applications
Prepared By: Jeanne Smith
Initiator: Jeanne Smith
Sponsors:
DOC ID: 1746

PB2020-18 Beim, Jake

CARRIED from November 10, 2020

177 Comanche Drive

Block 40, Lots 21 & 21.01

Bulk variances for new single family home & associated improvements

HISTORY:

10/20/20 Planning/Zoning Board

EXHIBITS

A-1 Land Development Application

A-2 Architectural Plans, 2 Sheets, prepared by Anthony Condouris Architect Inc., dated May 14, 2020

A-3 Boundary & Topographic Survey Map, prepared by Richlan, Lupo & Associates, Inc., dated July 29, 2019

A-4 Plot Plan, 4 Sheets, prepared by InSite Engineering, LLC, dated May 8, 2020, last revised September 2, 2020

A-5 Maser Consulting Review Letter dated September 23, 2020

A-6 Google Aerial Photograph of Site and Surrounding Properties, undated.

11/10/20 Planning/Zoning Board



Engineers
Planners
Surveyors
Landscape Architects
Environmental Scientists

11.1.a

Corporate Headquarters
331 Newman Springs Road, Suite 203
Red Bank, NJ 07701
T: 732.383.1950
F: 732.383.1984
www.maserconsulting.com

September 23, 2020

VIA EMAIL

Jeanne Smith, Planning Board Secretary
Borough of Oceanport Planning Board
315 E. Main Street
Oceanport, NJ 07757

Re: Bulk Variance
177 Comanche Drive
Block 40, Lot 21
PB2019-18
Borough of Oceanport, Monmouth County, New Jersey
MC Project No. OPP-277

Dear Board Members:

Our office has received the following information in support of the above-referenced Bulk Variance application:

- Plans entitled “Proposed New Construction for the Beim Residence”, prepared by Anthony Condouris Architect Inc., dated May 14, 2020 and consisting of two (2) sheets;
- Plan entitled “Boundary and Topographic Survey”, prepared by Richlan, Lupo & Associates, Inc., dated July 29, 2019 and consisting of one (1) sheet.
- Plan entitled “Plot Plan”, prepared by InSite Engineering LLC, last revised September 2, 2020 and consisting of four (4) sheets.

The subject property is situated in the R-3 – Residential Single-Family Zone District and contains 26,605 SF (0.611 acres) on the northeast corner of the intersection of Comanche Drive and the unimproved portion Mohican Avenue. The Applicant demolished the previously existing house and proposes to construct a single-family dwelling with an attached two-car garage.

Based on our review of the application, we recommend that the application be deemed **complete** and scheduled for the next available hearing. A planning and engineering review of the application is provided below.

Variances/Design Waivers

We offer the following comments for the Board’s consideration:

Customer Loyalty through Client Satisfaction



1. Bulk variances are required for the following:
 - a. Minimum Lot Width: 120 feet required; 75 feet existing/proposed. A Bulk Variance is required for the pre-existing condition.
 - b. Minimum Front Yard: 15 feet required; 3.1 feet proposed from unimproved portion of Mohican Avenue. A Bulk Variance is required.
 - c. Maximum Permitted Height, Principle Structure: 35' permitted, 37' is proposed. A Bulk Variance is required.
 - d. Average Rear Setback (390:14D): 106.5' required, 54.2' existing, $\pm 93.5'$ proposed. The setback should be measured to the second floor balcony.
 - e. In accordance with Ordinance Section 390-17.C., no accessory structures are permitted in the front yard. The Applicant is proposing to maintain the PVC Shed that is 12.9 feet from the Comanche Drive property line. A Bulk Variance is required. The applicant shall clarify if the shed in the unimproved portion of Mohican Avenue is to remain.

The Municipal Land Use Law permits the granting of a hardship variance under either of two following situations (C.40:55D-70c):

- **Hardship c(1) - Physical Constraints** – Hardship variances may be granted if the strict application of the ordinance would impose peculiar and exceptional practical difficulties to, or exceptional and undue hardship upon the developer based upon the existence of the following conditions:
 - a. Exceptional narrowness, shallowness or shape of a specific piece of property;
 - b. Exceptional topographic conditions or physical features uniquely affecting a piece of property; and,
 - c. An extraordinary and exceptional situation uniquely affecting a specific piece of property of the structures lawfully existing thereon.
- **Flexible “c” or c(2) - Benefits Outweighing Detriments** - A variance may be granted where the purpose of the Municipal Land Use Law would be advanced by the proposed deviation and the benefits of the deviation would substantially outweigh any detriment.

The Applicant shall provide testimony in support of the variance being requested and/or identified.



Jeanne Smith, Planning Board Secretary
MC Project No. OPP-277
September 23, 2020
Page 3 of 3

General Comments

1. Building height is measured from the crown of the road at the midpoint of the property frontage to the peak of the roof. Note #5 of the Zoning chart states that "For non-conforming lots, the (permitted) height shall be determined only after Planning Board review to assure compliance with the intent and purpose of the zoning law." The distance from the first floor to the ridge is 30.75. The first floor is elevation 12.4 thus yielding a roof elevation of 43.15. The difference from the ridge elevation to the road is $43.15 - 5.4 = 37.75'$. The applicant shall verify the height calculation prior to advertising the requested variances. The Building Height Compliance Detail on the site plan appears to have an incorrect floor elevation.
2. The grading along the northern side yard will trap runoff that is presently traveling from Lot 20 southerly to the unimproved section of Mohican Avenue.
3. The property is located in an AE10 Flood Zone. The lowest finished floor is 12.4. The Design Flood Elevation is 12.4, so all construction below that shall be of water-resistant materials. A note is already provided on the plans.

Additional Agency Approvals

This application is subject but not limited to the following outside agency approvals or letter of no jurisdiction:

- a. NJDEP CAFRA
- b. Two River Water Reclamation Authority
- c. New Jersey American Water
- d. Freehold Soil Conservation District

We reserve the opportunity to further review and comment on this application and all pertinent documentation, pursuant to testimony presented at the public hearing.

Should you have any questions regarding this matter, please do not hesitate to contact me directly.

Very truly yours,

MASER CONSULTING P. A.

A handwritten signature in blue ink, appearing to read 'W. H. White, III'.

William H.R. White, III, P.E., P.P., C.M.E.
Planning Board Engineer and Planner

WHW/

cc: Thomas J. Hirsch, Esq. (via email thomasjhirsch@aol.com)
Douglas Clelland, P.E. (via email doug@insiteeng.net)
Jake Beim (via email jakebeim@gmail.com)

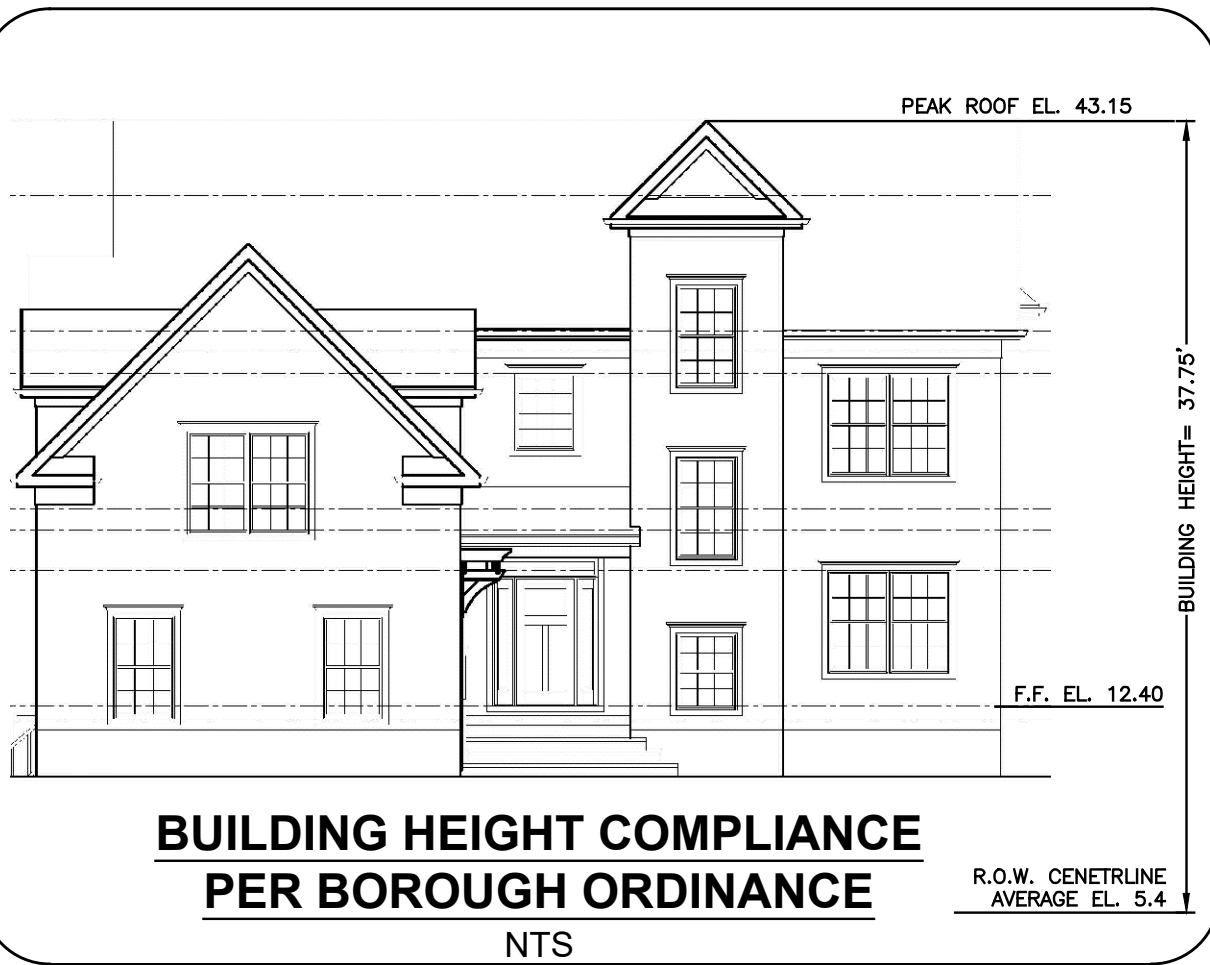
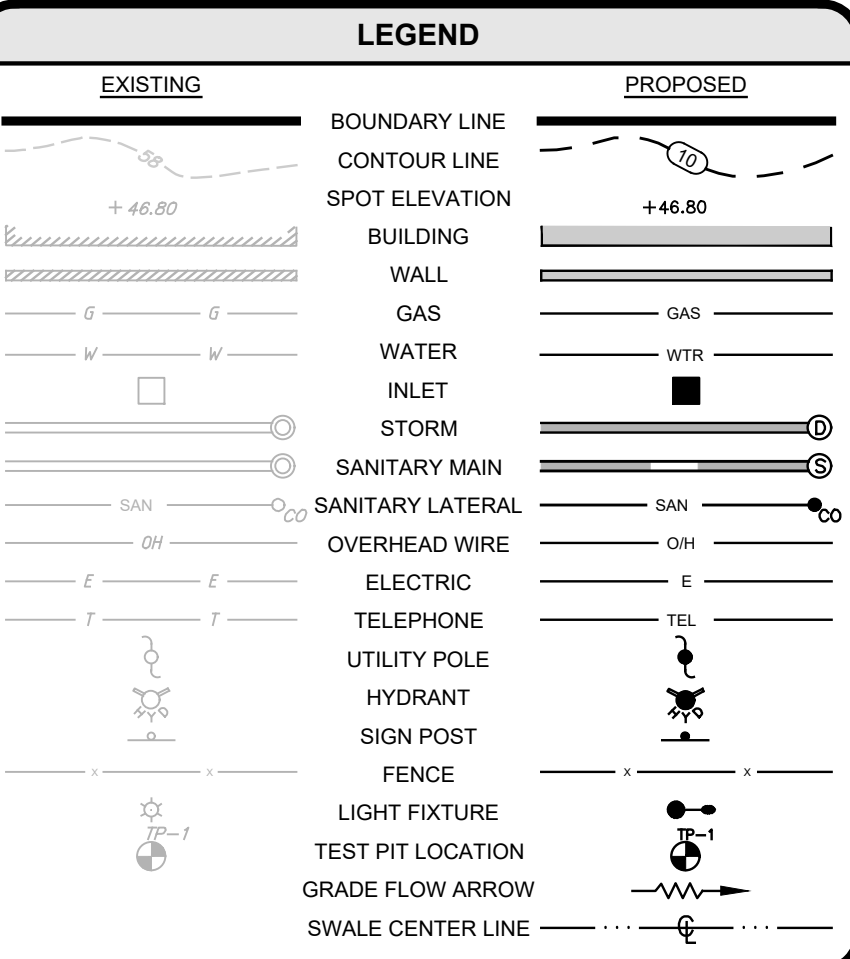
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ZONING COMPLIANCE CHART						
R-3 (SINGLE-FAMILY) ZONE						
SINGLE-FAMILY DETACHED DWELLING: PERMITTED						
ORD SECTION	STANDARD	REQUIRED	EXISTING	PROPOSED	COMPLIES	
SCHED. II	MIN. LOT AREA (SF)	12,000	26,605 (0.61 AC)		YES	
SCHED. II	MIN. LOT WIDTH (FT)	120	75	(N)	NO CHANGE	(N)
SCHED. II	MIN. LOT DEPTH (FT)	100	354.73		NO CHANGE	YES
SCHED. II	PRINCIPAL BUILDING					
SCHED. II	MIN. FRONT YARD SETBACK (FT)					
	COMANCHE DRIVE	129.7 (1)	261.8		179.62	YES
	MOHICAN AVENUE	15	3.3	(N)	10.00	(V) NO (V)
SCHED. II	MIN. REAR YARD SETBACK (FT)	112.2 (2)	54.2	(N)	93.73	(V) NO (V)
	TO PERGOLA (FT)		N/A		82.20	(V) NO (V)
SCHED. II	MIN. SIDE YARD SETBACK					
SCHED. II	ONE SIDE (FT)	10	4.4	(N)	10.00	(X) YES
SCHED. II	BOTH SIDES (FT)	25	7.7	(N)	25.00	(X) YES
SCHED. II	MAX. BUILDING HEIGHT (FT)	35	(a)		37.75	(V) NO (V)
SCHED. II	MAX. BUILDING HEIGHT (STORIES)	2.5	2		2.5	YES
SCHED. II	MAX. BUILDING COVERAGE (%)	25	8.5		11.68	YES
390-17C (2)	MAX. DWELLINGS PER ACRE	3.7	1.6		1.6	YES
SCHED. II	ACCESSORY BUILDING					
SCHED. II	ALLOWABLE YARD LOCATION (SHED)	SIDE/REAR	FRONT	(N)	N/A	N/A
SCHED. II	MIN. REAR YARD SETBACK (FT)	5	N/A		N/A	N/A
SCHED. II	MIN. SIDE YARD SETBACK (FT)	10	12.7		N/A	N/A
SCHED. II	MAX. BUILDING HEIGHT (FT)	15/1	N/A		N/A	N/A
SCHED. II	MAX. BUILDING COVERAGE (%)	5	0.2		N/A	N/A
	LOT COVERAGE					
	MAX. IMPERVIOUS COVERAGE (%)	37	28.4		29.9	YES

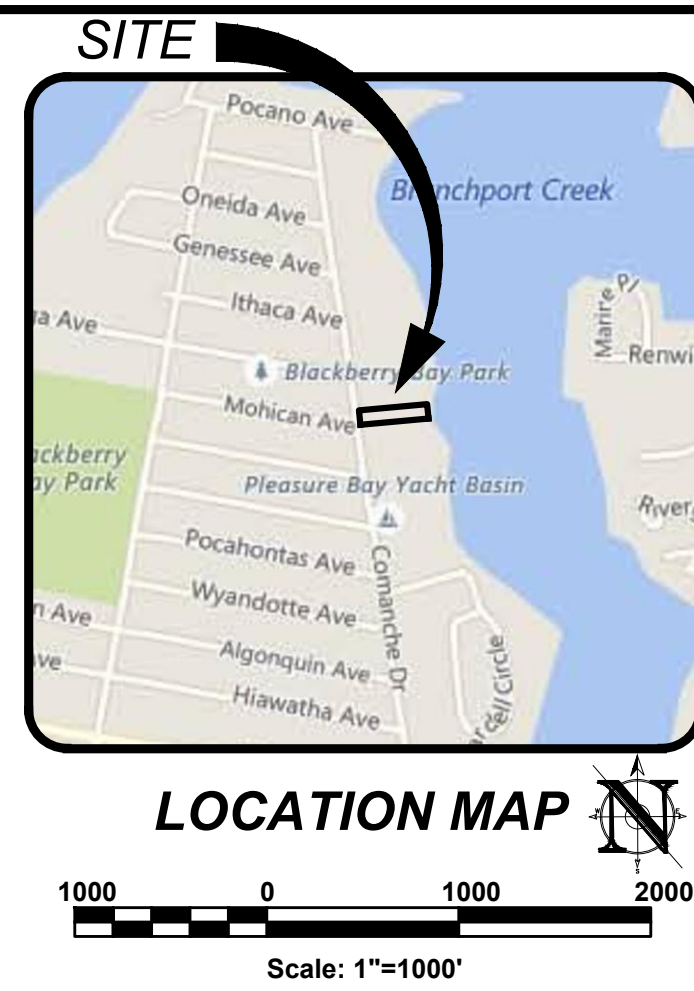
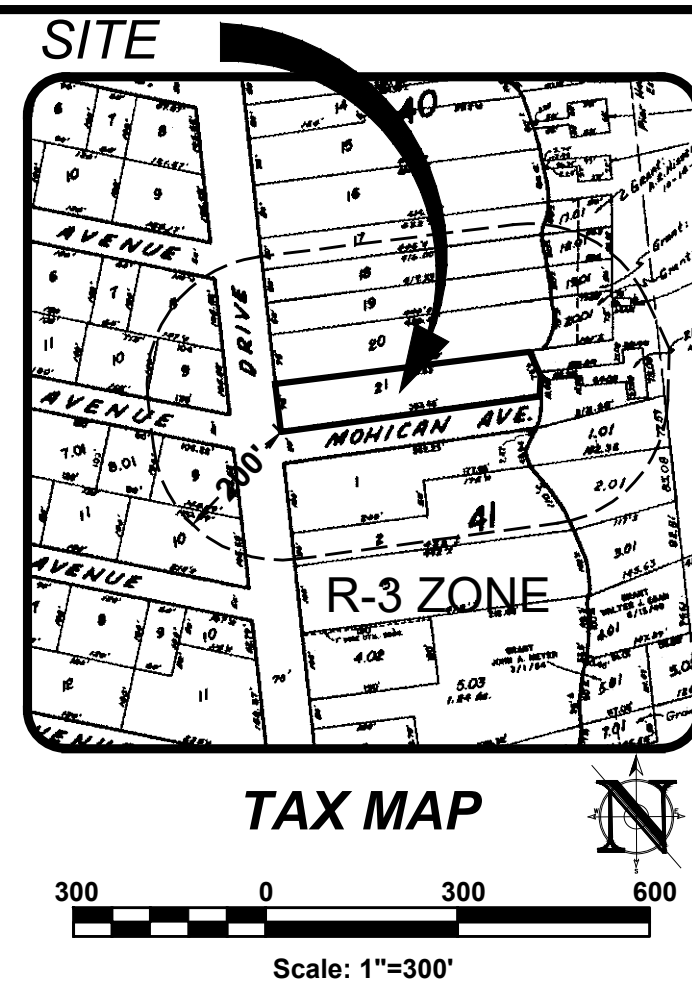
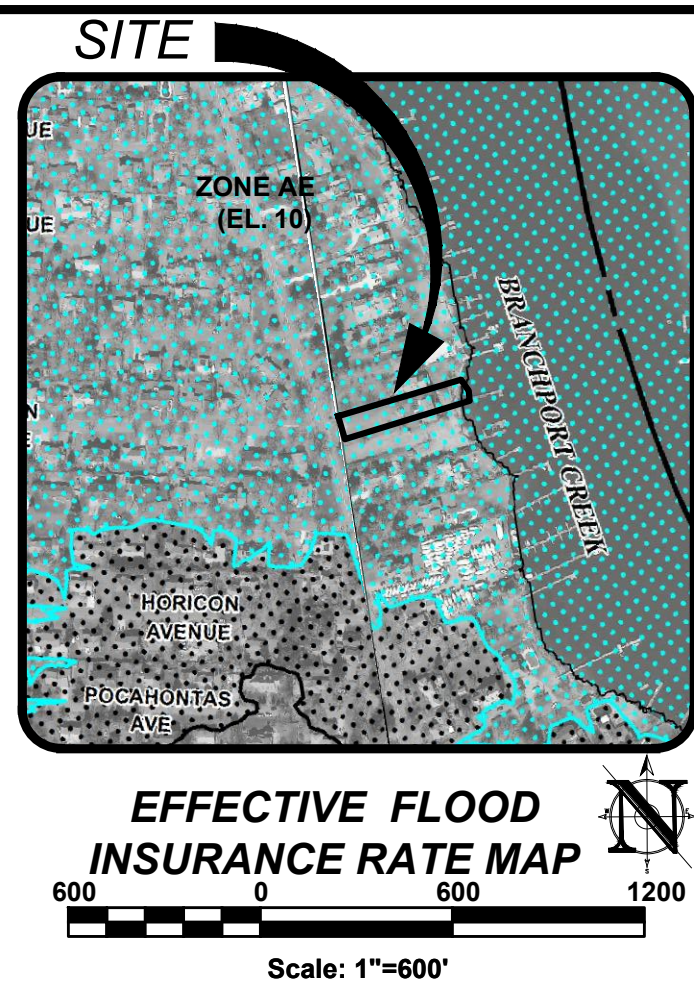
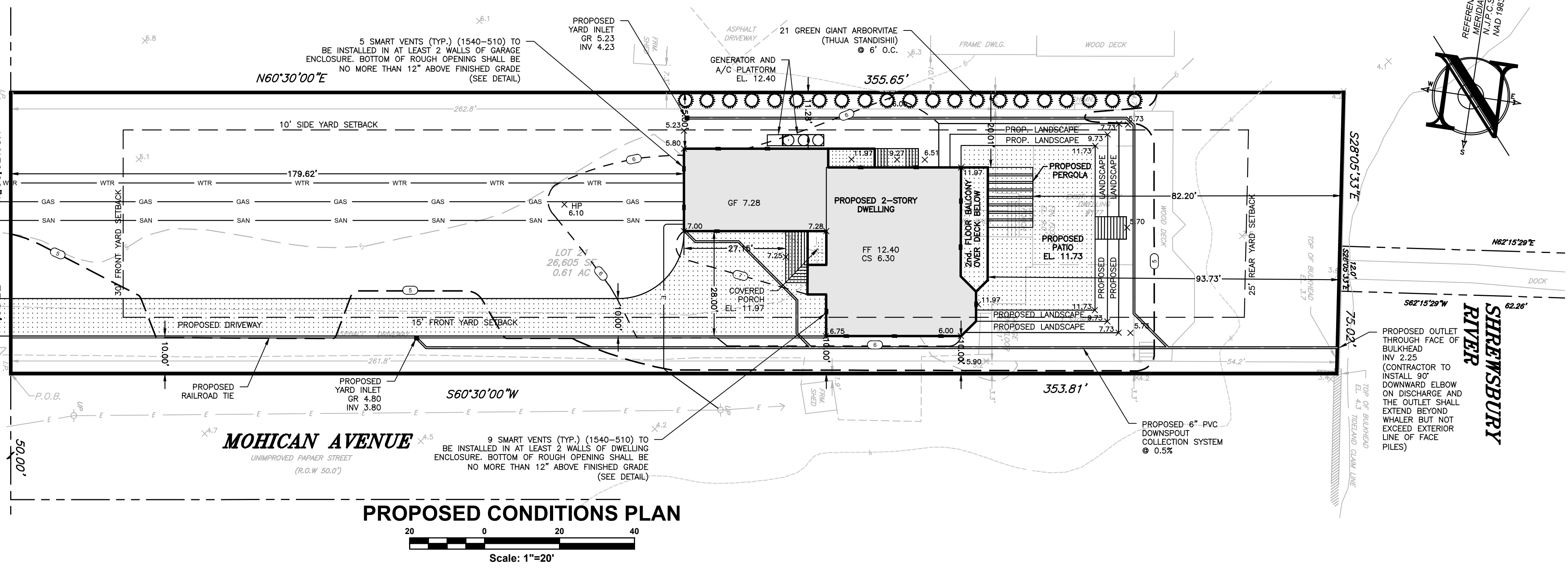
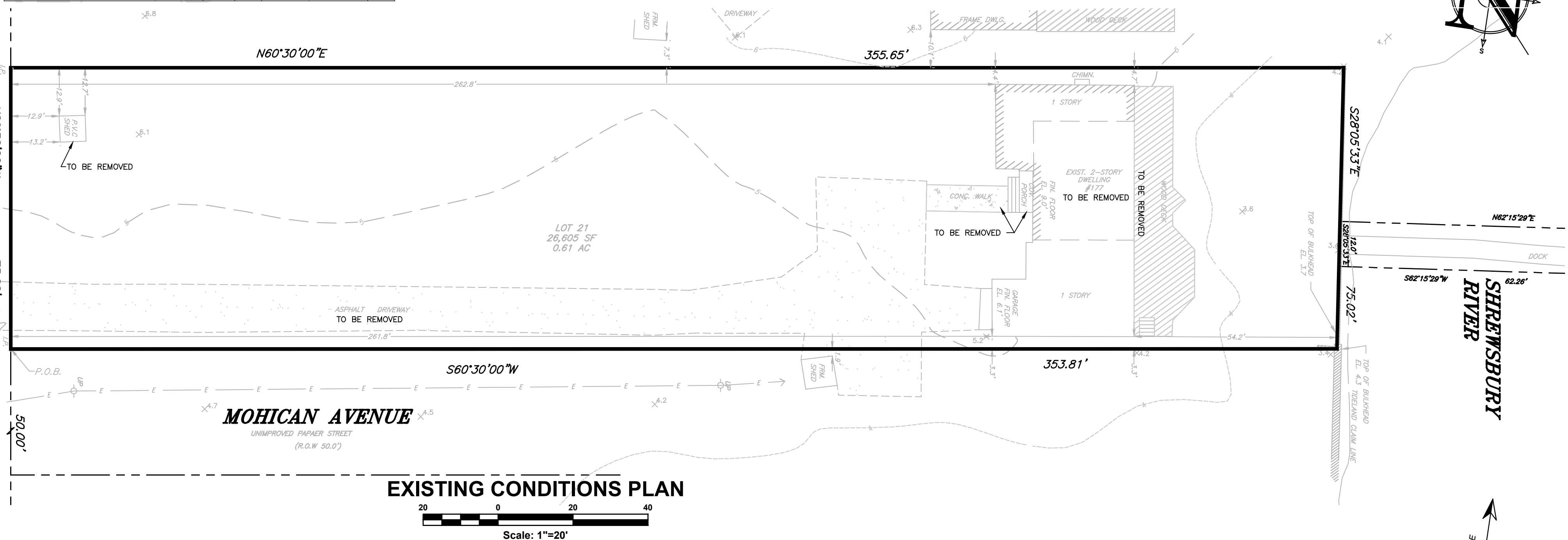
(N) EXISTING NON-CONFORMITY (I) IMPROVED CONDITION N/A - NOT APPLICABLE
 (E) EXISTING VARIANCE (X) VARIANCE / NON-CONFORMITY ELIMINATED N/S - NOT SPECIFIED
 (V) PROPOSED VARIANCE (W) PROPOSED WAIVER
 (a) THIS PERTAINS TO AN EXISTING STRUCTURE WHICH WAS NOT MADE AVAILABLE TO THIS OFFICE
 (1) IN RESIDENCE DISTRICTS, NO PRINCIPAL BUILDING SHALL BE NEARER TO THE STREET LINE OF ANY STREET THAN THE AVERAGE ALIGNMENT OF THE EXISTING PRINCIPAL BUILDINGS WITHIN 200 FEET OF EACH SIDE OF THE LOT WITHIN THE SAME BLOCK.
 (2) PER §390-14 D, NO PRINCIPAL BUILDING SHALL BE NEARER TO NATURAL WATERLINE THAN THE AVG. ALIGNMENT OF EXIST. BUILDINGS WITHIN 200' OF EACH SIDE OF THE LOT WITHIN THE SAME BLOCK.
 (3) LANDSCAPE TERRACES MAY BE UTILIZED AS LONG AS THEY ARE SET BACK A MINIMUM OF 10 FEET FROM ANY PROPERTY LINE

GENERAL NOTES

- SUBJECT PROPERTY**
TAX MAP #11, BLOCK 40, LOTS 21 & 21.01, 177 COMANCHE DRIVE, BOROUGH OF OCEANPORT, MONMOUTH COUNTY, NEW JERSEY 07757
- OWNER / APPLICANT**
JAKE M. BEIM
177 COMANCHE DRIVE
OCEANPORT, NJ 07757
- PURPOSE OF THIS PLAN SET**
THIS PLAN SET HAS BEEN PREPARED TO SUPPORT AN APPLICATION TO THE TOWNSHIP (FOR ENGINEERING AND ZONING APPROVAL) AND TO SUPPORT AN APPLICATION TO FREEHOLD SOIL CONSERVATION DISTRICT (FOR PLAN CERTIFICATION).
- SURVEY DATA**
SURVEY INFORMATION CONTAINED HEREON IS BASED ON A FIELD SURVEY PERFORMED BY RICHLAN, LUPO & ASSOCIATES, INC. ENTITLED "BOUNDARY & TOPOGRAPHIC SURVEY MAP OF TAX MAP LOTS 21 & 21.01 IN BLOCK 40", WITH THE LATEST REVISION BEING DATED 6/29/2019. A SIGNED AND SEALED COPY OF THIS SURVEY SHALL ALWAYS ACCOMPANY THIS SITE PLAN AS AN INDEPENDENT SHEET. TOPOGRAPHIC INFORMATION ON THE SURVEY REFERENCES THE NAVD83 VERTICAL DATUM.
- ARCHITECTURAL INFORMATION**
ARCHITECTURAL INFORMATION CONTAINED HEREON IS BASED ON PLANS PREPARED BY ANTHONY M. CONDOURIS, ARCHITECT, INC. ENTITLED "PROPOSED NEW CONSTRUCTION FOR THE BEIM RESIDENCE".
- BASE FLOOD ELEVATION**
ACCORDING TO FEMA'S EFFECTIVE FIRM ENTITLED "FIRM - FLOOD INSURANCE RATE MAP (FIRM), MONMOUTH COUNTY, NEW JERSEY (ALL JURISDICTIONS)," COMMUNITY PANEL #34025C0184G & 34025C0203G, DATED 6/20/18, THE SITE IS LOCATED IN ZONE AE, WITH A BASE FLOOD ELEVATION OF 10.0.
- CONSTRUCTION STAKEOUT**
SPECIAL CARE SHALL BE TAKEN DURING STAKEOUT AND CONSTRUCTION TO ADHERE TO THE LOCATION OF THE PROPOSED STRUCTURE AND SITE IMPROVEMENTS. THE BUILDING TIES ARE TO THE FOUNDATION.
- UNDERGROUND UTILITIES NOTIFICATION**
FOR ANY EXCAVATION IN NEW JERSEY, THE CONTRACTOR SHALL CALL PLANT LOCATION SERVICE AT 1-800-272-1000 FOR A MARKOUT REQUEST NO LESS THAN THREE (3) WORKING DAYS PRIOR TO STARTING ANY EXCAVATION.
- VERIFICATION OF UTILITIES**
EXISTING UTILITIES SHOWN ON THIS SITE PLAN ARE APPROXIMATE PER THE REFERENCED SURVEY. THE CONTRACTOR SHALL PERFORM SAMPLE TEST PITS TO DETERMINE EXACT LOCATIONS.
- SPECIFICATIONS**
UNLESS OTHERWISE NOTED HEREON, ALL SITE WORK SHALL BE CARRIED OUT IN CONFORMANCE WITH THE PROVISIONS OF THE "NEW JERSEY DEPARTMENT OF TRANSPORTATION (NJDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", LATEST EDITION.
- LIMIT OF DISTURBANCE**
PRIOR TO THE START OF SITE WORK, THE LIMIT OF DISTURBANCE SHALL BE DELINEATED WITH SNOW FENCING OR OTHER APPROPRIATE MARKERS.
- RESTORATION**
ALL AREAS DISTURBED DURING THE COURSE OF CONSTRUCTION SHALL BE RESTORED "IN-KIND" AS NEARLY AS PRACTICAL TO THEIR ORIGINAL STATE. AREAS WHERE SOIL IS LEFT EXPOSED SHALL BE GRADED, RAKED SMOOTH AND SEEDED IMMEDIATELY UPON COMPLETION OF SOIL DISTURBANCE.
- NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION (NJDEP)**
THE PROPOSED RESIDENCE QUALIFIES FOR A CAFRA GENERAL PERMIT BY-RULE 1, IN ACCORDANCE WITH N.J.A.C. 7-7-4.1
- ALL FINISHED FLOORS TO BE 1 FOOT ABOVE FLOOD HAZARD ELEVATION PER NJDEP. ALL FINISHED FLOORS TO BE 2 FEET ABOVE FLOOD HAZARD ELEVATION PER OCEANPORT. ANY MATERIAL BELOW ELEVATION 12.40 SHALL BE FLOOD RESISTANT.
FLOOD HAZARD ELEVATION = 10.0 (FEMA)
MINIMUM BUILDING FINISH FLOOR = 12.40
- ALL RUNOFF SHALL BE DIRECTED TO EITHER THE COMANCHE DRIVE ROW OR SHREWSBURY RIVER.



AVERAGE FRONT SETBACKS						
BLOCK	LOT	ADDRESS	FACING COMANCHE DRIVE	FACING SHREWSBURY RIVER TO M/H-W/L		
24	9	134 COMANCHE DRIVE	16.5	23.9	17.4	N/A
24	10	170 COMANCHE DRIVE	31.6	N/A	35.1	N/A
26	8	180 COMANCHE DRIVE	28.5	36.4	31.2	N/A
26	9	184 COMANCHE DRIVE	24.8	37.2	38.8	N/A
40	17	189 COMANCHE DRIVE	232.9	242.6	245.5	116.0
40	18	187 COMANCHE DRIVE	237.5	N/A	N/A	113.3
40	19	185 COMANCHE DRIVE	230.5	N/A	N/A	123.7
40	20	183 COMANCHE DRIVE	211.7	N/A	N/A	55.1
40	21	177 COMANCHE DRIVE	N/A	N/A	N/A	N/A
41	1	175 COMANCHE DRIVE	27.9	59.6	45.8	214.1
41	2	169 COMANCHE DRIVE	265.9	257.2	257.2	51.3
		AVERAGE	129.7	110.3	95.9	112.2



PROJECT INFORMATION

PROJECT NAME:

BEIM RESIDENCE

PROJECT LOCATION:

BLOCK 40, LOT 21 & 21.01
177 COMANCHE DRIVE
BOROUGH OF OCEANPORT,
MONMOUTH COUNTY, NJ

OWNER:

JAKE M. BEIM
177 COMANCHE DRIVE
BOROUGH OF OCEANPORT, NJ 07757

APPLICANT:

JAKE M. BEIM
177 COMANCHE DRIVE
BOROUGH OF OCEANPORT, NJ 07757

APPLICANT'S PROFESSIONALS

ATTORNEY:
THOMAS J. HIRSCH, ESQ.
3359 ROUTE 138, BUILDING 1, SUITE 214
WALL, NJ 07719

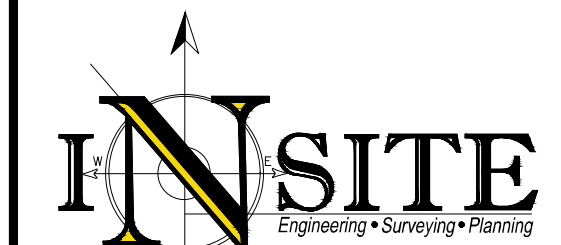
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TEMP SURVEY MARKINGS	MAGENTA
PROPOSED EXCAVATION	WHITE



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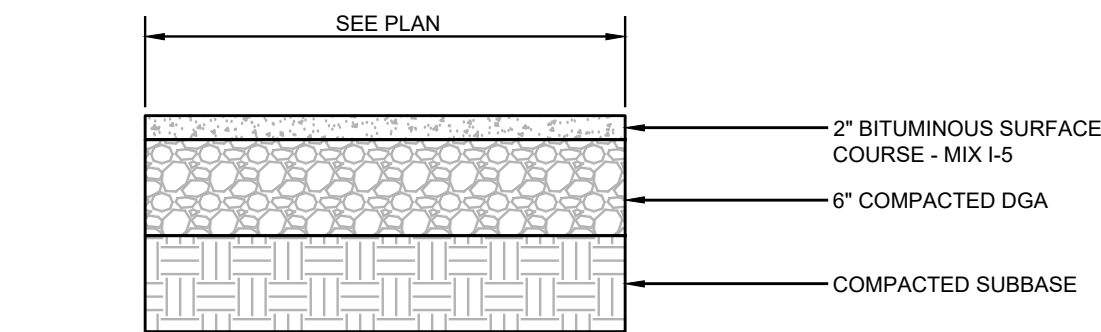
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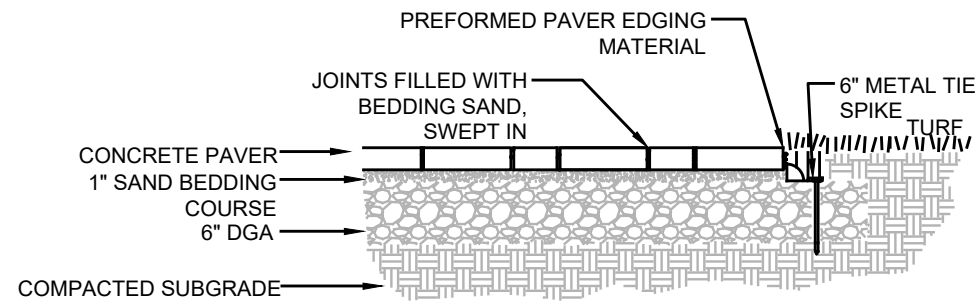
DRAWING TITLE: PLOT PLAN

SHEET TITLE: PLAN

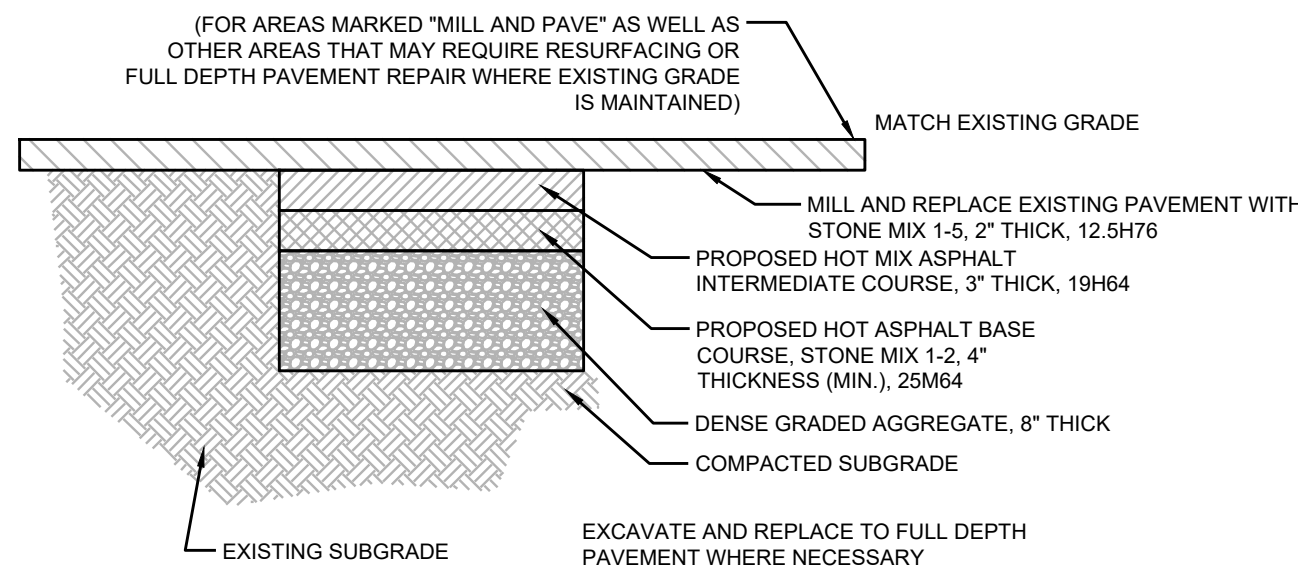
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DRIVEWAY PAVEMENT
NTS



CONCRETE PAVER DRIVEWAY
NTS

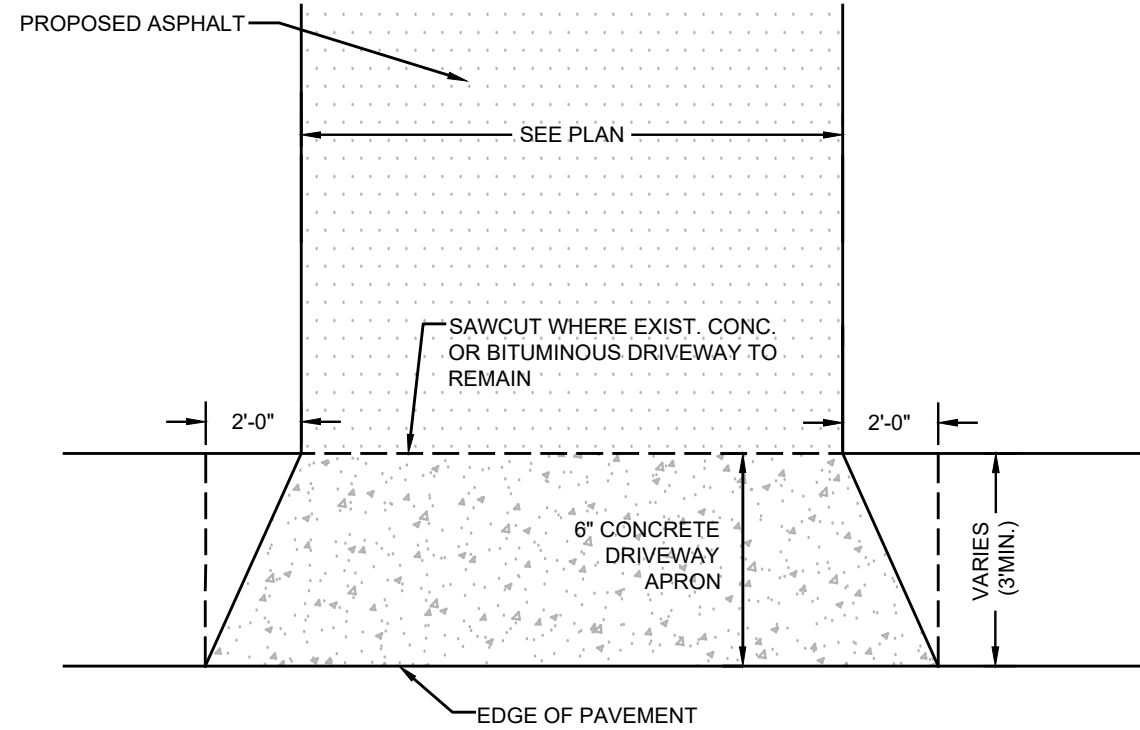


PAVEMENT CONSTRUCTION SEQUENCE:
1. MILL AND EXCAVATE WHERE NOTED ON PLAN.
2. PREPARE BASE WHERE NECESSARY.
3. INSTALL SURFACE COURSE OVER ENTIRE PAVED AREA AT ONE TIME.

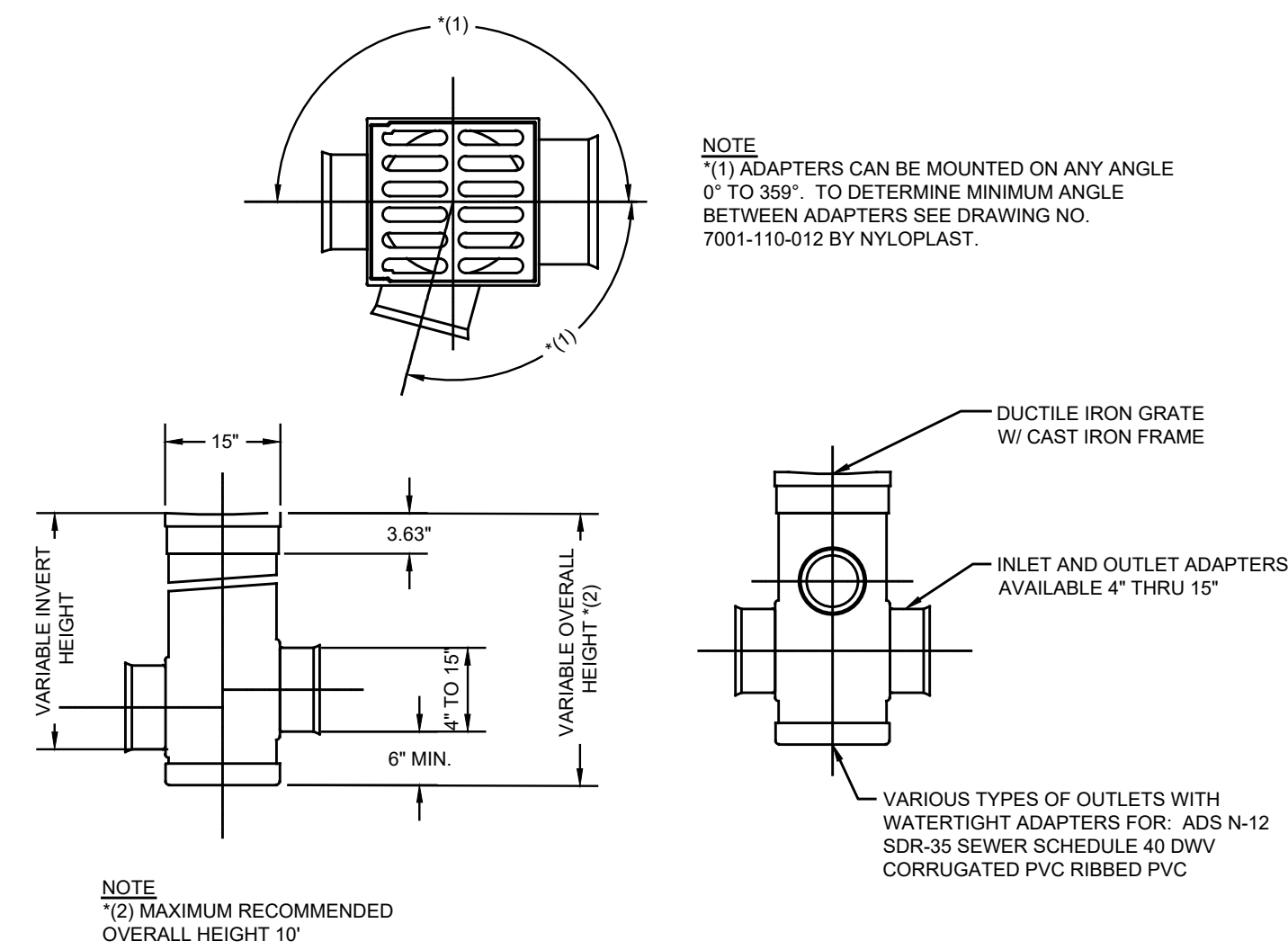
MATERIALS FOR ASPHALT SURFACE SHALL CONFORM TO SECTION 404.02 OF THE NJDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION). MATERIALS FOR ASPHALT BASE SHALL CONFORM TO SECTIONS 301.02 AND 304.02 OF THE NJDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION).

PAVEMENT REPAIR
NTS

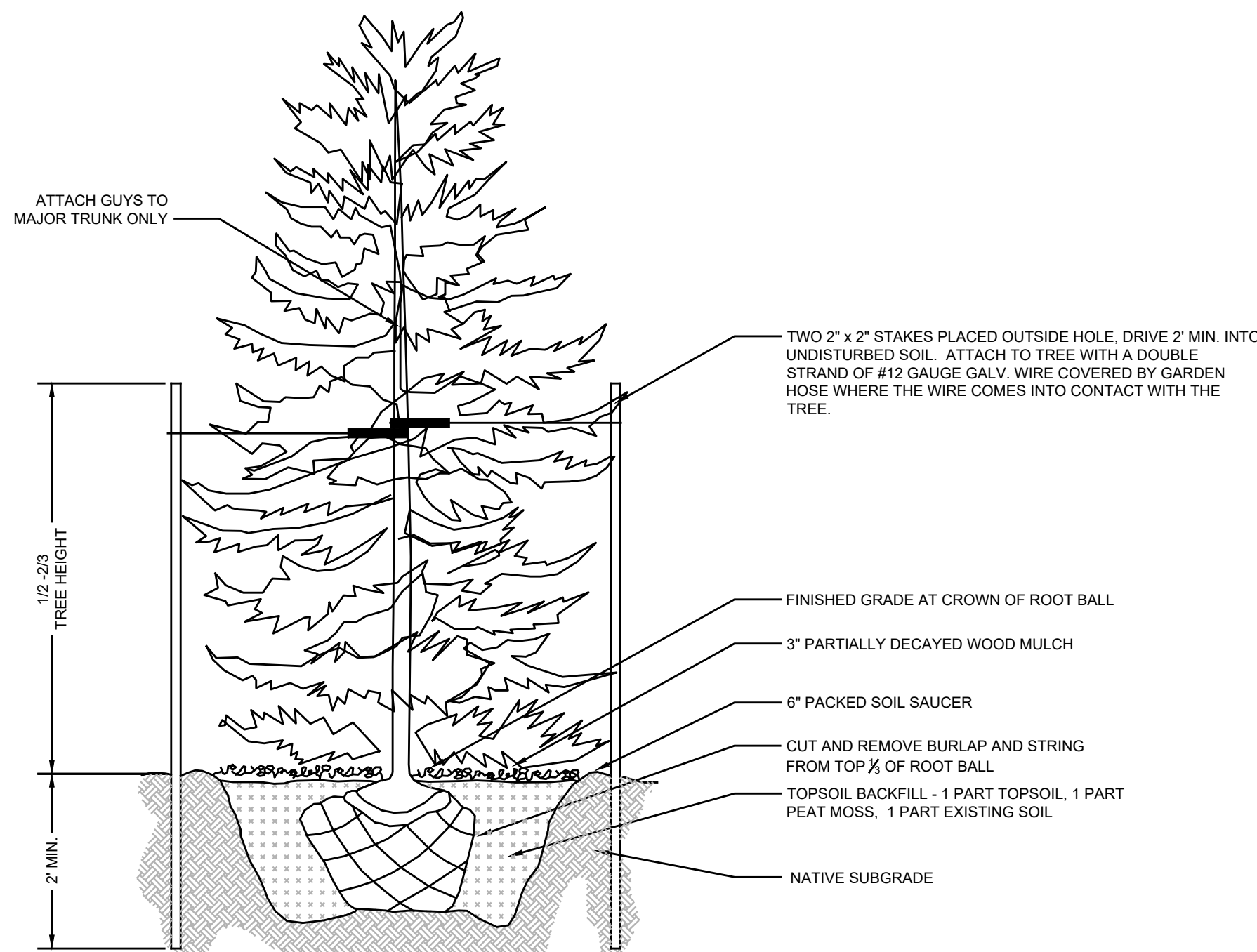
NOTES:
1. DRIVEWAY APRON CONCRETE TO BE NJDOT CLASS "B"
2. PROVIDE PREFORMED BITUMINOUS FIBER EXPANSION JOINTS 1/2" THICK AT 20'-0" (MAXIMUM) INTERVALS. PROVIDE DUMMY JOINTS AT INTERVALS EQUAL WIDTH BETWEEN EXPANSION JOINTS.
3. PROVIDE WELDED WIRE FABRIC REINFORCEMENT, TYPE 6X6-W2.9XW2.9 AT DRIVEWAY APRONS.



DRIVEWAY APRON
NTS

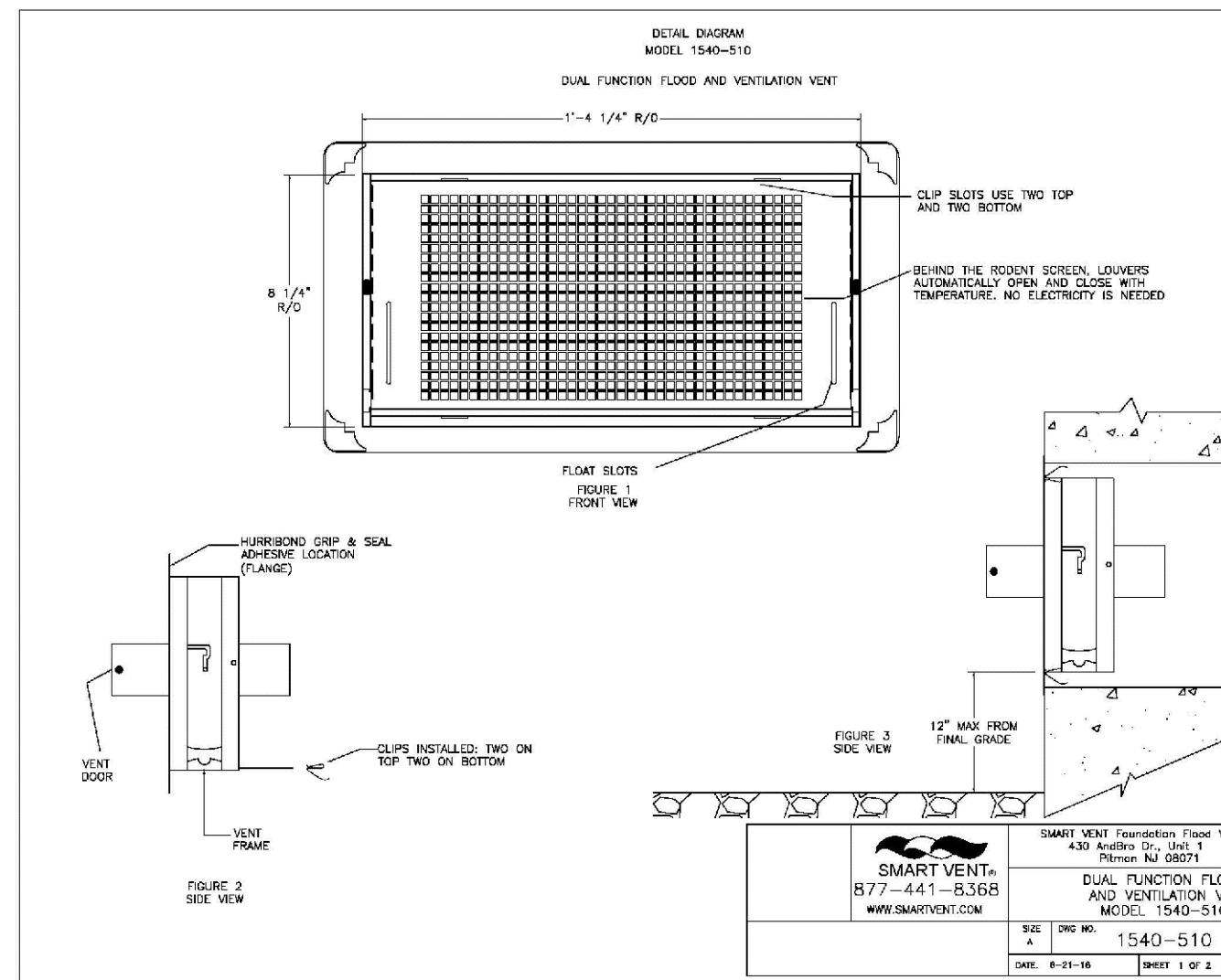


15" DRAIN BASIN BY NYLOPLAST
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NOTES:
1. DO NOT ALLOW AIR POCKETS TO FORM WHEN BACKFILLING.
2. DO NOT DISTURB ROOT BALL WHEN PLANTING OR STAKING.
3. WATER THOROUGHLY IMMEDIATELY FOLLOWING PLANTING.

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INSTALLATION INSTRUCTIONS

1. REMOVE VENT DOOR FROM VENT FRAME. TURN UPSIDE DOWN. ROTATE BOTTOM OF DOOR (TURNING AND SLIDE OUT)
2. PREPARE A 2-3/4" HOLE IN THE ROOF BY 2-3/4" HIGH ROUGH OPENING (APPROX. 1 BLOCK WIDE X 1 BLOCK HIGH). FOR EACH VENT. ENSURE THE BOTTOM OF THE ROUGH OPENING IS NO MORE THAN 12" ABOVE THE FINISHED GRADE.
3. APPLY A BEAD OF HERRINGBONE CRIP & SEAL OR EQUIVALENT ADHESIVE AROUND THE BACK OF THE FLANGE ON THE VENT FRAME. (SEE FIG. 2)
4. INSERT INSTALLATION CLIPS INTO THE TWO SLOTS ON THE TOP AND TWO SLOTS ON THE BOTTOM OF THE FRAME.
5. THE SPRING ARM OF THE CLIPS SHOULD BE ON THE OUTSIDE OF THE VENT FRAME. COMPRESS THE BOTTOM TWO CLIPS AND BEGIN SLIPPING THE FRAME INTO THE OPENING. ENSURE THAT THE BOTTOM CLIPS ARE IN THE OPENING BEFORE ALLOW THEM TO DECOMPRESS.
6. WITH THE FRAME TOP IN THE OPENING AND THE BOTTOM SPRINGS IN PLACE, COMPRESS THE TOP SPRINGS AND PUSH THE VENT FRAME INTO THE OPENING COMPLETELY UNTIL THE FRAME IS FLUSH WITH THE WALL.
7. RE-CHECK THAT FRAME IS SQUARE AND SLOTS ARE CLEAR OF DEBRIS, AND GASKET.
8. INSTALL THE DOOR INTO FRAME BY COMING THE BOTTOM OF DOOR (WITH FLOAT PINN DOWN) AND FRONT (SMALL SCREEN IN FRONT). SLIDE DOOR INTO FRAME AND REMOVE KEYS IF IS LATCHED.
9. TO OPEN THE DOOR INSERT TWO CREDIT CARDS INTO THE FLOAT SLOTS AS SHOWN IN THE DIAGRAM. THIS WILL UNLATCH THE DOOR FOR REMOVAL AND CLEANING.

GENERAL SPECIFICATIONS

MATERIAL: STAINLESS STEEL
OPERATION: FLOOD: AUTOMATIC; NON-IMPULSED ACTUATION AND OPERATION
DOOR REMAINS CLOSED AND LOCKED. UNITS ACTIVATED
OPERATION: AIR: AUTOMATIC; LOUVERS FULLY OPEN AT 75 DB. FULLY CLOSED AT 30 DB. NO POWER REQUIRED

INSTALLATION

1. VENT FRAME: SECURED BY 4 STAINLESS STEEL INSTALLATION CLIPS INCLUDED AND AN ADHESIVE
2. VENT FRAME: SECURED BY 4 STAINLESS STEEL INSTALLATION CLIPS INCLUDED AND AN ADHESIVE
3. VENT FRAME: SECURED BY 4 STAINLESS STEEL INSTALLATION CLIPS INCLUDED AND AN ADHESIVE
4. VENT FRAME: SECURED BY 4 STAINLESS STEEL INSTALLATION CLIPS INCLUDED AND AN ADHESIVE

MEETS THE REQUIREMENTS FOR ENGINEERED ORDINANCE AS SET FORTH BY:
SUPERVISORY DOCUMENTS: IS 1-106, AIRCRAFT NOISE, 2014, 2014
KID EVALUATION # 1004-2014

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BEIM
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PROJECT LOCATION:

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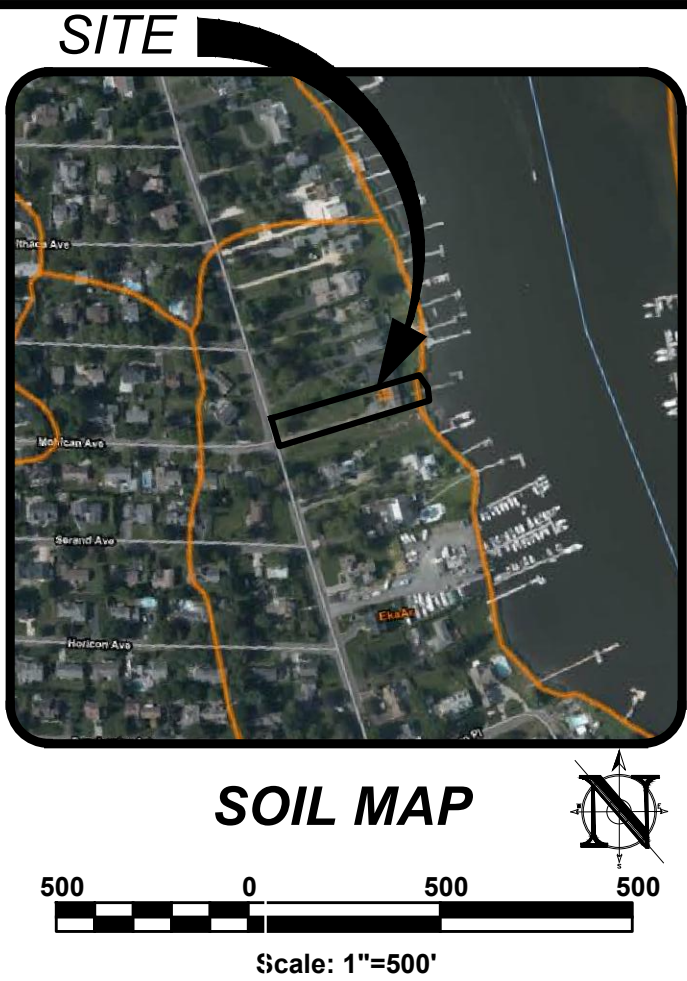
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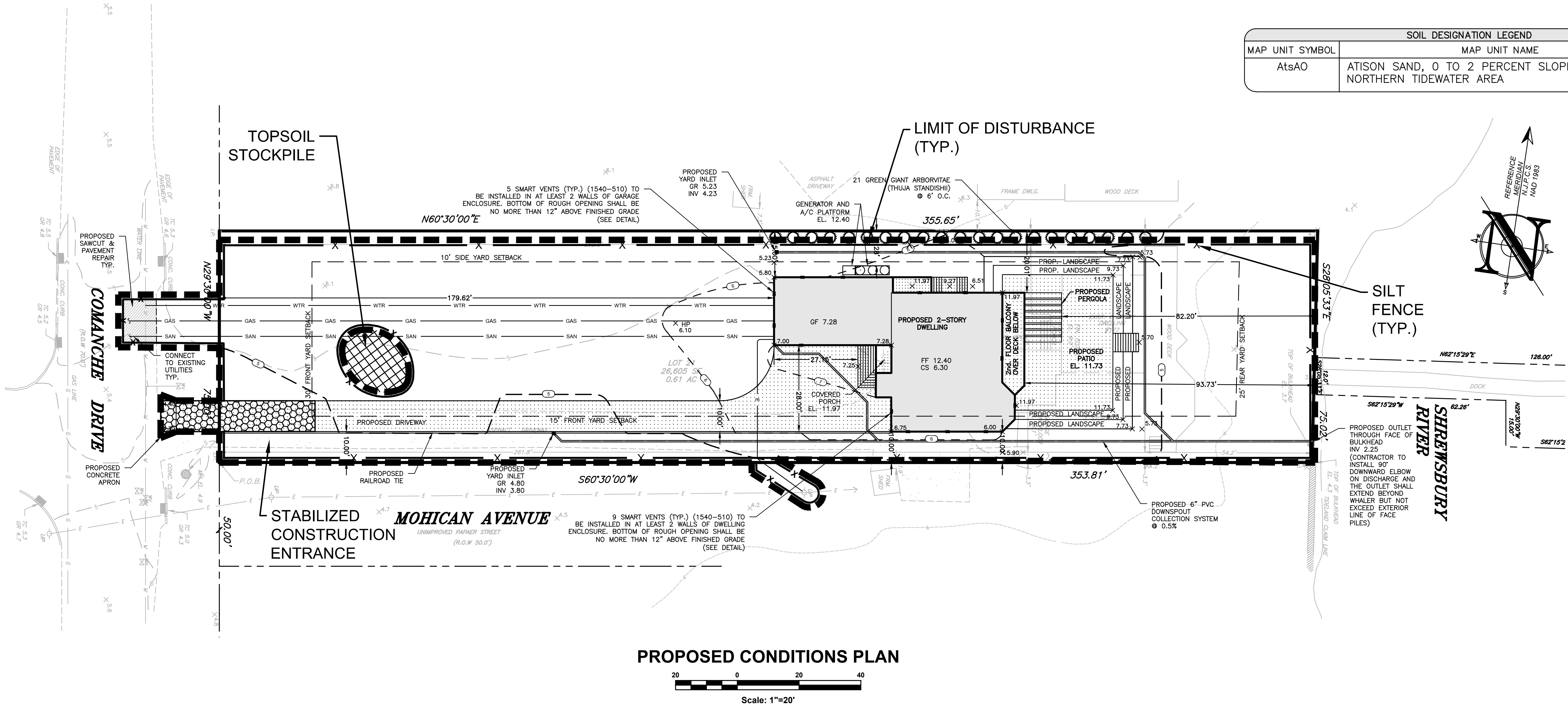
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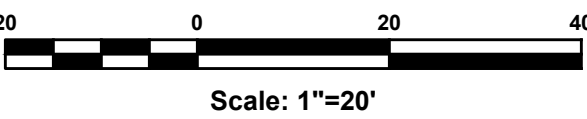
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2 OF 4



SOIL DESIGNATION LEGEND		
MAP UNIT SYMBOL	MAP UNIT NAME	RATING
AtsAO	ATISON SAND, 0 TO 2 PERCENT SLOPES, NORTHERN TIDEWATER AREA	A/D



PROPOSED CONDITIONS PLAN



Scale: 1"=20'

SOIL EROSION LEGEND

LIMIT OF DISTURBANCE	STABILIZED CONSTRUCTION ENTRANCE
SILT FENCE	RIP-RAP APRON, SCOUR HOLE
INLET PROTECTION	SOIL RESTORATION AREA
PROPOSED TREE PROTECTION	SOIL COMPACTION TEST LOCATION

CONSTRUCTION NOTE

THIS PLAN WAS PREPARED TO ADDRESS NJ SOIL EROSION AND SEDIMENT CONTROL REQUIREMENTS

PLEASE NOTE - THIS PLAN IS NOT TO BE USED FOR SITE CONSTRUCTION.

TOTAL LIMIT OF DISTURBANCE = 0.63 AC.

SOIL RESTORATION EXEMPTION

AS DETERMINED BY THE STATE POLICY MAP, THE PROJECT AREA FALLS WITHIN AN AREA OF "URBAN REDEVELOPMENT" AND IS CONSIDERED "PREVIOUSLY DEVELOPED" AS DEFINED BY THE NJDEP. IN ACCORDANCE WITH NEW JERSEY STANDARD FOR LAND REGRADING (REVISED 2017), THE SITE IS EXEMPT FROM SOIL RESTORATION REQUIREMENTS.

PROJECT INFORMATION

PROJECT NAME: BEIM RESIDENCE

PROJECT LOCATION: BLOCK 40, LOT 21 & 21.01, 177 COMANCHE DRIVE, BOROUGH OF OCEANPORT, MONMOUTH COUNTY, NJ

OWNER: JAKE M. BEIM, 177 COMANCHE DRIVE, BOROUGH OF OCEANPORT, NJ 07757

APPLICANT: JAKE M. BEIM, 177 COMANCHE DRIVE, BOROUGH OF OCEANPORT, NJ 07757

APPLICANT'S PROFESSIONALS:
ATTORNEY: THOMAS J. HIRSCH, ESQ., 3350 ROUTE 138, BUILDING 1, SUITE 214, WALL, NJ 07719
ARCHITECT: ANTHONY M. CONDOURIS, ARCHITECT, INC., 20 BINGHAM AVENUE, RUMSON, NJ 07760
SURVEYOR: RICHLAN LUPO & ASSOCIATES, INC., 2 INDUSTRIAL ROAD, SUITE 204, FAIRFIELD, NJ 07004

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PLAN INFORMATION

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PLOT PLAN

SHEET TITLE:

SESC PLAN

SHEET NO:

3 OF 4

SOIL EROSION AND SEDIMENT CONTROL NOTES

1. THE FREEHOLD SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY SOIL DISTURBING ACTIVITY.
2. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES ARE TO BE INSTALLED PRIOR TO SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
3. ANY CHANGES TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLANS WILL REQUIRE THE SUBMISSION OF REVISED SOIL EROSION AND SEDIMENT CONTROL PLANS TO THE DISTRICT FOR RE-CERTIFICATION. THE REVISED PLANS MUST MEET ALL CURRENT STATE SOIL EROSION AND SEDIMENT CONTROL STANDARDS.
4. N.J.S.A. 4:24-39 SET. SEC. 2 REQUIRES THAT NO CERTIFICATES OF OCCUPANCY BE ISSUED BEFORE THE DISTRICT DETERMINES THAT A PROJECT OR PORTION THEREOF IS IN FULL COMPLIANCE WITH THE CERTIFIED PLAN AND STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY. COMPLIANCE HAS BEEN ISSUED, UPON WRITTEN REQUEST FROM THE DISTRICT, THAT THE PROJECT OR PORTION THEREOF IS IN SATISFACTORY COMPLIANCE WITH THE SEQUENCE OF DEVELOPMENT AND TEMPORARY MEASURES FOR SOIL EROSION AND SEDIMENT CONTROL. IN ACCORDANCE WITH THE STANDARD FOR TOPSOILING FOR STABILIZATION AND SITE WORK.
5. ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN SIXTY (60) DAYS, AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING, IF THE SEASON PREVENTS THE ESTABLISHMENT OF TEMPORARY COVER. THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF 2 TO 2 1/2 TONS PER ACRE, ACCORDING TO STATE STANDARD FOR STABILIZATION WITH MULCH ONLY.
6. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION (I.E. STOCKPILES, STEEP SLOPES AND ROADWAY EMBANKMENTS) WILL RECEIVE TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AND A MULCH ANCHOR, IN ACCORDANCE WITH STATE STANDARDS.
7. A SUB-BASE COURSE WILL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING AND INSTALLATION OF IMPROVEMENTS TO STABILIZE STREETS, ROADS, DRIVEWAYS, AND PARKING AREAS. IN AREAS WHERE NO UTILITIES ARE PRESENT, THE SUB-BASE SHALL BE INSTALLED WITHIN FIFTEEN (15) DAYS OF THE PRELIMINARY GRADING.
8. THE STANDARD FOR STABILIZED CONSTRUCTION ACCESS REQUIRES THE INSTALLATION OF A PAD OF CLEAN CRUSHED STONE AT POINTS WHERE TRAFFIC WILL BE ACCESSING THE CONSTRUCTION SITE. AFTER INTERIOR ROADWAYS ARE PAVED, INDIVIDUAL LOTS REQUIRE A STABILIZED CONSTRUCTION ENTRANCE CONSISTING OF ONE INCH TO TWO INCH (1" - 2") STONE FOR A MINIMUM LENGTH OF TEN FEET (10') EQUAL TO THE LOT ENTRANCE WIDTH. ALL OTHER ACCESS POINTS SHALL BE BLOCKED OFF.
9. ALL SOIL WASHED, DROPPED, SPILLED, OR TRACKED OUTSIDE THE LIMIT OF DISTURBANCE OR ONTO PUBLIC RIGHT-OF-WAYS WILL BE REMOVED IMMEDIATELY.
10. PERMANENT VEGETATION IS TO BE SEEDING OR SODDED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING.
11. AT THE TIME THAT SITE PREPARATION FOR PERMANENT VEGETATION IS GOING TO BE ACCOMPLISHED, ANY SOIL THAT WILL NOT PROVIDE A SUITABLE ENVIRONMENT TO SUPPORT ADEQUATE VEGETATIVE GROWTH SHALL BE REMOVED OR TREATED IN SUCH A WAY THAT IT WILL ADJUST THE SOIL CONDITIONS AND REVERT TO A SUITABLE ENVIRONMENT FOR PERMANENT VEGETATION COVER. IF THE REMOVAL OR TREATMENT OF THE SOIL WILL NOT PROVIDE SUITABLE CONDITIONS, NON-VEGETATIVE MEANS OF PERMANENT GROUND STABILIZATION WILL HAVE TO BE EMPLOYED.
12. IN ACCORDANCE WITH THE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS, ANY SOIL HAVING A PH OF 4.0 OR LESS OR CONTAINING IRON SULFIDES SHALL BE ULTIMATELY PLACED OR BURIED WITH LIMESTONE APPLIED AT THE RATE OF 10 TONS/ACRE, (OR 450 LBS/1,000 SQ FT OF SURFACE AREA) AND COVERED WITH A MINIMUM OF 12" OF SETTLED SOIL WITH A PH OF 5.0 OR MORE, OR 24" WHERE TREES OR SHRUBS ARE TO BE PLANTED.
13. CONDUIT OUTLET PROTECTION MUST BE INSTALLED AT ALL REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEM BECOMING OPERATIONAL.
14. UNFILTERED Dewatering IS NOT PERMITTED. NECESSARY PRECAUTIONS MUST BE TAKEN DURING ALL DEWATERING OPERATIONS TO MINIMIZE SEDIMENT TRANSFER. ANY DEWATERING METHODS USED MUST BE IN ACCORDANCE WITH THE STANDARD FOR DEWATERING. SHOULD THE CONTROL OF DUST AT THE SITE BE NECESSARY, THE SITE WILL BE SPRINKLED UNTIL THE SURFACE IS WET. TEMPORARY VEGETATIVE COVER SHALL BE ESTABLISHED OR MULCH SHALL BE APPLIED AS REQUIRED BY THE STANDARD FOR DUST CONTROL.
15. STOCKPILE AND STAGING LOCATIONS ESTABLISHED IN THE FIELD SHALL BE PLACED WITHIN THE LIMIT OF DISTURBANCE ACCORDING TO THE CERTIFIED PLAN. STAGING AND STOCKPILES NOT LOCATED WITHIN THE LIMIT OF DISTURBANCE WILL REQUIRE CERTIFICATION OF A REVISED SOIL EROSION AND SEDIMENT CONTROL PLAN. CERTIFICATION OF A NEW SOIL EROSION AND SEDIMENT CONTROL PLAN MAY BE REQUIRED FOR THESE ACTIVITIES IF AN AREA GREATER THAN 5,000 SQUARE FEET IS DISTURBED.
16. ALL SOIL STOCKPILES ARE TO BE TEMPORARILY STABILIZED IN ACCORDANCE WITH SOIL EROSION AND SEDIMENT CONTROL NOTE #6.
17. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR ANY EROSION OR SEDIMENTATION THAT MAY OCCUR BEFORE STORMWATER OUTFALLS OR OFFSITE AS A RESULT OF CONSTRUCTION OF THE PROJECT.

TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION**1. SITE PREPARATION**

- A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARDS FOR LAND GRADING, PG. 10.
- B. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS. SEE STANDARDS 11 THROUGH 42.

- C. IMMEDIATELY PRIOR TO SEEDING, THE SURFACE SHOULD BE SCARRIFIED 6" TO 12" WHERE THERE HAS BEEN SOIL COMPACTION. THIS PRACTICE IS PERMISSIBLE ONLY WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.).

2. SEEDBED PREPARATION

- A. APPLY GROUND LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICES. FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET OF 10-20-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE. LIMING RATES SHALL BE ESTABLISHED VIA SOIL TESTING. CALCIUM CARBONATE IS THE EQUIVALENT AND STANDARD FOR MEASURING THE ABILITY OF LIMING MATERIALS TO NEUTRALIZE SOIL ACIDITY AND SUPPLY CALCIUM AND MAGNESIUM TO GRASSES AND LEGUMES.
- B. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRINGTOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISKING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM SEEDBED IS PREPARED.
- C. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED IN ACCORDANCE WITH THE ABOVE.
- D. SOILS HIGH IN SULFIDES OR HAVING A PH OF 4.0 OR LESS REFER TO STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS, PG. 1-1.

3. SEEDING

- A. TEMPORARY VEGETATIVE SEEDING COVER SHALL CONSIST OF PERENNIAL RYEGRASS APPLIED UNIFORMLY AT A RATE OF 1 POUND PER 1,000 SF (100 LBS/AC) WITH AN OPTIMUM SEED DEPTH OF 0.5" (TWICE THE DEPTH IF SANDY SOILS), IN ACCORDANCE WITH TABLE 2-2, PAGE 7-3.
- *SEEDING DATES: 2/15-5/31 AND 9/15-10/15
- B. CONVENTIONAL SEEDING: APPLY SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULTIPACKER SEEDER. EXCEPT FOR DRILLED, HYDROSEEDED OR CULTIPACKED SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL, TO A DEPTH OF 1/4 TO 1/2 INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/4 INCH DEEPER ON COARSE TEXTURED SOIL.

- C. HYDROSEEDING IS A BROADCAST SEEDING METHOD USUALLY INVOLVING A TRUCK OR TRAILER MOUNTED TANK, WITH AN AGITATION SYSTEM AND HYDRAULIC PUMP FOR MIXING SEED, WATER AND FERTILIZER AND SPRAYING THE MIX ONTO THE PREPARED SEEDBED. MULCH SHALL NOT BE INCLUDED IN THE TANK WITH SEED. SHORT FIBERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. (ALSO SEE SECTION 4 MULCHING) HYDROSEEDING IS NOT A PREFERRED SEEDING METHOD BECAUSE SEED AND FERTILIZER ARE APPLIED TO THE SURFACE AND NOT INCORPORATED INTO THE SOIL. POOR SEED TO SOIL CONTACT OCCURS REDUCING SEED GERMINATION AND GROWTH. HYDROSEEDING MAY BE USED FOR AREAS TOO STEEP FOR CONVENTIONAL EQUIPMENT TO TRAVERSE OR TOO OBSTRUCTED WITH ROCKS, STUMPS, ETC.

- A. AFTER SEEDING, FIRING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED-TO-SOIL CONTACT, RESTORE CAPILLARITY, AND IMPROVE SEEDLING EMERGENCE. THIS IS THE PREFERRED METHOD. WHEN PERFORMED ON THE CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.

4. MULCHING

- A. MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL INSURE AGAINST EROSION BEFORE GRASS IS ESTABLISHED AND WILL PROMOTE FASTER AND EARLIER ESTABLISHMENT. THE EXISTENCE OF VEGETATION SUFFICIENT TO CONTROL SOIL EROSION SHALL BE DEEMED COMPLIANCE WITH THIS MULCHING REQUIREMENT.

- A. STRAW OR HAY, UNROTTED SMALL GRAIN STRAW, HAY FREE OF SEEDS, APPLIED AT THE RATE OF 1-1/2 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET), EXCEPT THAT WHERE A CRIMPER IS USED INSTEAD OF A LIQUID MULCH-BINDER (TACKIFYING OR ADHESIVE AGENT), THE RATE OF APPLICATION IS 3 TONS PER ACRE. MULCH CHOPPER-BLOWERS MUST NOT GRIND THE MULCH. HAY MULCH IS NOT RECOMMENDED FOR ESTABLISHING FINE TURF OR LAWNS DUE TO THE PRESENCE OF WEED SEED.

- A. APPLICATION: SPREAD MULCH UNIFORMLY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 95% OF THE SOIL SURFACE WILL BE COVERED. FOR UNIFORM DISTRIBUTION OF HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQUARE FEET SECTIONS AND DISTRIBUTE 70 TO 90 POUNDS WITHIN EACH SECTION.

- A. ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS.

1. PEG AND TWINE: DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRIS-CROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.
2. MULCH NETTINGS: STAPLE PAPER, JUTE, COTTON, OR PLASTIC NETTINGS TO THE SOIL SURFACE. USE A DEGRADABLE NETTING IN AREAS TO BE MOWED.
3. CRIMPER (MULCH ANCHORING TOOL): A TRACTOR-DRAWN IMPLEMENT, SOMEWHAT LIKE A DISC HARROW, ESPECIALLY DESIGNED TO PUSH OR CUT SOME OF THE BROADCAST LONG FIBER MULCH 3 TO 4 INCHES INTO THE SOIL, SO AS TO ANCHOR IT AND LEAVE PART STANDING UPRIGHT. THIS TECHNIQUE IS LIMITED TO AREAS TRAVERSABLE BY A TRACTOR, WHICH MUST OPERATE ON THE CONTOUR OF SLOPES. STRAW MULCH RATE MUST BE 3 TONS PER ACRE, NO TACKIFYING OR ADHESIVE AGENT IS REQUIRED.
4. LIQUID MULCH-BINDERS - MAY BE USED TO ANCHOR HAY OR STRAW MULCH.

- a. APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND MAY CATCH THE MULCH, IN VALLEYS, AND AT CRESTS OF BANKS. THE REMAINDER OF THE AREA SHOULD BE UNIFORM IN APPEARANCE.
- b. USE ONE OF THE FOLLOWING:
 - (1) ORGANIC AND VEGETABLE BASED BINDERS - NATURALLY OCCURRING, POWDER BASED, HYDROPHILIC MATERIALS WHEN MIXED WITH WATER FORMULATES A GEL AND WHEN APPLIED TO MULCH UNDER SATISFACTORY CURING CONDITIONS WILL FORM MEMBRANED NETWORKS OF INSOLUBLE POLYMERS. THE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHYTOXIC EFFECT OR IMPEDING GROWTH OF TURFGRASSES. USE AT RATES AND WEATHER CONDITIONS AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH MATERIALS. MANY NEW PRODUCTS ARE AVAILABLE, SOME OF WHICH MAY NEED FURTHER EVALUATION FOR USE IN THIS STATE.
 - (2) SYNTHETIC BINDERS - HIGH POLYMER SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED AND FOLLOWING APPLICATION TO MULCH, DRYING AND CURING SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. IT SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURER AND REMAIN TACKY UNTIL GERMINATION OF GRASS.

- B. WOOD-FIBER OR PAPER-FIBER MULCH - SHALL BE MADE FROM WOOD, PLANT FIBERS OR PAPER CONTAINING NO GROWTH OR GERMINATION INHIBITING MATERIALS. USED AT THE RATE OF 1,500 POUNDS PER ACRE (OR AS RECOMMENDED BY THE PRODUCT MANUFACTURER) AND MAY BE APPLIED BY A HYDROSEEDER. THIS MULCH SHALL NOT BE MIXED IN THE TANK WITH SEED. USE IS LIMITED TO FLATTER SLOPES AND DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.

- C. PELLETIZED MULCH, COMPRESSED AND EXTRUDED PAPER AND/OR WOOD FIBER PRODUCT, WHICH MAY CONTAIN CO-POLYMERS, TACKIFIERS, FERTILIZERS AND COLORING AGENTS. THE DRY PELLETS, WHEN APPLIED TO A SEEDBED AREA AND WATERED, FORM A MULCH MAT. PELLETIZED MULCH SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MULCH MAY BE APPLIED BY HAND OR MECHANICAL SPREADER AT THE RATE OF 60-75 LBS/1,000 SQUARE FEET AND ACTIVATED WITH 0.2 TO 0.4 INCHES OF WATER. THIS MATERIAL HAS BEEN FOUND TO BE BENEFICIAL FOR USE ON SMALL LAWN OR RENOVATION AREAS, SEEDBED AREAS WHERE WEED-SEED FREE MULCH IS DESIRED OR ON SITES WHERE STRAW MULCH AND TACKIFIER AGENT ARE NOT PRACTICAL OR DESIRABLE.

- A. APPLYING THE FULL 0.2 TO 0.4 INCHES OF WATER AFTER SPREADING PELLETIZED MULCH ON THE SEED BED IS EXTREMELY IMPORTANT FOR SUFFICIENT ACTIVATION AND EXPANSION OF THE MULCH TO PROVIDE SOIL COVERAGE.

PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION**1. SITE PREPARATION**

- A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARD FOR LAND GRADING.

- B. IMMEDIATELY PRIOR TO SEEDING AND TOPSOIL APPLICATION, THE SUBSOIL SHALL BE EVALUATED FOR COMPACTION IN ACCORDANCE WITH THE STANDARD FOR LAND GRADING.

- C. TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING THE SOIL STRUCTURE. A UNIFORM APPLICATION TO A DEPTH OF 5 INCHES (UNSETTLED) IS REQUIRED ON ALL SITES. TOPSOIL SHALL BE AMENDED WITH ORGANIC MATTER, AS NEEDED, IN ACCORDANCE WITH THE STANDARD FOR TOPSOILING.

- D. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE-STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS.

2. SEEDBED PREPARATION

- A. UNIFORMLY APPLY GROUND LIMESTONE AND FERTILIZER TO TOPSOIL WHICH HAS BEEN SPREAD AND FIRMED, ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICES (HTTP://NAJES.RUTGERS.EDU/COUNTY/). FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET OF 10-10-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE AND INCORPORATED INTO THE SURFACE 4 INCHES. FERTILIZER IS NOT INCORPORATED. APPLY ONE-HALF THE RATE DESCRIBED ABOVE DURING SEEDBED PREPARATION AND REPEAT ANOTHER ONE-HALF RATE APPLICATION OF THE SAME FERTILIZER WITHIN 3 TO 5 WEEKS AFTER SEEDING.

- B. WORK LIME AND FERTILIZER INTO THE TOPSOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING-TOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISKING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM SEEDBED IS PREPARED.

- C. HIGH ACID PRODUCING SOILS HAVING A PH OF 4.0 OR LESS OR CONTAINING IRON SULFIDE SHALL BE COVERED WITH A MINIMUM OF 12 INCHES OF SOIL, HAVING A PH OF 5.0 OR MORE, BEFORE SEEDBED PREPARATION. SEE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS FOR SPECIFIC REQUIREMENTS.

- A. SEED GERMINATION SHALL HAVE BEEN TESTED WITHIN 12 MONTHS OF THE PLANTING DATE. NO SEED SHALL BE ACCEPTED WITH A GERMINATION TEST DATE MORE THAN 12 MONTHS OLD UNLESS RE-TESTED.

SEED MIXTURE

SEED MIXTURE	PLANTING RATE LBS/1,000 (LBS/ACRE)
HARD FESCUE AND/OR STRONG CREEPING RED FESCUE	4 (175)
PERENNIAL RYEGRASS	1 (45)
KENTUCKY BLUEGRASS	1 (45)

ACCEPTABLE SEEDING DATES: 2/1-4/30 AND 9/1-11/4

*OPTIMAL SEEDING DATES: 8/15-10/30

*SUMMER SEEDING SHALL ONLY BE CONDUCTED WHEN SITE IS IRRIGATED

1. SEEDING RATES SPECIFIED ARE REQUIRED WHEN A REPORT OF COMPLIANCE IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OF PERMANENT VEGETATION. UP TO 50% REDUCTION IN RATES MAY BE USED WHEN PERMANENT VEGETATION IS ESTABLISHED PRIOR TO A REPORT OF COMPLIANCE INSPECTION. THESE RATES APPLY TO ALL METHODS OF SEEDING. ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATIVE COVERAGE WITH THE SPECIFIED SEED MIXTURE FOR THE SEEDBED AREA AND MOWED ONCE.
2. WARM-SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT HIGH TEMPERATURES. GENERALLY 85°F AND ABOVE. SEE TABLE 4-3 MIXTURES 1 TO 7. PLANTING RATES FOR WARM-SEASON GRASSES SHALL BE THE AMOUNT OF PURE LIVE SEED (PLS) AS DETERMINED BY GERMINATION TESTING RESULTS.
3. COOL-SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT TEMPERATURES BELOW 85°F. MANY GRASSES BECOME ACTIVE AT 60°F. SEE TABLE 4-3 MIXTURES 8-20. ADJUSTMENT OF PLANTING RATES TO COMPENSATE FOR THE EFFECT OF PLS IS NOT REQUIRED FOR COOL SEASON GRASSES.

- B. CONVENTIONAL SEEDING IS PERFORMED BY APPLYING SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULTIPACKER SEEDER. EXCEPT FOR DRILLED, HYDROSEEDED OR CULTIPACKED SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL WITHIN 24 HOURS OF SEEDBED PREPARATION TO A DEPTH OF 1/4 TO 1/2 INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/4 INCH DEEPER ON COARSE-TEXTURED SOIL.

- C. AFTER SEEDING, FIRING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED-TO-SOIL CONTACT, RESTORE CAPILLARITY, AND IMPROVE SEEDLING EMERGENCE. THIS IS THE PREFERRED METHOD. WHEN PERFORMED ON THE CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.

- D. HYDROSEEDING IS A BROADCAST SEEDING METHOD USUALLY INVOLVING A TRUCK OR TRAILER-MOUNTED TANK, WITH AN AGITATION SYSTEM AND HYDRAULIC PUMP FOR MIXING SEED, WATER AND FERTILIZER AND SPRAYING THE MIX ONTO THE PREPARED SEEDBED. MULCH SHALL NOT BE INCLUDED IN THE TANK WITH SEED. SHORT FIBERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. (ALSO SEE SECTION 4 MULCHING BELOW). HYDROSEEDING IS NOT A PREFERRED SEEDING METHOD BECAUSE SEED AND FERTILIZER ARE APPLIED TO THE SURFACE AND NOT INCORPORATED INTO THE SOIL, WHEN POOR SEED TO SOIL CONTACT OCCURS, THERE IS A REDUCED SEED GERMINATION AND GROWTH.

- A. MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL PROTECT AGAINST EROSION BEFORE GRASS IS ESTABLISHED AND WILL PROMOTE FASTER AND EARLIER ESTABLISHMENT. THE EXISTENCE OF VEGETATION SUFFICIENT TO CONTROL SOIL EROSION SHALL BE DEEMED COMPLIANCE WITH THIS MULCHING REQUIREMENT.

- A. STRAW OR HAY, UNROTTED SMALL GRAIN STRAW, HAY FREE OF SEEDS, TO BE APPLIED AT THE RATE OF 1-1/2 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET), EXCEPT THAT WHERE A CRIMPER IS USED INSTEAD OF A LIQUID MULCH-BINDER (TACKIFYING OR ADHESIVE AGENT), THE RATE OF APPLICATION IS 3 TONS PER ACRE. MULCH CHOPPER-BLOWERS MUST NOT GRIND THE MULCH. HAY MULCH IS NOT RECOMMENDED FOR ESTABLISHING FINE TURF OR LAWNS DUE TO THE PRESENCE OF WEED SEED.

- A. APPLICATION - SPREAD MULCH UNIFORMLY BY HAND OR MECHANICALLY SO THAT AT LEAST 85% OF THE SOIL SURFACE IS COVERED. FOR UNIFORM DISTRIBUTION OF HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQUARE FEET SECTIONS AND DISTRIBUTE 70 TO 90 POUNDS WITHIN EACH SECTION.

- A. ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS.

1. PEG AND TWINE: DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRIS-CROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.
2. MULCH NETTINGS: STAPLE PAPER, JUTE, COTTON, OR PLASTIC NETTINGS TO THE SOIL SURFACE. USE A DEGRADABLE NETTING IN AREAS TO BE MOWED.
3. CRIMPER (MULCH ANCHORING COULTER TOOL): A TRACTOR-DRAWN IMPLEMENT, SOMEWHAT LIKE A DISC HARROW, ESPECIALLY DESIGNED TO PUSH OR CUT SOME OF THE BROADCAST LONG FIBER MULCH 3 TO 4 INCHES INTO THE SOIL, SO AS TO ANCHOR IT AND LEAVE PART STANDING UPRIGHT. THIS TECHNIQUE IS LIMITED TO AREAS TRAVERSABLE BY A TRACTOR, WHICH MUST OPERATE ON THE CONTOUR OF SLOPES. STRAW MULCH RATE MUST BE 3 TONS PER ACRE. NO TACKIFYING OR ADHESIVE AGENT IS REQUIRED.
4. LIQUID MULCH-BINDERS - MAY BE USED TO ANCHOR SALT HAY, HAY OR STRAW MULCH.

- a. APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND MAY CATCH THE MULCH, IN VALLEYS, AND AT CRESTS OF BANKS. THE REMAINDER OF THE AREA SHOULD BE UNIFORM IN APPEARANCE.
- b. USE ONE OF THE FOLLOWING:
 - (1) ORGANIC AND VEGETABLE BASED BINDERS - NATURALLY OCCURRING, POWDER-BASED, HYDROPHILIC MATERIALS WHEN MIXED WITH WATER FORMULATES A GEL AND WHEN APPLIED TO MULCH UNDER SATISFACTORY CURING CONDITIONS WILL FORM MEMBRANED NETWORKS OF INSOLUBLE POLYMERS. THE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHYTOXIC EFFECT OR IMPEDING GROWTH OF TURFGRASSES. USE AT RATES AND WEATHER CONDITIONS AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH MATERIALS. MANY NEW PRODUCTS ARE AVAILABLE, SOME OF WHICH MAY NEED FURTHER EVALUATION FOR USE IN THIS STATE.
 - (2) SYNTHETIC BINDERS - HIGH POLYMER SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED AND FOLLOWING APPLICATION TO MULCH, DRYING AND CURING SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. BINDER SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURER AND REMAIN TACKY UNTIL GERMINATION OF GRASS.

- B. WOOD-FIBER OR PAPER-FIBER MULCH - SHALL BE MADE FROM WOOD, PLANT FIBERS OR PAPER CONTAINING NO STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY JANUARY 2014 GROWTH OR GERMINATION INHIBITING MATERIALS. USED AT THE RATE OF 1,500 POUNDS PER ACRE (OR AS RECOMMENDED BY THE PRODUCT MANUFACTURER) AND MAY BE APPLIED BY A HYDROSEEDER. MULCH SHALL NOT BE MIXED IN THE TANK WITH SEED. USE IS LIMITED TO FLATTER SLOPES AND DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.

- C. PELLETIZED MULCH, COMPRESSED AND EXTRUDED PAPER AND/OR WOOD FIBER PRODUCT, WHICH MAY CONTAIN CO-POLYMERS, TACKIFIERS, FERTILIZERS AND COLORING AGENTS. THE DRY PELLETS, WHEN APPLIED TO A SEEDBED AREA AND WATERED, FORM A MULCH MAT. PELLETIZED MULCH SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MULCH MAY BE APPLIED BY HAND OR MECHANICAL SPREADER AT THE RATE OF 60-75 LBS/1,000 SQUARE FEET AND ACTIVATED WITH 0.2 TO 0.4 INCHES OF WATER. THIS MATERIAL HAS BEEN FOUND TO BE BENEFICIAL FOR USE ON SMALL LAWN OR RENOVATION AREAS, SEEDBED AREAS WHERE WEED-SEED FREE MULCH IS DESIRED, OR ON SITES WHERE STRAW MULCH AND TACKIFIER AGENT ARE NOT PRACTICAL OR DESIRABLE.

- A. APPLYING THE FULL 0.2 TO 0.4 INCHES OF WATER AFTER SPREADING PELLETIZED MULCH ON THE SEED BED IS EXTREMELY IMPORTANT FOR SUFFICIENT ACTIVATION AND EXPANSION OF THE MULCH TO PROVIDE SOIL COVERAGE.

- A. NOTE: ALL NAMES GIVEN ABOVE ARE REGISTERED TRADE NAMES. THIS DOES NOT CONSTITUTE A RECOMMENDATION OF THESE PRODUCTS TO THE EXCLUSION OF OTHER PRODUCTS.

- B. THE QUALITY OF PERMANENT VEGETATION RESTS WITH THE CONTRACTOR. THE TIMING OF SEEDING, PREPARING THE SEEDBED, APPLYING NUTRIENTS, MULCH AND OTHER MANAGEMENT ARE ESSENTIAL. THE SEED APPLICATION RATES IN TABLE 4-3 ARE REQUIRED WHEN A REPORT OF COMPLIANCE IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OF PERMANENT VEGETATION. UP TO 50% REDUCTION IN RATES MAY BE USED WHEN PERMANENT VEGETATION IS ESTABLISHED PRIOR TO A REPORT OF COMPLIANCE FROM THE DISTRICT. THESE RATES APPLY TO ALL METHODS OF SEEDING. ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATIVE COVER (OF THE SEEDBED SPECIES) AND MOWED ONCE. NOTE THIS DESIGNATION OF MOWED ONCE DOES NOT GUARANTEE THE PERMANENCY OF TURF SHOULD OTHER MAINTENANCE FACTORS BE NEGLECTED OR OTHERWISE MISMANAGED.

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SETBACK CERTIFICATION
TAX LOT 21, BLOCK 40
BOROUGH OF OCEAN PORT
MONMOUTH COUNTY
NEW JERSEY



Mr. Clelland:

Below, please find field measurements performed in regard to Average Front Setbacks within 200' of the property in question (PQ), said property known as 177 Comanche Drive in Oceanport, New Jersey. Field measurements were performed on July 20, 2020.

I hereby certify the following:

AVERAGE FRONT SETBACKS								
177 COMANCHE DRIVE, OCEANPORT, MONMOUTH COUNTY, NEW JERSEY								
BLOCK	LOT	ADDRESS	FACING COMANCHE DRIVE			FACING SHREWSBURY RIVER TO MHWL		
			DWELLING	PORCH	STEP	DWELLING	DECK/PORCH	STEP
24	9	174 COMANCHE DRIVE	16.5	23.9	17.4	N/A	N/A	N/A
24	10	170 COMANCHE DRIVE	31.6	N/A	35.1	N/A	N/A	N/A
26	8	180 COMANCHE DRIVE	28.5	36.4	31.2	N/A	N/A	N/A
26	9	184 COMANCHE DRIVE	24.8	37.2	38.8	N/A	N/A	N/A
40	17	189 COMANCHE DRIVE	252.6	247.6	245.6	116.0	115.1	N/A
40	18	187 COMANCHE DRIVE	207.5	N/A	N/A	113.3	106.2	94.4
40	19	185 COMANCHE DRIVE	230.5	N/A	N/A	123.7	118.1	N/A
40	20	183 COMANCHE DRIVE	211.7	N/A	N/A	55.1	44.6	44.6
40	21	177 COMANCHE DRIVE	N/A	N/A	N/A	N/A	N/A	N/A
41	1	175 COMANCHE DRIVE	27.9	59.6	45.8	214.1	193.8	148.8
41	2	169 COMANCHE DRIVE	265.3	257.2	257.2	51.2	61.1	57.8
AVERAGE			129.7	110.3	95.9	112.2	106.5	86.4

8/7/2020

DATE

JUSTIN J. HEDGES
 NJ PLS NO. GS43362

InSite Surveying, LLC

1955 Route 34; Suite 1A • Wall, NJ 07719
 732-531-7100 (ph) • 732-531-7344 (fx)
 www.InSiteSurveying.net



Planning/Zoning Combined Board

315 E. Main Street
Oceanport, NJ 07757

SCHEDULED

PLANNING BOARD APPLICATION (ID # 1893)

Meeting: 01/12/21 07:00 PM
Department: Planning/Zoning Board
Category: PB Applications
Prepared By: Jeanne Smith
Initiator: Jeanne Smith
Sponsors:
DOC ID: 1893

PB2020-21 Somerset Development

CARRIED from December 22, 2020

Block 110, P/O Lot 1

Commonly Known as Fort Monmouth Lodging Parcel

Signal Avenue

Preliminary & Major Site Plan with variance(s) for Construction of 180 residential units

HISTORY:

12/22/20 Planning/Zoning Board

Block 110, P/O Lot 1

Fort Monmouth Lodging Area Parcel

Signal Avenue

EXHIBITS:

A-1 Land Development Application

A-2 Preliminary & Final Major Site Plan, 31 Sheets, prepared by Dewberry Engineering, Inc., dated November 15, 2019, last revised July 9, 2020

A-3 Architectural Plans "Work for: Proposed Townhouse," prepared by Gravino & Gillis Architects and Planners, LLC, dated December 3, 2019, 28 sheets

A-4 Stormwater Management Report," prepared by Dewberry Engineers, Inc., dated November 15, 2019, last revised July 9, 2020

A-5 Operations & Maintenance Manual for Stormwater Management Facilities," prepared by Dewberry Engineers, Inc., dated November 20, 2019, last revised July 9, 2020

A-6 Fort Monmouth Lodging Tract Environmental Impact Statement," prepared by Dewberry Engineers, Inc., dated July 2020

A-7 Fort Monmouth Economic Revitalization Authority (FMERA), Mandatory Conceptual Review letter dated March 25, 2020

A-8 Traffic Impact Study, prepared by Langan Engineering and Environmental Services, Inc., dated March 3, 2020, last revised July 15, 2020

A-9 Rear Elevations, Sheet 28 of 28, prepared by Gravino & Gillis Architects and Planners, LLC, dated December 2, 2020

A-10 Illustrated Site Plan, prepared by Marianne Cusato Design, LLC, dated December 22, 2020

A-11

B-1 Maser Consulting Review Letter dated November 25, 2020

B-2 Borough Planner Kendra Lelie Review Letter dated December 22, 2020



Engineers
Planners
Surveyors
Landscape Architects
Environmental Scientists

11.2.a

Corporate Headquarters
331 Newman Springs Road, Suite 203
Red Bank, NJ 07701
T: 732.383.1950
F: 732.383.1984
www.maserconsulting.com

November 25, 2020

VIA EMAIL

Jeanne Smith, Planning Board Secretary
Borough of Oceanport Planning Board
315 East Main Street
Oceanport, NJ 07757

Re: Preliminary and Final Site Plan
Fort Monmouth Lodging Tract
Block 110, P/O Lot 1
Borough of Oceanport, Monmouth County, New Jersey
Application No. PB2020-17
MC Project No. OPP-278

Dear Ms. Smith:

Our office is in receipt of the following documentation regarding the above-referenced Application:

- Plans entitled "Preliminary and Final Major Site Plan, Fort Monmouth Lodging Tract," prepared by Dewberry Engineers, Inc., revised July 9, 2020, consisting of thirty-one (31) sheets;
- Plans entitled "Work for: Proposed Townhouse," prepared by Gravino & Gillis Architects and Planners, LLC, dated December 3, 2019, consisting of twenty-eight (28) sheets;
- Report entitled "Stormwater Management Report," prepared by Dewberry Engineers, Inc., revised July 9, 2020;
- Report entitled "Operations & Maintenance Manual for Stormwater Management Facilities," prepared by Dewberry Engineers, Inc., revised July 9, 2020;
- Report entitled "Fort Monmouth Lodging Tract Environmental Impact Statement," prepared by Dewberry Engineers, Inc., dated July 2020;
- Mandatory Conceptual Review letter dated March 25, 2020;
- Traffic Impact Study, prepared by Langan, revised July 15, 2020;



- Preliminary Estimated Project Schedule;
- FMERA Utility Will Serve Letter dated February 27, 2020;
- NJAWC Will Serve Letter dated January 13, 2020.

The subject property is a 15.37-acre parcel on Fort Monmouth known as the Lodging Area parcel. The property consists of Buildings 270, 271, 328, 360, 361, 362, 363, 364 and 365 totaling approximately 184,207 square feet. The parcel is bound by Parkers Creek to the north, Barton Avenue to the east, Carty Avenue to the south, and Allen Avenue to the west. The property is located in the Horseneck Center District which permits the proposed use. Additionally, Buildings 270 and 271 are situated in the Fort Monmouth Historic District.

The Re-use Plan envisioned that the parcel would be redeveloped for lodging and/or conference center with a boutique hotel along Parkers Creek. Mixed income apartments would be provided in Buildings 271 & 360. Building 270 would provide supportive housing. The remainder of the buildings would be razed.

The parcel is proposed to be developed in accordance with the overlay zoning approved under Reuse Plan Amendment #14. In accordance therewith, Buildings 360, 361, 362, 363, 364 and 365 will be razed, Building 328 will remain, and Buildings 270 and 271 will be renovated into affordable housing units. The Applicant proposes to construct a total of 180 units of which 144 units will be market rate townhouses.

We offer the following preliminary comments for the Board's consideration:

A. Variances

1. The Applicant proposes 81.2% impervious coverage for Proposed Lot 1.02 which contains Building 270. N.J.A.C. 19:31C-3.5(f) permits a maximum impervious coverage of 75%.
2. Amendment #14 permitted a Maximum Building Height of 44 feet. Building height definition is "*vertical distance as measured from the mean or average finished grade of the building to the highest point of the roof of the building but not including rooftop appurtenances. If the mean or average finished grade is three feet or more above existing grade then the measurement shall be taken from the existing grade.*" The Applicant has not requested a height variance. The architectural plans are not dimensioned and do not indicate the various steps/changes in finished floor elevations in the connected units. Based on a scaling of the building elevation and spot checks of the various buildings, there appears to be numerous units that exceed the permitted height. The Applicant shall

clarify if they are requesting a height variance and, if so, additional information will be required to determine the extent.

The Fort Monmouth Land Use Law permits the granting of a bulk and area-type variance under either of the following situations (NJAC 19:31C-3.21a):

- By reason of the exceptional narrowness, shallowness, or shape of the property; exceptional topographic conditions or physical features uniquely affecting the property; or an extraordinary and exceptional situation uniquely affecting the property or structures lawfully existing thereon, strict application would result in peculiar and exceptional practical difficulties to, or exceptional and undue hardship upon, the developer; or
- A determination that the purposes of the Reuse Plan and this subchapter would be advanced by a deviation from the bulk and area requirements of this subchapter and the benefits of the deviation would substantially outweigh any detriment.

B. Design Waivers/Exceptions

1. The proposed lighting is not compliant with the requirements of NJAC 19:31C-3.10(j)(4), maximum lighting intensity of 0.1 foot-candles at the property lines.
2. Parking areas in excess of 25 vehicles shall provide for a minimum of 10% of the interior area to be landscaped. The Applicant shall demonstrate that the parking area for Building 271 complies or request a waiver.
3. NJAC 19:31-3.15(e)(1)(v) requires all medium-density residential buildings to provide secure indoor bike racks in the garage area or within a separate secured storage room. The Applicant shall demonstrate compliance or request a waiver.
4. On-street parking spaces are required to be 23 feet long (NJAC 5:21-4.14 (f)) whereas 22 feet are proposed.

The Fort Monmouth Land Use Law permits the granting of a design waiver/exception from requirements listed in N.J.A.C. 19:31C-3.10 through 3.12 under either of the following situations (NJAC 19:31C-3.21d):

- The literal enforcement of one or more of the rules in this subchapter is impractical; or
- The literal enforcement of one or more of the rules in this subchapter will exact undue hardship because of peculiar conditions pertaining to the land in question.



C. General Comments

1. The site consists of three (3) proposed lots. Proposed Lot 1.01 will contain the 144 townhomes units while Lots 1.02 & 1.03 are for the affordable units. The Applicant shall clarify if they will be held in common or separate ownership. The plans also have labels Blocks 1 through 5 within Lot 1.01 which requires clarification.
2. The two proposed roadways, 12 proposed “Driveways”, and portions of Bennett Avenue, Allen Avenue, Housing Avenue, Signal Avenue, Lock Wood Avenue, and Carty Avenue are located within the three (3) proposed lots. The Applicant shall clarify the entity that will be responsible for the maintenance of these roadways and drainage systems. It is our understanding that FMERA has reserved the right to regain ownership of the private roads in the future.
3. Construction details are provided for Concrete Vertical and Granite Block Curbing. The limits of each type of curbing are unclear and shall be clarified on the plans.
4. There are short portions of existing curbing on Signal Avenue that are not being replaced. The improvements are most likely over 50 years old and should be replaced.
5. The new Block and Lot number shall be obtained from the Borough Tax Assessor. Since the final configuration of the parcels on the Fort property is unknown, the Assessor has contacted the Department of Taxation for guidance.

D. Exceptions

1. The Applicant has requested de minimis exceptions for the following items from the Residential Site Improvement Standards:
 - a. Centerline Radius – 100’ required, 40’ proposed for Roads “A” & “B” and 65’ existing for Signal Avenue.
 - b. Tangent Length between tangents – 50’ required, 16.5’ existing for Signal Avenue.
 - c. Distance between Roadway Intersection Centerline – 150’ required, 74.6’ for Signal Avenue.

E. Grading Comments

1. The Flood Elevation BFE is 8.00. The Design Flood Elevation is 10.4. All construction materials below elevation 10.4 must be water resistant. Please refer to FEMA Technical Bulletin 2 for more information. It appears that units 48-53 and 79-85 do not comply.
2. Profiles shall be provided for all streets and Driveways “C through N.”

3. A safety fence is required along any wall with a height greater than 30 inches. Ensure that the fence meets the local building code safety criteria and provide a detail for the fence.
4. Provide cut/fill calculations in order to determine the proposed number of trucks that will be entering and leaving the site to address potential traffic issues and potential impacts to the surrounding roadways.
5. In accordance with ADA requirements, the running slope of walking surface shall not be steeper than 1:20 (approximately 5%). If the slope is 5% or greater, handrails will be required. Ramp runs shall have a running slope not steeper than 1:12 (approximately 8.3%). Also, the cross slope of a walking surface shall not be steeper than 1:48 (approximately 2%).
6. In accordance with ADA requirements, the maximum slope in any direction at handicap accessible parking spaces, passenger loading areas and access aisles shall not exceed 1:48 (approximately 2%). Sport grades shall be provided to demonstrate compliance.
7. Detailed grading plans are needed for all handicap ramps to assure compliance with ADA standards.

F. Landscaping

1. These plans are incomplete and missing sufficient data to perform a proper landscape review. The plant symbols are not labeled or quantified. Multiple species are represented by one (1) symbol. Make the appropriate revisions to include details and product descriptions along with specific quantities of plant material.
2. With reference to the unit driveways, for Driveways C, E, H, K, and N there are six (6) driveways in a row without landscape strips to break them up.

G. Landscape Details

1. The landscape legend should not use one (1) symbol for multiple species. Each plant should be represented by a dedicated symbol to avoid confusion.
2. The plant list is incomplete. It does not provide quantities of plant material specified within the list. Also, specific detail should be provided about the form of the described plant material.
3. The street tree planting detail should clarify the tree guy detailing. It lacks clarity. The Borough prefers 1/2" plastic chain to avoid tree girdling and bark damage.

4. The root barrier detail should be revised to be similar to the street tree planting detail. The Borough prefers physical root barrier restraint rather than chemical types.
5. Note No. 9 should be removed. No bare root trees or shrubs are permitted.
6. The typical building planting landscape plan is incomplete and missing sufficient details to perform a proper review. The plant symbols are not labeled or quantified, nor is a plant list or symbol key provided.
7. Unit planting plans should contain different plant materials based on exposures. Multiple scenarios should, therefore, be provided in future reviews.

H. Lighting

1. The lighting point to point illumination analysis on the east end of Signal Avenue should be extended to the property line to properly analyze the possibility for non-conforming light spillage.
2. Illumination levels between Units 23-27 and Buildings 74-78, as well as Units 28-32 and Buildings 69-73 are too intense and would probably aggravate residents in the courtyard due to high levels of illumination. We would like to see an alternate source of light fixture provided in this area. We would suggest that bollards be provided along the sidewalks which will avoid lighting trespass into the adjacent residents' windows on account of a lower cone of reflection. The bollards should also be controlled with dawn to dusk timers and activation sensors to reduce the allowance of light trespass into the adjacent residences.
3. The western property line parallel to Driveway C does not carry out the lighting point to point analysis in this area. The illumination levels should be extended out in this area with particular emphasis adjacent to Unit 1 and Unit 16 for proper review.
4. Excessive light spillage occurs along the Parker's Creek area. If this is intentional, a variance may be required in order to exceed the light trespass beyond the property lines standard.
5. Along the northeast portion of Signal Avenue, connecting to Barton Avenue, illumination levels should be extended to the property line to ensure compliance with standards.
6. The south end of Bennett Avenue, as it approaches the property line, should be provided with additional lighting levels for analysis.

7. The south end of Allen Avenue contains an extremely high level of illumination beyond the subject property lines. Be prepared to discuss why this level of foot candle is needed.
8. The area in the east end of Lockwood Avenue, where it connects to Allen Avenue, should be provided with a minimum level of 0.5 foot-candles for safety consideration in a westerly direction.

I. Lighting Details

1. The lighting installation detail should be revised to reflect 4'6" burial depth below surface to be consistent with the light pole foundation detail, as opposed to 38".
2. The light pole detail, trash bin detail, typical street sign detail, bench detail, townhouse fence detail, bike rack detail should all illustrate their chosen color. We would suggest that they are matching so as to provide aesthetic uniformity.

J. Traffic and Circulation

1. Testimony shall be provided as to the anticipated daily and peak trips generated from the site in addition to ingress and egress traffic patterns as well as any impacts to the existing residence development and proposed adjacent business development.
2. Sight triangles shall be shown at all intersections to ensure adequate sight distances without obstruction.
3. It appears that Allen Avenue is proposed to be blocked off creating a dead end without a turnaround for emergency vehicles. The Applicant should clarify why through traffic is not permitted and how emergency vehicles will turn around.
4. The Applicant shall provide a Circulation plan for a WB-40 along with the Borough's fire truck, turning radius information attached. The plan shall demonstrate that the turning paths for all vehicles can maneuver throughout the site without obstruction.
5. Will the applicant be granting the Oceanport Police Department authority to enforce Title 39 regulations?

6. Stop signs should be provided on Driveway K at Driveways J & L to avoid driver confusion.

K. Pedestrian Circulation

1. All existing sidewalks and corresponding handicap ramps shall be replaced along the frontages on Carty Avenue, Barton Avenue, and Signal Avenue.
2. The mid-block crosswalk on Signal Avenue requires the appropriate signage.
3. All crosswalk striping shall be 2' by 6' stripes that are two (2) feet apart (clear distance) with no side bars.

L. Stormwater Management

1. Page 5 of the Stormwater Management Report – Section 3.3, Upland Drainage Patterns – states that the surrounding pipes are filled with water and debris and the total drainage area is unknown. Our office disagrees with the assumption that the existing pipe capacity represents the actual upland runoff to the site. The Applicant must submit estimated calculations of full future build-out of the upland drainage areas tributary to the site. The estimated runoff must be used as part of the stormwater conveyance system design.
2. Regarding section 5.5 of the Stormwater Management Report, Pipe Flow Calculations, the Applicant must prove that the runoff captured on site and received from the upland areas for the 100-year design storm will be conveyed safely to Parkers Creek without any ponding issues at the bulkhead wall.
3. Should the designer choose to keep the existing outfall, onsite stormwater detention must be provided in an onsite non-flooded area to meet the existing outfall's capacity. To eliminate the need for onsite detention, the Applicant may consider reconstructing the outfalls at a size adequate to meet the required outflow at each location.
4. Regarding section 5.8 of the Stormwater Management Report, Water Quality, the Applicant must provide an exhibit for all existing and proposed asphalt areas to clarify which asphalt areas are new and which overlap with existing asphalt. Such areas must be labeled accordingly. A weighted TSS calculation sheet must be submitted to support the required exhibit for the selection of the proposed water quality devices. (a copy of NJDEP procedures sketch is attached).
5. The soil survey map must be revised to show the limits of the site (15.37 acres); not 707.4 acres, as provided.



6. The design calculations for the stormwater pipes within the Stormwater Management Report are clearly showing the lack of capacity for two runs:
 - a. Headwall 100:
Run Capacity is 17.47 cfs, while the design flow for the 25-year storm is 37.31 cfs. The design flow is over two times the maximum flow the outfall can handle.
 - b. Headwall 300:
Run Capacity is 5.64 cfs, while the design flow for the 25-year storm is 18.85 cfs. The design flow is over three times the maximum flow the outfall can handle.
7. According to NJAC 5:21-7.3 (f), no pipe size in storm drainage system shall be less than 15" in diameter. The design must be revised to meet this requirement.
8. The design must comply with NJAC 5:21-7.3 (c) and velocities in closed conduits must be provided.
9. The report must include the stormwater conveyance system calculations to the existing 15" outfall like the other three outfalls.
10. There are several locations where drainage manholes are located in driveways and curb lines. These structures shall be relocated.
11. Operations and Maintenance Manual shall be revised to address the following comments:
 - Contact information shall be provided for the owner as they will be responsible for the operation and maintenance of the project's drainage system.
 - Manual shall provide the construction details for the various structures shall they require repair/reconstruction in the future.
 - In accordance with the Borough's Stormwater Control Ordinance the owner/operator of the Stormwater Facility is required to submit annual inspection reports and maintenance logs to the Borough Clerk by January 31st for the previous year. The manual shall clearly note this requirement.
12. The approved Operation and Maintenance Manual will have to be filed at the County so that it can be discovered by future owners



M. Miscellaneous

1. General Note #22 indicates that trash and recyclables for the two multi-family buildings will be stored in the loading docks. The Applicant shall clarify where this is located on the plans.
2. Street names shall be approved by the governing body.
3. The Applicant shall be required to provide an electronic version of the boundary survey in AutoCAD format.
4. A Tax Map Revision Fee of \$255 shall be paid to the Borough should the Application be approved.
5. A signage location map shall be provided as there are details for numerous signs. The sign detail shall be revised to provide a breakaway post.
6. The height of the Promenade and front yard fences shall be noted on the plans.
7. The driveway paver detail lacks information as to the sub-base depth and material. In addition, the sand to infill the joints shall be siliconized sand.
8. The construction detail is needed for the individual driveways.

N. Additional Agency Approvals

This Application is subject, but not limited to, the following outside agency approvals or letter of no jurisdiction:

- a. Monmouth County Planning Board
- b. Oceanport Fire Marshal
- c. Two River Water Reclamation Authority
- d. New Jersey American Water
- e. Freehold Soil Conservation District
- f. State Historic Preservation Office
- g. NJ Historic Trust



Jeanne Smith, Planning Board Secretary
MC Project No. OPP-278
November 25, 2020
Page 11 of 11

Should you have any questions regarding this matter, please do not hesitate to contact me directly.

Very truly yours,

MASER CONSULTING, INC.

A handwritten signature in blue ink, appearing to read 'W.H.R. White, III'.

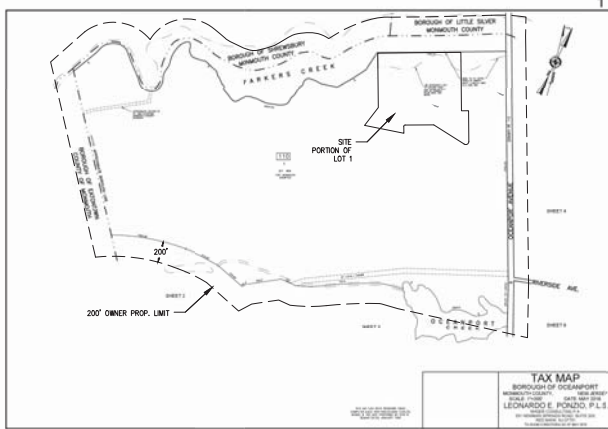
William H.R. White, III, P.E., P.P., C.M.E.
Planning Board Engineer and Planner

WHW/dmm

cc: Mario Iannelli, P.E., Dewberry Engineers, Inc. (via email)
Michael Bruno, Esq. (via email)

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TAX MAP
1"=±500'



Drawing Index

SHEET#	DESCRIPTION	SHEET#	DESCRIPTION
C-101	COVER SHEET	C-120	LIGHTING PLAN - 1
C-102	OVERALL SITE PLAN	C-121	LANDSCAPE PLAN - 2
C-103	DEMOLITION PLAN	C-122	LANDSCAPE PLAN - 2
C-104	LAYOUT DIMENSIONAL CONTROL - 1	C-123	LANDSCAPE PLAN - 2
C-105	LAYOUT DIMENSIONAL CONTROL - 2	C-124	SOIL EROSION PLAN
C-106	GRADING PLAN - 1	C-125	LANDSCAPING DETAILS-1
C-107	GRADING PLAN - 2	C-126	LANDSCAPING DETAILS-2
C-108	UTILITY PLAN - 1	C-127	LANDSCAPING DETAILS-3
C-109	UTILITY PLAN - 2	C-128	S.E. & S.C. CONSTRUCTION DETAILS
C-110	UTILITIES SERVICE CONNECTION PLAN - 1	C-129	CONSTRUCTION DETAILS - 1
C-111	UTILITIES SERVICE CONNECTION PLAN - 2	C-130	CONSTRUCTION DETAILS - 2
C-112	UTILITY WATER PLAN - 1	C-131	CONSTRUCTION DETAILS - 3
C-113	UTILITY WATER PLAN - 2		
C-114	SANITARY SEWER PLAN - 1		
C-115	SANITARY SEWER PLAN - 2		
C-116	UTILITY STORM PLAN - 1		
C-117	UTILITY STORM PLAN - 2		
C-118	UTILITY ELECTRICAL PLAN - 1		
C-119	UTILITY ELECTRICAL PLAN - 2		

LOCATION MAP

1"=±500'



PRELIMINARY & FINAL MAJOR SITE PLAN FOR FORT MONMOUTH LODGING TRACT Block 110 - Portion of Lot 1 Borough of Oceanport, Monmouth County, New Jersey

PROPERTY OWNER LIST

OCEANPORT BOROUGH				SHREWSBURY BOROUGH			
BLOCK	LOT	OWNER	PROPERTY LOCATION	BLOCK	LOT	OWNER	PROPERTY LOCATION
103.01	1	BORO OF OCEANPORT 222 MONMOUTH BLVD OCEANPORT, NJ 07757	EAST MAIN STREET (ADDITIONAL LOTS: 1.01, 1.02, 1.03, 2) RIVERSIDE AVENUE	110.02	43	SWINLEY, JOSEPH W JR & CAROLYN W OCEANPORT, NJ 07757	29 RUSSEL AVENUE
104	1	US GOV US ARMY SE 1 EH-E FORT MONMOUTH, NJ 07703	LEONARD AVENUE	110.02	44	TADDEI, ANTHONY & BRIGHT, KAREN OCEANPORT, NJ 07757	27 RUSSEL AVENUE
105	1	US GOV US ARMY SE 1 EH-E FORT MONMOUTH, NJ 07703	LEONARD AVENUE	110.02	45	CORRAN, CHRISTOPHER & JILL 25 RUSSEL AVE OCEANPORT, NJ 07757	25 RUSSEL AVENUE
109	1	US GOV US ARMY SE 1 EH-E FORT MONMOUTH, NJ 07703	OCEANPORT AVENUE	110.02	46	WELLS, CLARE & GARY 23 RUSSEL AVE OCEANPORT, NJ 07757	23 RUSSEL AVENUE
109	2	US GOV US ARMY SE 1 EH-E FORT MONMOUTH, NJ 07703	LEONARD AVENUE	110.02	47	CORSON, DONALD J & MARY E 21 RUSSEL AVE OCEANPORT, NJ 07757	21 RUSSEL AVENUE
110	1	US GOV US ARMY SE 1 EH-E FORT MONMOUTH, NJ 07703	OCEANPORT AVENUE	110.02	48	SCERBO, DANA LYNN 19 RUSSEL AVE OCEANPORT, NJ 07757	19 RUSSEL AVENUE
110	2	US GOV US ARMY SE 1 EH-E FORT MONMOUTH, NJ 07703	MAIN STREET	110.02	49	FEELY, ROBERT & ERIN 10 RUSSEL AVENUE OCEANPORT, NJ 07757	10 RUSSEL AVENUE
110	3	US GOV US ARMY SE 1 EH-E FORT MONMOUTH, NJ 07703	MAIN STREET	110.02	50	RODRIGUES, DAVID & MARINA B 8 RUSSEL AVENUE OCEANPORT, NJ 07757	8 RUSSEL AVENUE
110	4	US GOV US ARMY SE 1 EH-E FORT MONMOUTH, NJ 07703	MAIN STREET	110.02	51	DELANEY, CLARE 6 RUSSEL AVENUE OCEANPORT, NJ 07757	6 RUSSEL AVENUE
110	5	JORDAN, CO S TAN DEPT 800 CABIN HILL DRIVE GREENSBORO, PA 15603	MAIN STREET REAR	110.02	52	MURPHY, HENRY JARED AND JOYCE 11 RUSSEL AVE OCEANPORT, NJ 07757	11 RUSSEL AVENUE
110	20	OCEANPORT HOOK & LADDER 21 MAIN ST OCEANPORT, NJ 07757	21 MAIN STREET	110.02	53	SHIRLEY, EDWARD & YAN Y C 2 RUSSEL AVENUE OCEANPORT, NJ 07757	2 RUSSEL AVENUE
110	25	OLD WHARF PARK LUXURY TOWNHOMES LLC 16 A BELLEVUE AVE RANGLON, NJ 07860	350 OCEANPORT AVENUE	110.02	54	RESIDENCES AT FORT MONMOUTH, LLC 77 PARK STREET MONTCLAIR, NJ 07042	7 RUSSEL AVENUE
110	25.01	BRANDFORD, KENNETH & JACQUELINE S 5-1 MAIN ST. UNIT #1 OCEANPORT, NJ 07757	5-1 MAIN STREET	110.02	55	RUZZO, ELIZABETH A 5 RUSSEL AVE OCEANPORT, NJ 07757	5 RUSSEL AVENUE
110	25.02	MAGNUS, MURRAY 30 CHRY LANE OCEAN, NJ 07712	5-2 MAIN STREET	110.02	56	SWINNEY, JONATHAN & ARINNE, SUZANNE 1 RUSSEL AVE OCEANPORT, NJ 07757	3 RUSSEL AVENUE
110	25.03	DAVEY, MATTHEW J. & MEGAN 5-3 MAIN ST. UNIT #3 OCEANPORT, NJ 07757	5-3 MAIN STREET	110.02	57	SOLDANO, ANNE DEMPSEY & DONALD S 1 RUSSEL AVE OCEANPORT, NJ 07757	1 RUSSEL AVENUE
110	25.04	OLD WHARF PARK LUXURY TOWNHOMES LLC 16 A BELLEVUE AVE RANGLON, NJ 07860	5-4 MAIN STREET	110.02	58	BLOOMCOOD, JONATHAN 2 CARRY AVENUE OCEANPORT, NJ 07757	2 CARRY AVENUE
110.01	1	AQUASCAPING MANAGEMENT SERVICES, LLC 1075 STEPHENSON AVENUE OCEANPORT, NJ 07757	1075 STEPHENSON AVENUE	110.02	59	RESIDENCES AT FORT MONMOUTH, LLC 77 PARK STREET MONTCLAIR, NJ 07042	4 CARRY AVENUE
110.02	1	EASTGATE AT OCEANPORT HOA 77 PARK STREET MONTCLAIR, NJ 07042	46 RUSSEL AVENUE	110.02	60	RESIDENCES AT FORT MONMOUTH, LLC 77 PARK STREET MONTCLAIR, NJ 07042	6 CARRY AVENUE
110.02	2	RESIDENCES AT FORT MONMOUTH, LLC 77 PARK STREET MONTCLAIR, NJ 07042	42 RUSSEL AVENUE	110.02	61	RESIDENCES AT FORT MONMOUTH, LLC 77 PARK STREET MONTCLAIR, NJ 07042	8 CARRY AVENUE
110.02	3	RESIDENCES AT FORT MONMOUTH, LLC 77 PARK STREET MONTCLAIR, NJ 07042	40 RUSSEL AVENUE	110.02	62	RESIDENCES AT FORT MONMOUTH, LLC 77 PARK STREET MONTCLAIR, NJ 07042	10 CARRY AVENUE
110.02	4	RESIDENCES AT FORT MONMOUTH, LLC 77 PARK STREET MONTCLAIR, NJ 07042	38 RUSSEL AVENUE	110.02	63	RESIDENCES AT FORT MONMOUTH, LLC 77 PARK STREET MONTCLAIR, NJ 07042	12 CARRY AVENUE
110.02	5	RESIDENCES AT FORT MONMOUTH, LLC 77 PARK STREET MONTCLAIR, NJ 07042	36 RUSSEL AVENUE	110.02	64	EASTGATE AT OCEANPORT HOA 77 PARK STREET MONTCLAIR, NJ 07042	14 CARRY AVENUE
110.02	6	RESIDENCES AT FORT MONMOUTH, LLC 77 PARK STREET MONTCLAIR, NJ 07042	34 RUSSEL AVENUE	110.02	65	EASTGATE AT OCEANPORT HOA 77 PARK STREET MONTCLAIR, NJ 07042	16 CARRY AVENUE
110.02	7	RESIDENCES AT FORT MONMOUTH, LLC 77 PARK STREET MONTCLAIR, NJ 07042	32 RUSSEL AVENUE	110.02	66	RESIDENCES AT FORT MONMOUTH, LLC 77 PARK STREET MONTCLAIR, NJ 07042	18 CARRY AVENUE
110.02	8	RESIDENCES AT FORT MONMOUTH, LLC 77 PARK STREET MONTCLAIR, NJ 07042	30 RUSSEL AVENUE	110.02	67	SMITH, GREGORY & TULSU 20 CARRY AVENUE OCEANPORT, NJ 07757	20 CARRY AVENUE
110.02	9	ORFENDOS, JAMES & TRACEY 30 RUSSEL AVENUE OCEANPORT, NJ 07757	28 RUSSEL AVENUE	110.02	68	RESIDENCES AT FORT MONMOUTH, LLC 77 PARK STREET MONTCLAIR, NJ 07042	22 CARRY AVENUE
110.02	10	CURLEY, JAMES & MARY ANN 28 RUSSEL AVENUE OCEANPORT, NJ 07757	26 RUSSEL AVENUE	110.02	69	RESIDENCES AT FORT MONMOUTH, LLC 77 PARK STREET MONTCLAIR, NJ 07042	24 CARRY AVENUE
110.02	11	JOHNSON, DOUGLAS C & PATRICIA D 24 RUSSEL AVENUE OCEANPORT, NJ 07757	24 RUSSEL AVENUE	110.02	70	RESIDENCES AT FORT MONMOUTH, LLC 77 PARK STREET MONTCLAIR, NJ 07042	26 CARRY AVENUE
110.02	12	GLADSTONE, JAMES A & MARGARET W 22 RUSSEL AVENUE OCEANPORT, NJ 07757	22 RUSSEL AVENUE	110.02	40	RODRIGUES, DAVID & MARINA 8 RUSSEL AVENUE OCEANPORT, NJ 07757	8 RUSSEL AVENUE
110.02	13	BARRY, MARK C. & SANDRA CHANG 22 RUSSEL AVENUE OCEANPORT, NJ 07757	22 RUSSEL AVENUE	110.02	41	RESIDENCES AT FORT MONMOUTH, LLC (ADDITIONAL LOTS: J-1 OCEANPORT)	33 RUSSEL AVENUE
110.02	14	JENSEN, LAURITZ C & ARLENE 20 RUSSEL AVENUE OCEANPORT, NJ 07757	20 RUSSEL AVENUE	110.02	42	RODRIGUES, DAVID & MARINA 8 RUSSEL AVENUE OCEANPORT, NJ 07757	31 RUSSEL AVENUE

OWNER
FORT MONMOUTH ECONOMIC
REDEVELOPMENT AGENCY

APPLICANT:
SOMERSET DEVELOPMENT, LLC.

11.2.b

Dewberry

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PRELIMINARY & FINAL MAJOR SITE PLAN FOR
FORT MONMOUTH
LODGING TRACT
BLOCK 110 PORTION OF LOT 1
BOROUGH OF OCEANPORT
MONMOUTH COUNTY, NEW JERSEY



SCALE
GRAPHIC SCALE
SCALE: AS NOTED

No.	DATE	BY	DESCRIPTION
3	07/26/2019	CF	REV. PLAN SUBMISSION
2	02/26/2020	CF	REV. LAYOUT & SUBMISSION
1	06/15/2020	CF	REV. LAYOUT

REVISIONS
DRAWN BY: CF/TS/AJZ
APPROVED BY: M
CHECKED BY: CF/TS/AJZ
DATE: 11/15/2019
TITLE: COVER SHEET

PROJECT NO: 50110642
C-101
SHEET NO:

General Notes

- BOUNDARY LINES ARE SHOWN PER MAP ENTITLED "BOUNDARY SURVEY, BLOCK 110, LOT 4, FORMERLY BLOCK 110 PART OF LOT 1, FORT MONMOUTH MAIN POST LODGING AREA PARCEL, BOROUGH OF OCEANPORT, MONMOUTH COUNTY, NEW JERSEY", PREPARED BY LANGAN, DATED MAY 15, 2018, AND LAST REVISED 1/03/19. DEWBERRY ENGINEERS HAS NOT VERIFIED THE INFORMATION AND DOES NOT ASSUME LIABILITY FOR ANY ERRORS OR OMISSIONS THAT MAY EXIST.
- EXISTING SITE FEATURES AND TOPOGRAPHY ARE SHOWN PER A MAP ENTITLED "PARTIAL TOPOGRAPHIC & UTILITY SURVEY, FORT MONMOUTH, ALLEN AVENUE, PORTION OF LOT 1, BLOCK 110, BOROUGH OF OCEANPORT, MONMOUTH COUNTY, NEW JERSEY", PREPARED BY CONTROL POINT ASSOCIATES, INC., DATED 10-29-2019 AND LAST REVISED 10-30-2019.
- HORIZONTAL DATUM: NAD83
VERTICAL DATUM IS IN FEET: NAVD88.
- A PORTION OF THIS SITE LIES WITHIN A FLOOD HAZARD AREA. CERTAIN AREAS IN FLOOD HAZARD AREAS ARE REGULATED BY THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND SOME ACTIVITIES MAY BE PROHIBITED ON THIS SITE OR MAY FIRST REQUIRE A PERMIT. CONTACT THE DIVISION OF LAND USE REGULATION AT (609) 292-0600 FOR MORE INFORMATION PRIOR TO CONSTRUCTION ON-SITE. BASED ON THE PRELIMINARY FEMA FIRM PANEL 34025 C0183 H, MAP REVISED JUNE 20, 2018, THE FEMA 100 YEAR FLOOD HAZARD ELEVATION IS APPROXIMATELY EL. 8 NAVD88.
- THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION (NJDEP) FLOOD HAZARD AREA WAS CALCULATED BASED ON METHOD 2 AS STATED IN NJAC 7:13.3.4(d). BASED ON METHOD 2 AND FEMA FIRM PANEL 34025 C0183 H, THE NJDEP FLOOD HAZARD AREA IS EQUAL TO THE FLOOD HAZARD AREA AS STATED BY FEMA, WHICH IS EL. 8 NAVD88.
- THE LOCATION OF ALL UTILITIES INDICATED ON THE PLANS IS APPROXIMATE AND IS BASED ON AVAILABLE DATA. SUBSURFACE CONDITIONS AND LOCATIONS ARE NOT CERTIFIED. THE CONTRACTOR SHALL ASSESS AVAILABLE DATA AND SHALL INSPECT ALL FIELD CONDITIONS AND COORDINATE WITH ALL UTILITY COMPANIES AND THE OWNER PRIOR TO ANY EXCAVATION. ACTUAL CONFIGURATIONS MUST BE FIELD-VERIFIED VIA UTILITY COMPANY MARK-OUTS AND TEST PITS IF NEEDED. THE CONTRACTOR SHALL CONTACT THE RESPECTIVE UTILITY COMPANIES AND NJ ONE CALL (1-800-272-1000) FOR FIELD MARK-OUTS.
- CONSTRUCTION STANDARDS: ALL IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, COUNTY, STATE, FEDERAL, AND MANUFACTURER STANDARDS.
- ALL PROPOSED UTILITIES SHALL BE CONSTRUCTED UNDERGROUND UNLESS OTHERWISE DENOTED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND MAINTENANCE OF ALL UTILITIES DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES AND SHALL REPAIR OR CAUSE TO BE REPAIRED ANY DAMAGE TO EXISTING UTILITIES AS A RESULT OF HIS ACTIVITY. ALL WORK MUST BE COORDINATED WITH THE UTILITY COMPANIES AS ALL UTILITIES MUST BE MAINTAINED DURING CONSTRUCTION.
- ANY EXISTING ELEMENTS THAT MAY BE DISTURBED DURING CONSTRUCTION (I.E. BENCHES, FLOWER POTS, SHRUBS, FENCES, TRASH RECEPTACLES, ETC.), NOT OTHERWISE COVERED IN THE CONTRACT DOCUMENTS, MUST BE RESTORED TO THEIR ORIGINAL CONDITION TO THE SATISFACTION OF THE ENGINEER.
- ALL OPEN EXCAVATIONS SHALL BE BACKFILLED AND PROPERLY COMPACTED AT THE END OF EACH WORK DAY. COMPACTION OF ALL FILL MATERIALS SHALL BE 95% MODIFIED PROCTOR DENSITY (ASTM D-1557). THE SUB-BASE TO BE COMPACTED & PROOF-ROLLED UNDER THE OWNER'S SUPERVISION. EXCAVATION OF ANY UNSUITABLE MATERIALS TO BE AT THE DIRECTION OF THE OWNER'S ON-SITE FIELD ENGINEER OR SUPERVISION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LEGAL DISPOSAL OF ALL EXCESS MATERIALS EXCAVATED (AS UNCLASSIFIED).
- SPECIFICATIONS TO GOVERN THIS CONTRACT AND CONSTRUCTION SHALL BE THE 2007 NJDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AS SUPPLEMENTS AND ADDED TO HEREIN.
- REMOVED BITUMINOUS AND CONCRETE PAVEMENTS SHALL BE TRANSPORTED TO AN APPROVED RECYCLING CENTER AND THE TONNAGE CERTIFIED TO THE OWNER.
- THE CONTRACTOR SHALL MAINTAIN THE WORK AREA IN A CLEAN AND SAFE CONDITION AT ALL TIMES. THE WORK AREAS SHALL BE SWEEP CLEAN AND WATERED DOWN AT THE END OF EACH WORK DAY. DUST SHALL BE SUPPRESSED TO THE SATISFACTION OF THE ENGINEER. CONTRACTOR SHALL MAINTAIN EXISTING SITE DRAINAGE PATTERNS THROUGHOUT THE CONSTRUCTION UNLESS OTHERWISE SHOWN ON THE PLANS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING PERIMETER 6 FOOT-HIGH CHAIN LINK CONSTRUCTION FENCING AND ACCESS GATED TO MAINTAIN SITE SECURITY AND LIMIT ACCESS TO AUTHORIZED PERSONNEL.
- THIS SITE IS SUBJECT TO REVIEW AND APPROVAL BY THE FOLLOWING AGENCIES:
 - BOROUGH OF OCEANPORT PLANNING BOARD
 - MONMOUTH COUNTY PLANNING BOARD
 - FREEHOLD SOIL CONSERVATION DISTRICT
 - NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
 - FORT MONMOUTH ECONOMIC REDEVELOPMENT AGENCY
- THESE PLANS HAVE BEEN PREPARED FOR PRELIMINARY AND FINAL SITE PLAN APPROVALS FROM THE BOROUGH OF OCEANPORT. A FUTURE APPLICATION WILL BE MADE TO THE COUNTY PLANNING BOARD, NJDEP, AND OTHER APPLICABLE AGENCIES. THE NJDEP, SCD, ETC., SHALL NOT BE CONSIDERED CONSTRUCTION DOCUMENTS WITHOUT THE CONSENT OF THE UNDERSIGNED.
- THE PROPOSED WATER SYSTEM IS SUBJECT TO REVIEW BY THE LOCAL AUTHORITY TO CONFIRM POINT OF CONNECTION(S), LOCATION/TYPE OF FIRE HYDRANTS, AND FIRE DEPARTMENT CONNECTIONS.
- PROPOSED BUILDING SERVICES (SIZE & LOCATIONS) TO BE CONFIRMED WITH FINAL BUILDING DESIGN PLANS.
- THE OWNER, OR HIS REPRESENTATIVE, IS TO DESIGNATE AN INDIVIDUAL RESPONSIBLE FOR CONSTRUCTION SITE SAFETY DURING THE COURSE OF SITE IMPROVEMENTS PURSUANT TO NJAC 5:23-2.21(e) OF THE NJ UNIFORM CONSTRUCTION CODE & CFR 1926.32(f) (OSHA COMPETENT PERSON).
- SOLID WASTE AND RECYCLING FOR THE TWO (2) MULTI-FAMILY BUILDINGS WILL BE LOCATED WITHIN THE LOADING DOCK OF EACH INDIVIDUAL BUILDING FOR PICKUP. SOLID WASTE AND RECYCLING FOR THE TOWNHOUSE UNITS WILL BE PROVIDED VIA INDIVIDUAL WASTE AND RECYCLING BINS THAT WILL BE ROLLED OUT TO THE REAR ALLEYS FOR PICKUP.
- TOPSOIL MOVED DURING THE COURSE OF CONSTRUCTION SHOULD BE REDISTRIBUTED SO AS TO PROVIDE AT LEAST FOUR (4) INCHES OF COVER TO ALL AREAS OF THE SITE. NO TOPSOIL SHOULD BE REMOVED FROM THE SUBJECT PROPERTY OR USED AS SPOIL WITHOUT THE PERMISSION OF THE BOROUGH.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EXISTING STORMWATER FLOWS ENTERING THE PROJECT LIMITS DURING ALL PHASES OF CONSTRUCTION.
- ALL TRAFFIC SIGNS SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- EXISTING UTILITIES AND VARIED PIPING LOCATIONS AND ELEVATIONS SHOWN ON THE DRAWING ARE APPROXIMATE AND ARE INTENDED ONLY TO NOTE EXISTENCE OF SUCH UTILITIES AND PIPING IN THE AREAS SHOWN. BEFORE PROCEEDING WITH THE WORK, CONTRACTOR SHALL VERIFY UTILITY, DUCT/BANK AND PIPING LOCATIONS AND ELEVATIONS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- JCP&L, COMCAST, NEW JERSEY NATURAL GAS, VERIZON, NEW JERSEY AMERICAN WATER AND TWO RIVERS WATER RECLAMATION AUTHORITY FACILITIES MAY BE LOCATED WITHIN THE PROJECT LIMITS. AS A RESULT OF THIS PROJECT, THESE UTILITIES WILL BE REQUIRED TO BE PROTECTED, REMOVED, REPLACED OR RELOCATED. CONTRACTOR IS TO COORDINATE ALL WORK WITH THE APPROPRIATE UTILITY COMPANY.
- ALL SEWER MAINS SHALL BE INSTALLED WITH A MINIMUM SLOPE OF 0.3% UNLESS OTHERWISE NOTED.
- IN ACCORDANCE WITH BOROUGH OF OCEANPORT REQUIREMENTS, THE LOWEST FLOOR OF ANY RESIDENTIAL STRUCTURE, UNLESS USED SOLELY FOR THE PARKING OF VEHICLES, SHALL BE ELEVATED AT OR ABOVE BASE FLOOD ELEVATION PLUS TWO FEET, NAVD ELEVATION 8+2-10.
- WATERTIGHT SANITARY SEWER MANHOLE COVERS SHALL BE PROVIDED FOR ALL LOCATIONS WITH A RIM ELEVATION OF LESS THAN NAVD88 EL. 10.
- EXISTING ROADWAYS SHALL BE MILLED AND OVERLAYED WITH 2" OF ASPHALT, SUBJECT TO VERIFICATION THE PAVEMENT BASE AND SUBBASE MEET OR EXCEED RSIS STANDARDS.
- ON-SITE UTILITIES, EXCEPT AS NOTED ON THE UTILITY PLAN, SHALL BE CUT AND CAPPED AT THE PROJECT LIMITS AND REMOVED WITHIN THE SITE BOUNDARY.
- ALL EXISTING STRUCTURES, EXCEPT AS NOTED, SHALL BE DEMOLISHED IN ACCORDANCE WITH APPLICABLE REGULATION.
- IN ALL CASES WHERE EXISTING UTILITIES ARE TO BE CONNECTED TO PROPOSED NEW INFRASTRUCTURE, THE EXISTING LOCATION AND ELEVATION SHALL BE FIELD VERIFIED VIA TEST PIT PRIOR TO DESIGN AND FABRICATION OF STRUCTURES (I.E. MANHOLES AND INLETS). ANY DISCREPANCIES BETWEEN ASSUMED DATA ON THE DESIGN PLANS AND ACTUAL FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.

SOMERSET FORT MONMOUTH BLOCK 110 - LOT 1 (PORTION)		REQUIRED	EXISTING	PROPOSED OVERALL TRACT	PROPOSED LOT 1.01	PROPOSED LOT 1.02	PROPOSED LOT 1.03
MIN. LOT SIZE	N/A	669,612 SF 15.37 AC.	669,612 SF 15.37 AC.	565,756 SF 12.99 AC.	49,818 SF 1.14 AC.	54,038 SF 1.24 AC.	
MIN. NEW BUILDING SETBACKS							
- FRONT YARD	5'	77.1'	12'	N/A	N/A	N/A	N/A
- SIDE YARD	5'	12.7'	44.5'	N/A	N/A	N/A	N/A
- REAR YARD (BLDG. TO DRIVE AISLE)	18'	N/A	20'	N/A	N/A	N/A	N/A
MAX. TRACT DENSITY	12 UNITS/ACRE	N/A	12 UNITS/ACRE	N/A	N/A	N/A	N/A
- MAX. TOTAL UNITS	180	N/A	180	144	20	16	
- MAX MARKET RATE UNITS	144	N/A	144	144	0	0	
MAX. LOT COVERAGE	75%	52.5%	68.3%	68.2%	81.2%**	56.9%	
MAX. BUILDING HEIGHT	4' 3 STORIES	3 STORIES	4' 3 STORIES	4' 3 STORIES	4' 3 STORIES	3 STORIES	

(**) VARIANCE NEEDED
N/C DENOTES NO CHANGE
N/A DENOTES NOT APPLICABLE

PARKING SUMMARY

	REQUIRED	PROPOSED
LOT 1.01	144 - 3/4 BEDROOM UNITS - 2.4 SPACES/UNIT = 346	144 UNITS * 3.5 SPACES/UNIT (GARAGE + D/W) = 504 ON-STREET PARKING = 71 OFF-STREET PARKING = 5
TOTAL	346 SPACES	580 SPACES
GUEST	144 * 0.5 SPACES/UNIT = 72	76 SPACES
ADA	8 SPACES	2 VAN SPACES
ADA VAN 1 SPACE PER 6 ADA SPACE = 2 VAN SPACES		
LOT 1.02	13 - 2 BEDROOM UNITS - 2.3 SPACES/UNIT = 30 7 - 1 BEDROOM UNITS - 1.8 SPACES/UNIT = 13	OFF-STREET PARKING = 43
TOTAL	43 SPACES	43 SPACES
GUEST	20 * 0.5 SPACES/UNIT = 10	43 SPACES
ADA	2 SPACES	4 SPACES
ADA VAN 1 SPACE PER 6 ADA SPACE = 1 VAN SPACE		2 VAN SPACES
LOT 1.03	16 - 1 BEDROOM UNITS - 1.8 SPACES/UNIT = 29	OFF-STREET PARKING = 30
TOTAL	29 SPACES	30 SPACES
GUEST	16 * 0.5 SPACES/UNIT = 8	30 SPACES
ADA	2 SPACES	2 SPACES (INCLUDING 1 VAN SPACE)
ADA VAN 1 SPACE PER 6 ADA SPACE = 1 VAN SPACE		1 VAN SPACE

NOTE 1: ADA AND VAN SPACES CALCULATED USING 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN
NOTE 2: THE TOTAL PARKING REQUIREMENT INCLUDES PROVISIONS FOR GUEST PARKING

PROPOSED LEGEND

- CURB
- DEPRESSED/FLUSH CURB (AS NOTED)
- EDGE OF PAVEMENT
- STRIPED PEDESTRIAN CROSSWALKS
- SIGN
- PARKING ROW TOTALS
- HANDICAP RAMP
- HANDICAP PARKING STALL
- STORM PIPE
- "B" INLET
- "E" INLET
- STORM MANHOLE
- OUTLET STRUCTURE
- HEADWALL
- SANITARY SEWER
- SANITARY MANHOLE
- WATER LINE
- HYDRANT/WATER VALVE
- DOOR LOCATION
- DECORATIVE PAVEMENT (TYP.)

ON-SITE RSIS COMPLIANCE (N.J.A.C. §5:21)

STANDARD	ROADWAYS A AND B		SIGNAL AVENUE		
	REQUIREMENT	PROPOSED	REQUIREMENT	EXISTING	PROPOSED
STREET TYPE [TABLE 4.2]					
TRAVELED WAY WIDTH (MINIMUM) [TABLE 4.3]	16 FEET	16 FEET	16 FEET	30± FEET	23 FEET
PARKING LANE WIDTH (MINIMUM) [TABLE 4.3]	7 FT/LANE	7 FT/LANE	7 FT/LANE	0 FEET	7 FEET
CENTERLINE RADIUS (MINIMUM) [TABLE 4.6]	100 FEET	40 FEET (DE)	100 FEET	65± FT (EN)	NO CHANGE
CURB RADIUS (MINIMUM) [TABLE 4.6]	25 FEET	25 FEET	25 FEET	25 FEET	NO CHANGE
TANGENT LENGTH B/W CURVES [TABLE 4.6]	50 FEET	N/A	50 FEET	16.5± FT (EN)	NO CHANGE
PARKING AISLE WIDTH (MINIMUM) [TABLE 4.5]	24 FEET	N/A	N/A FEET	N/A	N/A
DISTANCE BETWEEN ROADWAY INTERSECTION CENTERLINE	150 FEET	N/A	150 FEET	N/A	74.6± FEET (DE)

(EN) = EXISTING NONCONFORMITY
(DE) = DEMINIS EXCEPTION
N/A = NOT APPLICABLE

REFERENCES:

- THE OFFICIAL TAX ASSESSOR'S MAP OF THE BOROUGH OF OCEANPORT, MONMOUTH COUNTY, NEW JERSEY, SHEET #1.
- MAP ENTITLED "LODGING AREA SEWER, BOROUGH OF OCEANPORT, FORT MONMOUTH, MONMOUTH COUNTY, NJ", PREPARED BY FORT MONMOUTH ECONOMIC REVITALIZATION AUTHORITY, DATED 06-06-2018.
- MAP ENTITLED "LODGING AREA WATER, BOROUGH OF OCEANPORT, FORT MONMOUTH, MONMOUTH COUNTY, NJ", PREPARED BY FORT MONMOUTH ECONOMIC REVITALIZATION AUTHORITY, DATED 06-06-2018.
- MAP ENTITLED "DIRECTORATE OF PUBLIC WORKS, FORT MONMOUTH, NEW JERSEY, AN ARMY COMMUNITY OF EXCELLENCE, MAIN POST SANITARY & STORM, MAP #".



Dewberry Engineers Inc.
600 PARSIPPANY ROAD
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Certificate of Authorization #24242047600

PRELIMINARY & FINAL MAJOR SITE PLAN FOR
FORT MONMOUTH
LODGING TRACT

BLOCK 110 PORTION OF LOT 1

BOROUGH OF OCEANPORT
MONMOUTH COUNTY, NEW JERSEY

SEAL



SCALE
GRAPHIC SCALE
0 40 80
SCALE: 1" = 40'

REVISIONS			
No.	DATE	BY	Description
3	07/09/2020	CFS	SITE PLAN SUBMISSION
2	02/28/2020	CFS	REVISE LAYOUT & SUBDIVISION
1	02/13/2020	CFS	REVISE LAYOUT
DRAWN BY: CFS/FD/JAZ			
APPROVED BY: MI			
CHECKED BY: CFS/ATR/MI			
DATE: 11/15/2019			
TITLE			

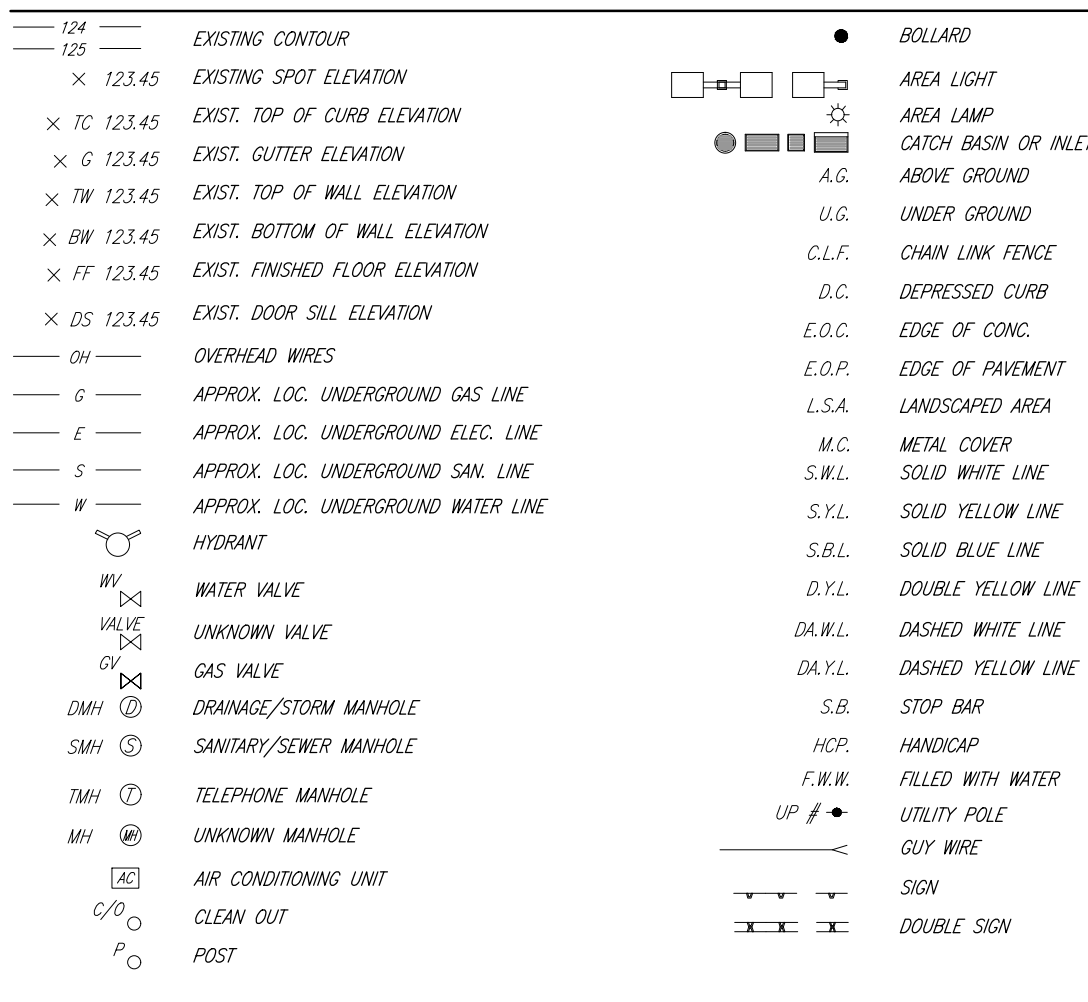
OVERALL
SITE PLAN

PROJECT NO. 50110642

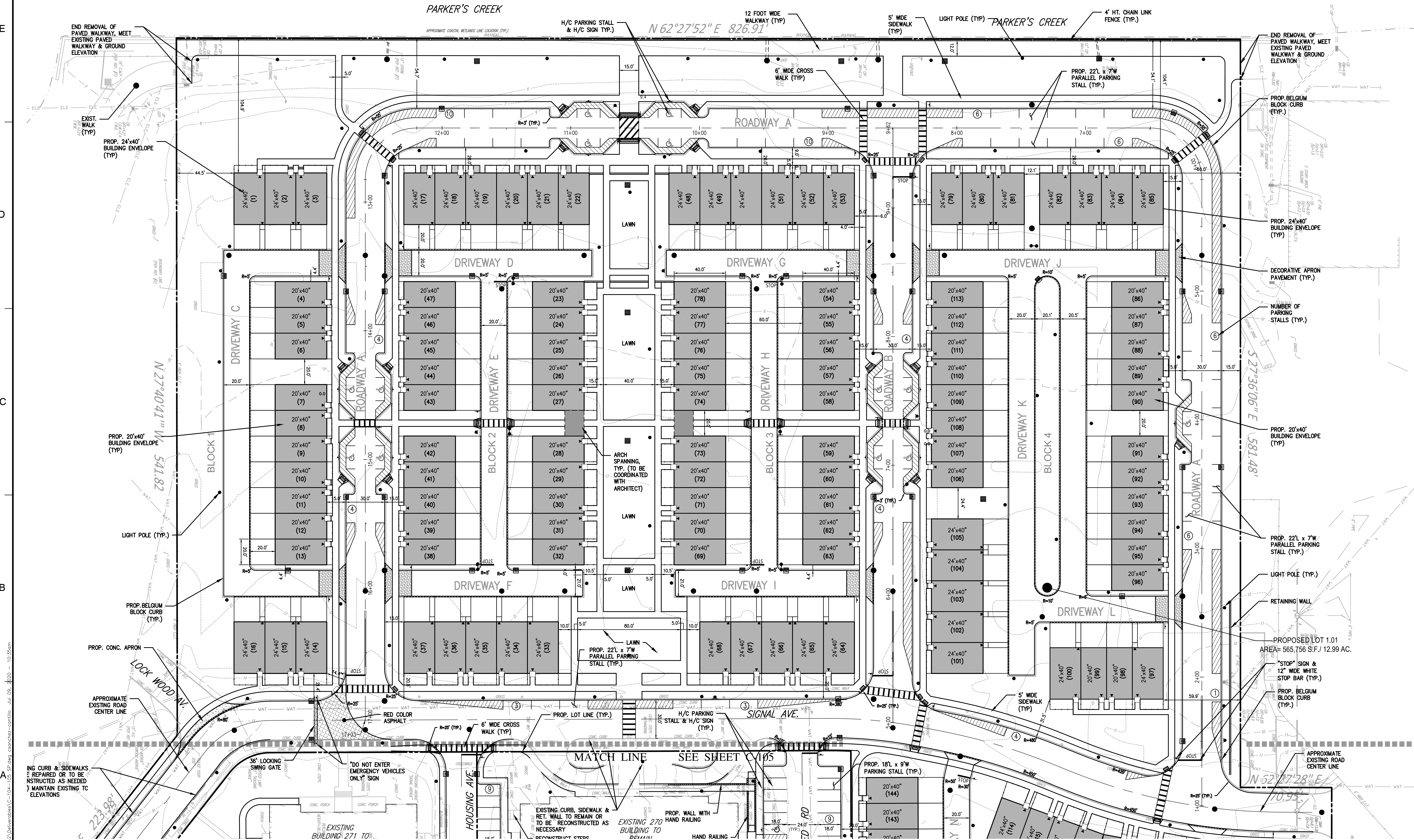
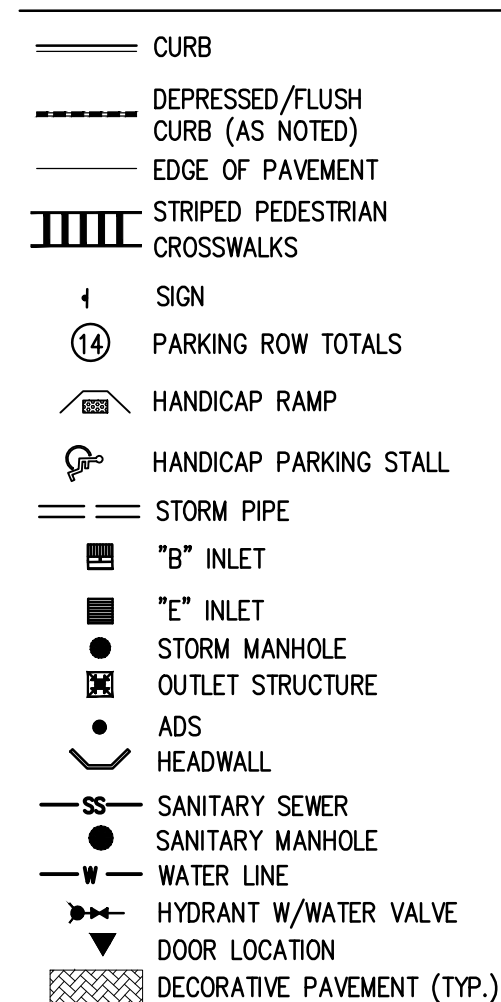
C-102

SHEET NO.

EXISTING LEGEND



PROPOSED LEGEND



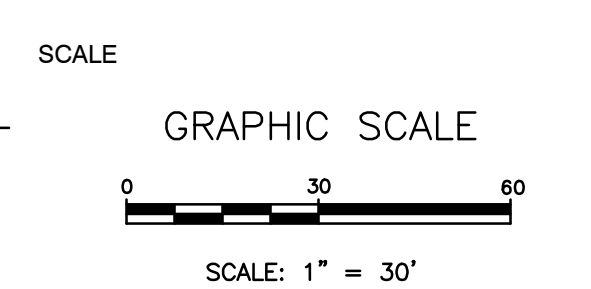
Dewberry

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PRELIMINARY & FINAL MAJOR SITE PLAN FOR
**FORT MONMOUTH
LODGING TRACT**
BLOCK 110 PORTION OF LOT 1
BOROUGH OF OCEANPORT
MONMOUTH COUNTY, NEW JERSEY

SEAL

Mario J. Lannelli
No. GE41749
New Jersey Professional Engineer License No. GE41749



No.	DATE	BY	Description
3	07/09/2020	CFS	SITE PLAN SUBMISSION
2	02/28/2020	CFS	REVISE LAYOUT & SUBDIVISION
1	02/13/2020	CFS	REVISE LAYOUT
REVISIONS			
DRAWN BY: CFS/FD/JAZ			
APPROVED BY: MI			
CHECKED BY: CFS/ATR/MI			
DATE: 11/15/2019			
TITLE			

LAYOUT &
DIMENSION
CONTROL PLAN

PROJECT NO. 50110642

C-104

SHEET NO.

FOR GENERAL NOTES SEE SHEET C-102

Allen Street Elevation



Allen Street Typical Elevation

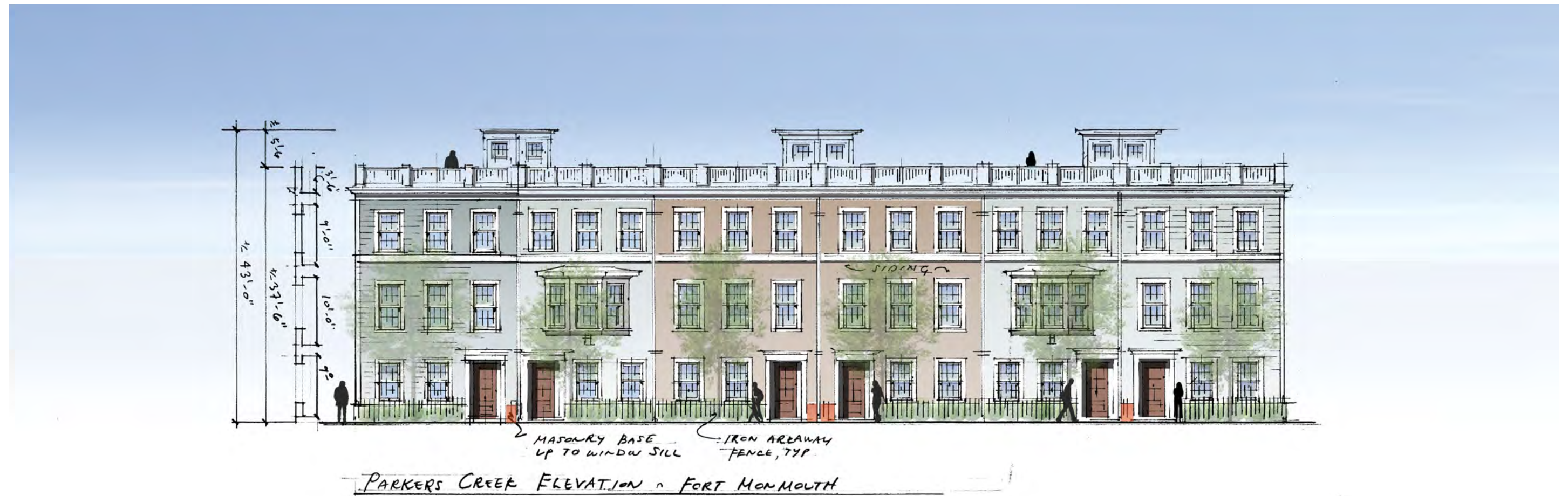
NTS
14 Dec 2018
Fort Monmouth
Somerset Development

Street "A" Elevation



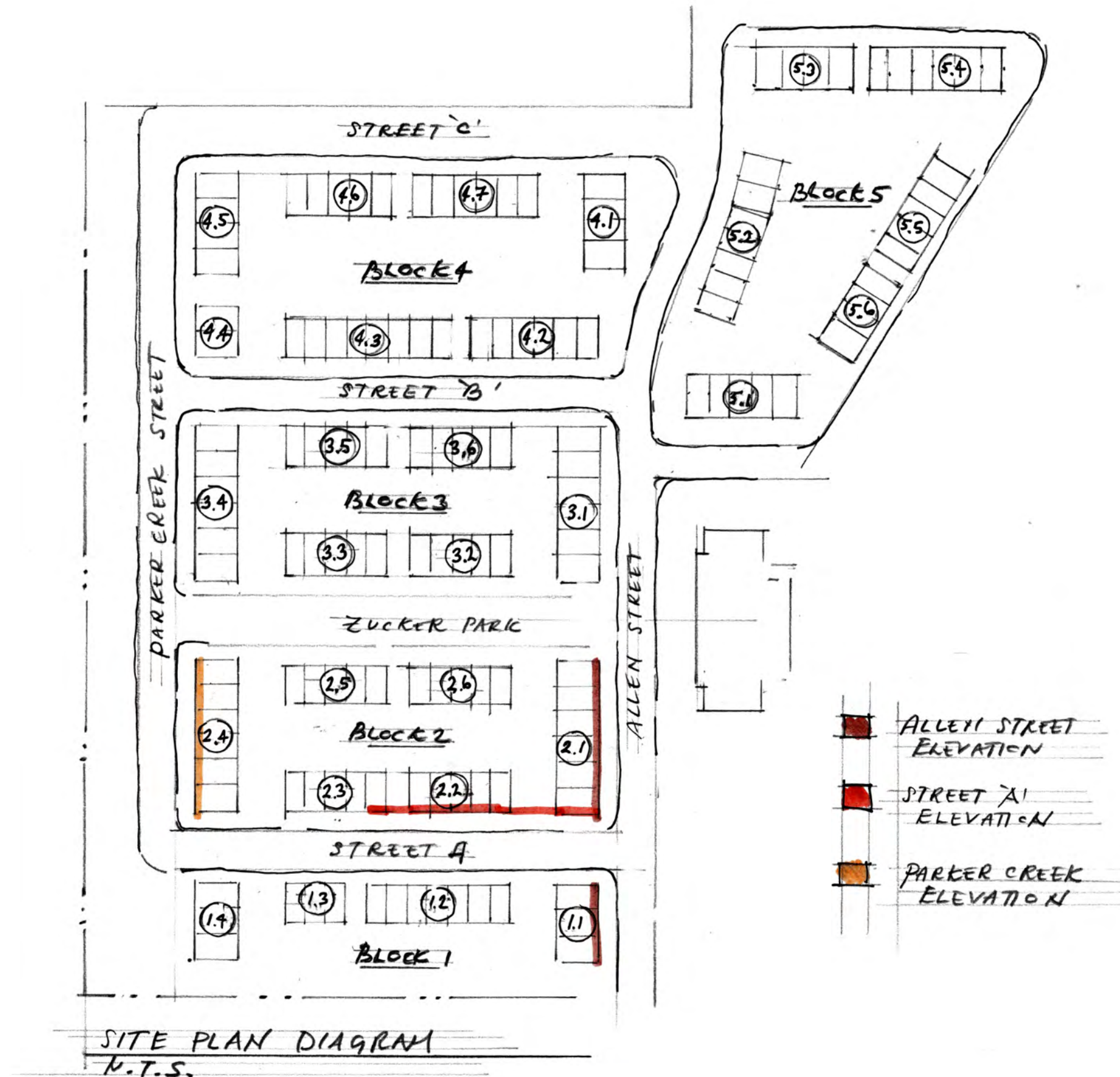
Street 'A' Typical Elevation

NTS
14 Dec 2018
Fort Monmouth
Somerset Development



Parkers Creek Typical Elevation

NTS
14 Dec 2018
Fort Monmouth
Somerset Development



TRAFFIC IMPACT STUDY

For

**Fort Monmouth Lodging Tract
Borough of Oceanport
Monmouth County, New Jersey**

Prepared For:

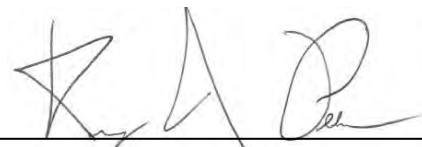
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**Revised 15 July 2020
3 March 2020
130136601**

LANGAN

Table of Contents

EXECUTIVE SUMMARY	1
INTRODUCTION	3
Project Description.....	3
Study Area	3
Scope of Study.....	4
DESCRIPTION OF EXISTING CONDITIONS	5
Roads.....	5
Oceanport Avenue (CR 11)	5
Saltzman Avenue / Hildreth Avenue (CR 537)	5
Russel Avenue (CR 537A)	5
Sanger Avenue.....	5
Intersections	5
Oceanport Avenue (CR 11) and Russel Avenue.....	5
Traffic Volumes	6
ESTIMATE OF FUTURE TRAFFIC CONDITIONS	7
Background Traffic Growth	7
No-Build Condition	7
Site-Generated Trips	8
Trip Distribution.....	8
Build Traffic Volumes	8
ANALYSIS OF TRAFFIC OPERATIONS.....	9
Level of Service Criteria	9
Capacity Analysis Without Allison Hall Redevelopment.....	10
Oceanport Avenue (CR 11) and Russel Avenue.....	10
Capacity Analysis Including Allison Hall Redevelopment	10
Oceanport Avenue (CR 11) and Russel Avenue.....	11
Oceanport Avenue (CR 11) and Signal Avenue.....	11
FINDINGS AND CONCLUSIONS.....	13

List of Figures

Figure 1 - Site Location Map
Figure 2 - 2019 Existing Traffic Volumes
Figure 3 - 2019 Base Traffic Volumes
Figure 4 - Squier Hall Traffic Volumes
Figure 5 - Allison Hall Traffic Volumes
Figure 6 - 2021 No-Build Traffic Volumes
Figure 7 - 2021 No-Build Traffic Volumes with Allison Hall
Figure 8 - Arrival & Departure Distributions
Figure 9 - Arrival & Departure Distributions with Allison Hall
Figure 10 - Site-Generated Trips
Figure 11 - Site-Generated Trips with Allison Hall
Figure 12 - 2021 Build Traffic Volumes
Figure 13 - 2021 Build Traffic Volumes with Allison Hall

List of Tables

Table 1 - Future Trip Generation Estimates
Table 2 - Trip Distribution
Table 3 - Intersection Capacity Analysis Summary
Table 4 - Intersection Capacity Analysis Summary with Allison Hall

Appendices

Appendix A - Figures
Appendix B - Traffic Counts
Appendix C - Timing Directive
Appendix D - Capacity Analysis Printouts

EXECUTIVE SUMMARY

Somerset Development, LLC, has retained Langan Engineering and Environmental Services to prepare a traffic impact study for a proposed redevelopment of the Fort Monmouth lodging tract. The project consists of the demolition of six buildings to be replaced by 144 market-rate townhomes and the renovation of Gardner Hall and Seriven Hall to provide 36 affordable housing apartments. The site is located in the Fort Monmouth Reuse Area in the Borough of Oceanport, Monmouth County, New Jersey.

The proposed redevelopment is located along Signal Avenue within the Fort Monmouth Reuse Area in the Borough of Oceanport. It is bordered by the Allison Hall section that abuts Oceanport Avenue to the east, residences on the west and south, and Parkers Creek on the west and north. The Fort Monmouth Reuse and Redevelopment Plan designates this portion of the Oceanport Reuse Area to contain medium-duty residential uses. Access to the site will be via street and driveway connections to the existing Signal, Bennet, and Carty Avenues. It is proposed that Signal Avenue will be gated for emergency access only at the western terminus with Allen Avenue to control regional cut-through traffic in the residential neighborhood. The Allison Hall area redevelopment, proposed by others, will extend Signal Avenue to intersect Oceanport Avenue. The project area is accessed via County Route 537, which was extended from Route 35 to the west thorough Fort Monmouth to Oceanport Avenue in the East. County Route 537 is aligned along Saltzman Avenue, accommodating two-way traffic. Monmouth County proposes redesigning the existing one-way southbound Sanger Avenue to provide two-way traffic between Russel Avenue and County Route 537.

Langan estimated the number of trips generated by the proposed redevelopment based on data compiled for Land Use Code 220 (Multifamily (Low-Rise)) by the Institute of Transportation Engineers (ITE) as contained in the publication Trip Generation, 10th Edition. Accordingly, Langan estimated that the proposed redevelopment will generate approximately 83 trips (19 enter, 64 exit) during the weekday morning peak hour and 100 trips (63 enter, 37 exit) during the weekday evening peak hour.

We determined the directional distribution of the site-generated trips for the proposed residential community based on an examination of demographic data, a journey-to-work model, and existing travel patterns in the study area.

For purposes of this report, we prepared future No Build and Build traffic projections both without and with the projected traffic and roadway links generated by the adjacent Allison Hall tract redevelopment. We conducted capacity analyses at the following intersections:

- Oceanport Avenue (County Route 11) and Russel Avenue
- Oceanport Avenue (CR 11) and Signal Avenue

We expect that the proposed residential redevelopment will not significantly impact area traffic operations during peak hours. Based on our analyses, we determined that the adjacent roadway network has sufficient capacity to accommodate the site-generated trips associated with the proposed redevelopment project. The existing Fort Monmouth roadway system will be utilized to provide circulation and connectivity to CR 537 which connects to the regional roadway system.

INTRODUCTION

Somerset Development, LLC, has retained Langan Engineering and Environmental Services to prepare a traffic impact study for a proposed redevelopment of the Fort Monmouth lodging tract, consisting of 144 market-rate townhomes and 36 affordable housing apartments. The site is located in the Fort Monmouth Reuse Area in the Borough of Oceanport, Monmouth County, New Jersey.

Project Description

The proposed redevelopment consists of the demolition of six buildings to be replaced by 144 market-rate townhomes and the renovation of Gardner Hall and Seriven Hall to provide 36 affordable housing apartments. The site is designated as Block 110, portion of Lot 1, according to Borough of Oceanport tax maps. The site location is shown in Figure 1.

The proposed redevelopment is located along Signal Avenue within the Fort Monmouth Reuse Area in the borough of Oceanport. It is bordered by the Allison Hall section that abuts Oceanport Avenue to the east, residences on the west and south, and Parkers Creek on the west and north. The Fort Monmouth Reuse and Redevelopment Plan designates this portion of the Oceanport Reuse Area to contain medium-duty residential uses. Access to the site will be via street and driveway connections to the existing Signal, Bennet, and Carty avenues. Monmouth County proposes redesigning Sanger Avenue to provide two-way traffic between Russel Avenue and County Route 537, which provides a direct connection to and from the regional roadway network. The proposed Allison Hall redevelopment will extend Signal Avenue to intersect Oceanport Avenue.

Study Area

We conducted capacity analyses at the following intersections:

- Oceanport Avenue (County Route 11) and Russel Avenue
- Oceanport Avenue (CR 11) and Signal Avenue

An inventory of the physical road conditions is presented in the section “Description of Existing Conditions.”

Scope of Study

Langan undertook the following steps to prepare this study in accordance with standard accepted methodologies:

1. Conducted a field examination of the site and surrounding road network to inventory physical and regulatory conditions, including the number of lanes, lane assignments, channelization, traffic-control devices, lateral clearances, and other factors that limit traffic capacity.
2. Obtained a series of turning movement traffic counts at the intersections identified in the previous section. We had counts conducted on a typical weekday from 7:00 AM to 9:00 AM and from 3:00 PM to 6:00 PM. We then identified the existing weekday morning and evening peak hour traffic volumes based on the traffic count data.
3. Established 2019 existing traffic volumes using the turning movement traffic counts.
4. Established 2021 base traffic volumes by applying the New Jersey Department of Transportation (NJDOT) Monmouth County growth factor of 1.0 percent per year to the existing traffic volumes.
5. Obtained information on current developments by others in the study area and added projected traffic generated from the adjacent developments to the 2021 base traffic volumes to establish the 2021 No-Build traffic volumes.
6. Prepared trip generation estimates for the proposed development based on accepted trip rates developed by the Institute of Transportation Engineers (ITE).
7. Developed trip distribution for the development based on existing and expected travel patterns and Census journey-to-work data.
8. Assigned site-generated trips to the driveways and surrounding road network based on the likely travel routes motorists will use to travel to and from the redevelopment.
9. Established future 2021 Build traffic volumes by adding site-generated trips to the 2021 No-Build traffic volumes.
10. Performed intersection capacity analyses for the weekday morning and evening peak hours using the latest Synchro software.

DESCRIPTION OF EXISTING CONDITIONS

The following is a description of the roads, intersections, and traffic volumes in the area of the proposed redevelopment in the Borough of Oceanport, Monmouth County, New Jersey.

Roads

Oceanport Avenue (CR 11)

Oceanport Avenue is classified as an urban minor arterial and is under Monmouth County jurisdiction. The roadway has a general north-south orientation and provides one travel lane in each direction in the vicinity of the redevelopment. The posted speed limit in the immediate study area is 35 mph.

Saltzman Avenue / Hildreth Avenue (CR 537)

County Route 537 is classified as an urban minor arterial and is under Monmouth County jurisdiction. The roadway has a general east-west orientation and provides one travel lane in each direction. The posted speed limit is 25 mph.

Russel Avenue (CR 537A)

Russel Avenue is a local road. The roadway has a general east-west orientation. Between Hildreth and Sanger avenues, Russel Avenue is a one-way westbound roadway providing one thru lane. West of Sanger Avenue, Russel Avenue provides one travel lane in each direction. The posted speed limit is 25 mph.

Sanger Avenue

Sanger Avenue will be a County road. The roadway has a general north-south orientation. Sanger Avenue is a one-way southbound roadway providing one thru lane. Monmouth County proposes to redesign the roadway to provide two-way operation with one travel lane in each direction. The posted speed limit is 25 mph.

Intersections

Oceanport Avenue (CR 11) and Russel Avenue

Russel Avenue intersects Oceanport Avenue to form a T-shaped intersection under signal control. The eastbound Russel Avenue approach provides one left-turn lane and one channelized right-turn lane. The northbound Oceanport Avenue approach provides one left-turn lane and one thru lane. The southbound Oceanport Avenue approach provides one thru lane and one right-turn lane. The traffic signal operates under three phases with a 70-second cycle length.

Traffic Volumes

We arranged for turning movement counts to be conducted during the morning and evening peak periods on a typical weekday at the study intersections to examine traffic conditions near the redevelopment. Specifically, turning movement counts were conducted on Tuesday, 24 September 2019, from 7:00 AM to 9:00 AM and from 3:00 PM to 6:00 PM.

The traffic counts identify distinct times during the weekday morning and evening when traffic experienced its highest levels on the network. We determined that the weekday morning peak hour occurred from 7:45 AM to 8:45 AM and the weekday evening peak hour occurred from 4:30 PM to 5:30 PM. Figure 2 illustrates the existing weekday morning and evening peak hour traffic volumes. Summaries of the traffic counts are contained in Appendix B.

ESTIMATE OF FUTURE TRAFFIC CONDITIONS

This section of the report covers background traffic growth, site-generated trips, trip distribution, and future traffic volumes. We anticipate the redevelopment will be completed by the end of 2021. Accordingly, we projected traffic volumes to include existing traffic and new traffic created by background growth to derive the 2021 base traffic volumes. We took into account adjacent developments and added the traffic to the 2021 base traffic volumes to establish the 2021 No-Build traffic volumes. We then added the site-generated trips to the 2021 No-Build traffic volumes to derive the 2021 Build traffic volumes.

Background Traffic Growth

We increased the existing peak hour traffic volumes by compounding the annual growth rate of 1.00 established by the New Jersey Department of Transportation (NJDOT) for Monmouth County for short-term growth projections, to derive the 2021 base traffic volumes. Figure 3 illustrates the 2021 base weekday morning and evening peak hour traffic volumes.

No-Build Condition

In addition to general background growth, there are prior approvals for redevelopment within the study area that will influence traffic on the surrounding roadway network. The Squier Hall redevelopment includes the renovation of an existing structure to be the location of a Jersey City University campus. In preparing the future traffic projections, we have included the traffic associated with the unconstructed space on the study intersections. Traffic associated with this redevelopment was derived from its traffic study. The traffic from the Squier Hall redevelopment is shown in Figure 4.

There are proposals by others to redevelop the adjacent Allison Hall tract that will influence traffic on the surrounding roadway network. The Allison Hall redevelopment includes the demolition and renovation of existing structures resulting in general offices, medical offices, light industrial and retail space, and a hotel. Traffic associated with this redevelopment was derived from its traffic study. We have included the Allison Hall redevelopment traffic volumes in a second No-Build condition. The traffic from the Allison Hall redevelopment is shown in Figure 5.

The adjacent development traffic volumes were added to the 2019 base traffic volumes to develop the 2021 No-Build traffic volumes. No-Build traffic volumes including Squier Hall are shown in Figure 6. Figure 7 shows the No-Build traffic volumes including Squier Hall and Allison Hall.

Site-Generated Trips

We prepared trip generation estimates for the proposed development using data compiled for Land Use Code 220 (Multifamily Housing (Low-Rise)) by the Institute of Transportation Engineers (ITE) as contained in Trip Generation, 10th Edition. Table 1 summarizes the future trip generation estimates for the proposed residential redevelopment.

Table 1 – Future Trip Generation Estimates

Use	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
	In	Out	Total	In	Out	Total
180 Multifamily Housing Units	19	64	83	63	37	100

Trip Distribution

We determined the directional distributions of the site-generated trips based on existing and expected travel patterns in the study area, the location of area highways and major intersections, demographic data, and surrounding population locations. The distributions were determined using Census journey-to-work data to develop a model for people live in the Borough of Oceanport. From the demographic data, we estimated the likely routes traffic would utilize. The directional distribution of site traffic is shown in Table 2.

Table 2 – Trip Distribution

Direction (To/From)	Arrival & Departure Distributions
Oceanport Avenue (North)	25%
Oceanport Avenue (South)	35%
Sherrill Avenue (West)	40%
Total	100%

The arrival and departure distributions associated with the proposed redevelopment are shown in Figures 8 and 9. The site-generated trips were then applied to the adjacent roadway system as per the above distributions. The total site-generated trips are shown in Figures 10 and 11.

Build Traffic Volumes

We derived the 2021 Build traffic volumes by adding the total site-generated trips to the 2021 No-Build traffic volumes. Figures 12 and 13 show the 2021 Build weekday morning and evening peak hour traffic volumes.

ANALYSIS OF TRAFFIC OPERATIONS

This section describes the capacity analysis we conducted to assess traffic operations for the No-Build and Build conditions. Capacity analysis provides an indication of the adequacy of road facilities to serve traffic demand.

Level of Service Criteria

Level of Service (LOS) is the term used to denote different operating conditions that occur on a given road segment under various traffic volume demands. LOS is a qualitative measure that considers a number of factors including road geometry, speed, travel delay and freedom to maneuver. LOS designations range from A to F and provide an index of operational qualities of a road segment or an intersection. LOS A represents the best operating conditions; LOS F represents the worst.

LOS designations are reported differently for signalized and unsignalized intersections. For signalized intersections, the analysis considers the operation of all traffic entering the intersection. For unsignalized intersections, the analysis considers the operation of all movements that conflict with other movements, such as main-line left turns and traffic exiting a side street. The evaluation criteria used to analyze the study area intersections are based on the Highway Capacity Manual, 6th Edition, (HCM), published by the Transportation Research Board and the latest version of the Synchro software.

The HCM defines LOS for signalized intersections as follows:

<u>LOS</u>	<u>Control Delay per Vehicle</u>
A	<10 sec
B	>10 and ≤20 sec
C	>20 and ≤35 sec
D	>35 and ≤55 sec
E	>55 and ≤80 sec
F	>80 sec

The HCM defines LOS for unsignalized intersections as follows:

<u>LOS</u>	<u>Delay Range (sec/veh)</u>
A	≤10 sec
B	>10 and ≤15 sec
C	>15 and ≤25 sec
D	>25 and ≤35 sec
E	>35 and ≤50 sec
F	>50 sec

Capacity Analysis Without Allison Hall Redevelopment

We conducted capacity analyses for the intersections in the study area and found that the proposed residential redevelopment will not significantly alter traffic operations in the area. Table 3 summarizes the 2021 No-Build and Build levels of service (LOS) at each relevant study intersection during the weekday morning and evening peak hours. The following are discussions pertaining to each of the intersections analyzed for the project. The worksheets for the capacity analyses are included in Appendix D.

Table 3 – Intersection Capacity Analysis Summary

Location	Movement	2021 No-Build Condition		2021 Build Condition		
		AM	PM	AM	PM	
Signalized Intersections						
Oceanport Avenue (CR 11) and Russel Avenue (CR 537)	EB	L	C (30.4)	C (26.0)	C (31.0)	C (26.8)
		R	C (28.6)	C (31.7)	C (30.4)	C (33.7)
	NB	L	A (5.9)	A (7.4)	A (6.4)	A (8.5)
		T	B (10.3)	B (10.5)	B (10.8)	B (10.5)
	SB	T	B (19.8)	C (27.5)	C (20.5)	C (31.4)
		R	A (3.6)	A (3.7)	A (3.6)	A (3.8)
	Overall		B (14.5)	B (18.5)	B (15.4)	C (20.0)

*Level of Service (Average vehicle delay [seconds per vehicle])

Oceanport Avenue (CR 11) and Russel Avenue

The signalized intersection is expected to operate at an overall LOS B during both the weekday morning and evening peak hours under the No-Build condition. Under the Build condition, the intersection is expected to operate at an overall LOS B during both the weekday morning peak hour and an overall LOS C during the weekday evening peak hour. The operation of this intersection will need to be revisited as the redevelopment program of Fort Monmouth east of Oceanport Avenue is progressed.

Capacity Analysis Including Allison Hall Redevelopment

We conducted additional capacity analyses for the intersections in the study area including the proposed Allison Hall redevelopment and found that the proposed residential redevelopment will not significantly alter traffic operations in the area. Table 4 summarizes the 2020 No-Build and Build levels of service (LOS) at each relevant study intersection during the weekday morning and evening peak hours. The following are discussions pertaining to each of the intersections analyzed for the project.

Table 4 – Intersection Capacity Analysis Summary with Allison Hall

Location	Movement	2021 No-Build Condition		2021 Build Condition		
		AM	PM	AM	PM	
Signalized Intersections						
Oceanport Avenue (CR 11) and Russel Avenue (CR 537)	EB	L	C (30.8)	C (31.1)	C (31.0)	C (31.0)
		R	C (27.8)	C (33.1)	C (28.2)	C (33.4)
	NB	L	A (6.4)	B (12.7)	A (6.7)	B (13.4)
		T	B (11.4)	B (10.6)	B (11.6)	B (10.9)
	SB	T	C (21.3)	D (46.4)	C (22.4)	D (49.7)
		R	A (3.6)	A (3.8)	A (3.7)	A (3.8)
	Overall		B (15.3)	C (25.7)	B (15.9)	C (26.9)
Unsignalized Intersections						
Oceanport Avenue (CR 11) and Signal Avenue	EB	L	E (37.2)	F (80.5)	E (43.2)	F (115.3)
		R	B (12.8)	C (17.1)	B (13.2)	C (17.7)
	NB	L	A (9.0)	B (10.1)	A (9.1)	B (10.3)

*Level of Service (Average vehicle delay [seconds per vehicle])

Oceanport Avenue (CR 11) and Russel Avenue

The signalized intersection is expected to operate at an overall LOS B during the weekday morning peak hour and an overall LOS C during the weekday evening peak hour under the No-Build condition. Under the Build condition, the intersection is expected to continue to operate at an overall LOS B during both the weekday morning peak hour and an overall LOS C during the weekday evening peak hour. The operation of this intersection will need to be revisited as the redevelopment program of Fort Monmouth east of Oceanport Avenue is progressed.

Oceanport Avenue (CR 11) and Signal Avenue

Geometry

As part of the Allison Hall redevelopment, Signal Avenue is proposed to extend to Oceanport Avenue to form a T-shaped intersection under stop-control. The eastbound Signal Avenue approach will provide one left-turn lane and one right-turn lane and will be stop-controlled. The northbound Oceanport Avenue approach will provide one shared left-turn/thru lane. The southbound Oceanport Avenue approach will provide one shared thru/right-turn lane.

Analysis

All turning movements at the stop-controlled intersection are expected to operate at LOS E or better during both the weekday morning and evening peak hours under the No-Build condition, with the exception of the eastbound left-turn movement, which is expected to operate at LOS F with a volume to capacity ratio of 0.684 during the weekday evening peak hour. Under the Build condition, all turning movements are expected to continue to operate at similar levels of service.

The 95th percentile queue for the eastbound left-turn movement increases by less than one vehicle under the Build condition with a projected 95th percentile queue of 3 vehicles during the PM peak hour for the left turn movement and one vehicle during the morning peak hour. It is noted that the adjacent traffic signal at Russel Avenue will introduce regular gaps in the traffic stream that will result in better operations than projected by the analyses. It is noted that Monmouth County may want to consider striping of Oceanport Avenue to provide a center turn lane along this section depending upon future access proposals to the east side redevelopment parcel. A center turn lane would assist both left turns entering Signal Avenue as well as left turns exiting Signal Avenue.

FINDINGS AND CONCLUSIONS

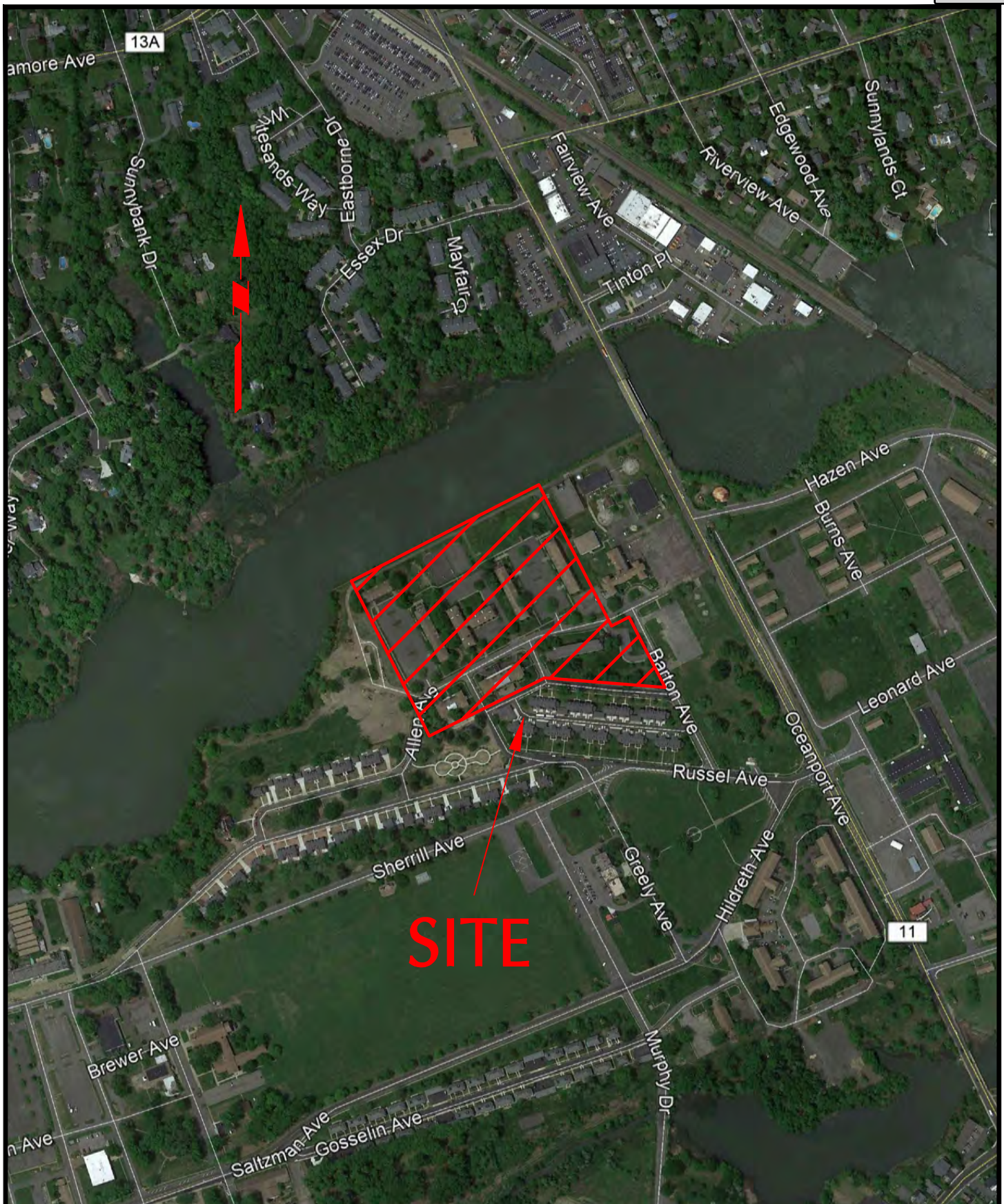
Langan has concluded that the proposed redevelopment of the Fort Monmouth lodging tract will not significantly impact area traffic operations during peak hours. Access to the site will be via the existing Fort Monmouth roadway network, including Signal Avenue, Bennet Avenue, Carty Avenue, and Barton Avenue. It is proposed that Signal Avenue will be gated for emergency access only at the western terminus with Allen Avenue to control regional cut-through traffic in the residential neighborhood. The Allison Hall area redevelopment, proposed by others, will extend Signal Avenue to intersect Oceanport Avenue.

The project area is accessed via County Route 537 which was extended from Route 35 to the west thorough Fort Monmouth to Oceanport Avenue in the East. County Route 537 is aligned along Saltzman Avenue, accommodating two-way traffic. Monmouth County proposes redesigning the existing one-way southbound Sanger Avenue to provide two-way traffic between Russel Avenue and County Route 537.

Based on our analyses, we determined that the adjacent roadway network has sufficient capacity to accommodate the site-generated trips associated with the proposed redevelopment project. Moreover, the proposed access is expected to operate acceptably during peak traffic hours.

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APPENDIX A FIGURES


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NJ Certificate of Authorization No.24GA27996400

Project

**SOMERSET
FOR MONMOUTH**

 BLOCK No. 110,
PORTION OF LOT No. 1
BOROUGH OF OCEANPORT
MONMOUTH COUNTY NEW JERSEY

Drawing Title

**SITE
LOCATION
MAP**

Project No.

130136601

Date 2/26/2020

REVISED 6/24/2020

Drawn By

JEG

Checked By

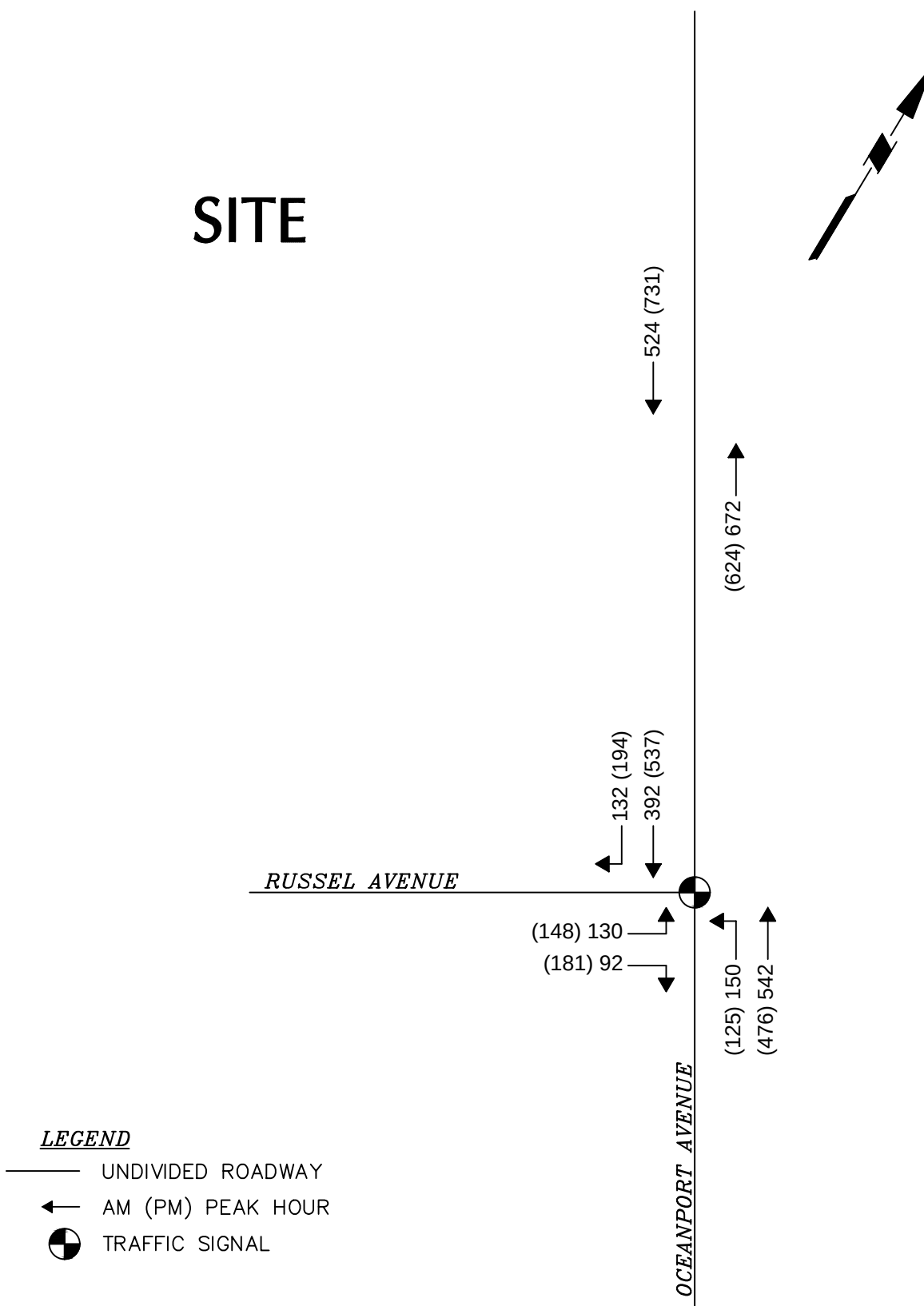
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Drawing No.

FIGURE
1

Sheet 1 of 13

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**SOMERSET
FOR MONMOUTH**

BLOCK No. 110,
PORTION OF LOT No. 1
BOROUGH OF OCEANPORT
MONMOUTH COUNTY NEW JERSEY

Drawing Title

**2019 EXISTING
TRAFFIC VOLUMES**

Project No.

130136601

Date 2/26/2020

REVISED 6/24/2020

Drawn By

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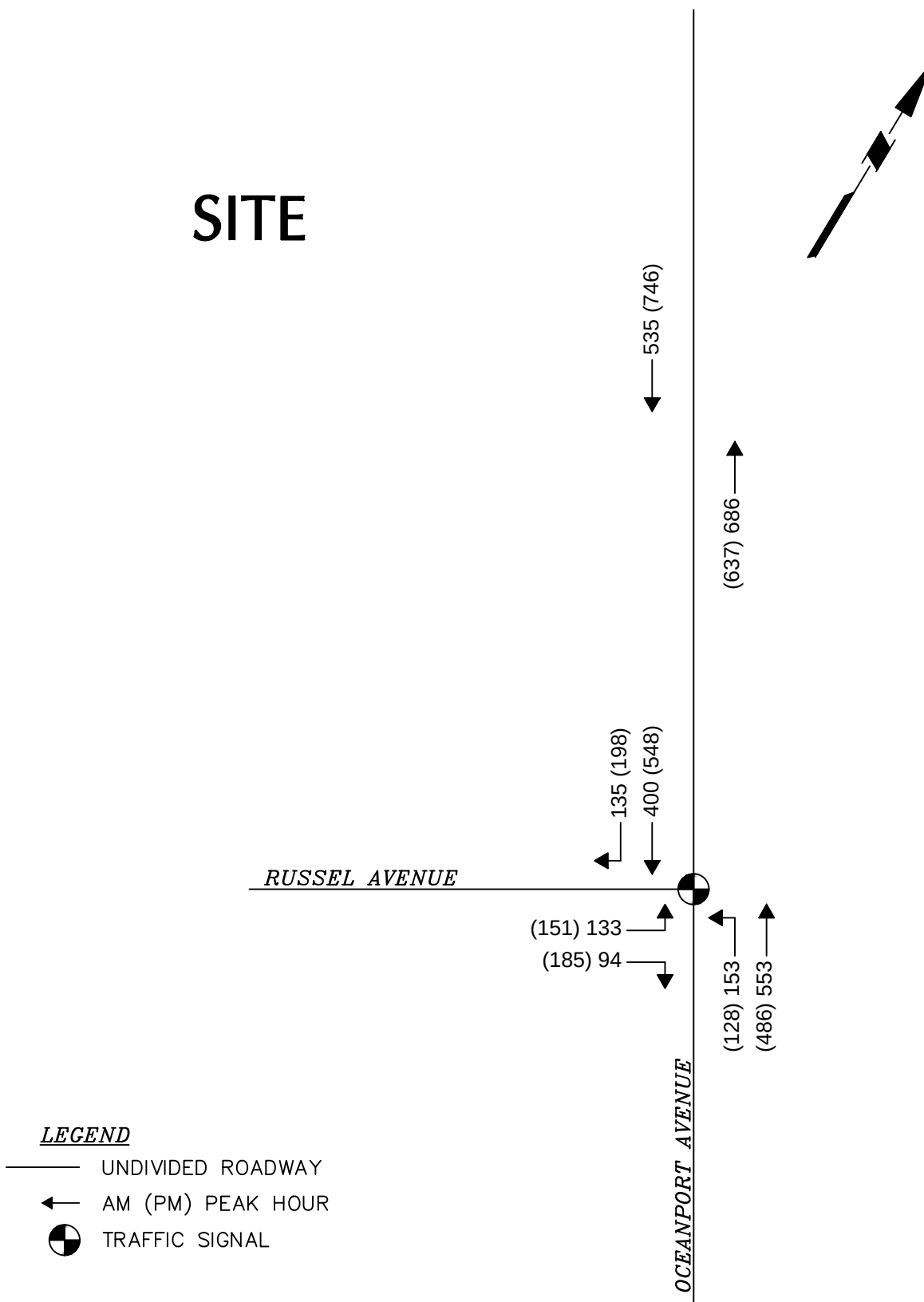
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**FIGURE
2**

Sheet 2 of 13

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MONMOUTH COUNTY NEW JERSEY

Drawing Title

**2019 BASE
TRAFFIC VOLUMES**

Project No.

130136601

Date 2/26/2020
REVISED 6/24/2020

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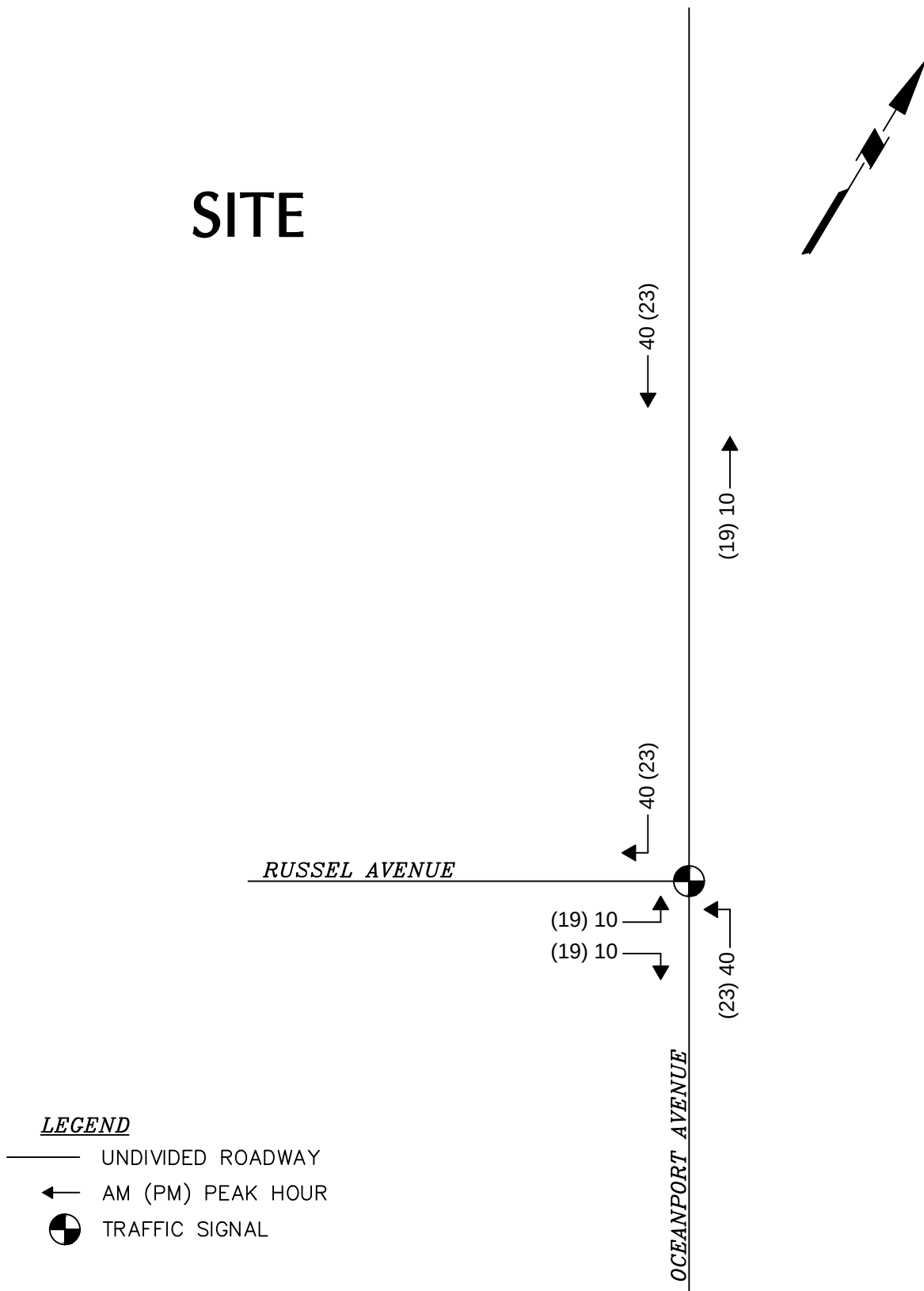
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**FIGURE
3**

Sheet 3 of 13

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**SOMERSET
FOR MONMOUTH**

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BOROUGH OF OCEANPORT
MONMOUTH COUNTY NEW JERSEY

Drawing Title

**SQUIER HALL
TRAFFIC VOLUMES**

Project No.

130136601

Date 2/26/2020
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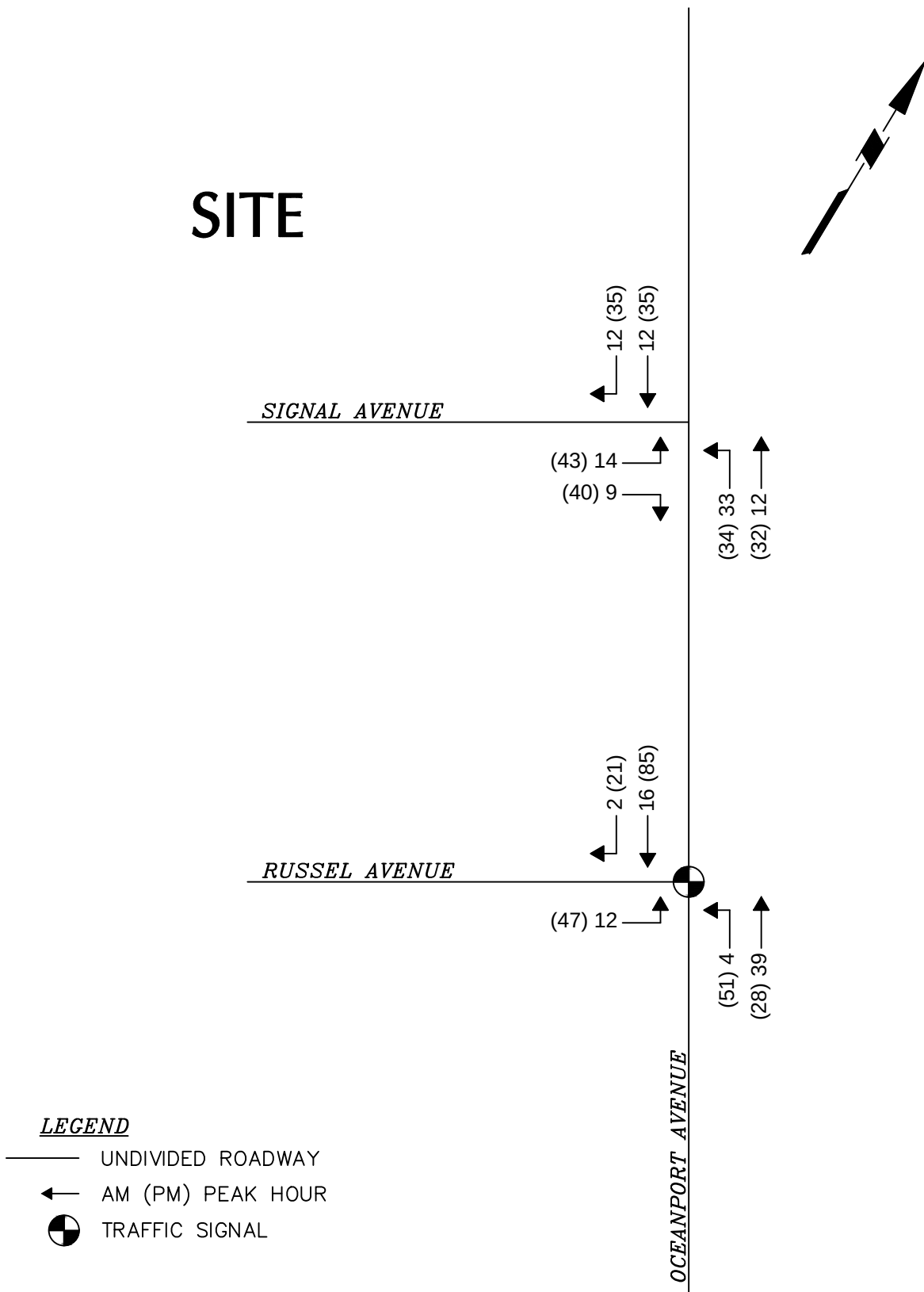
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**FIGURE
4**

Sheet 4 of 13

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MONMOUTH COUNTY NEW JERSEY

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**ALLISON HALL
TRAFFIC VOLUMES**

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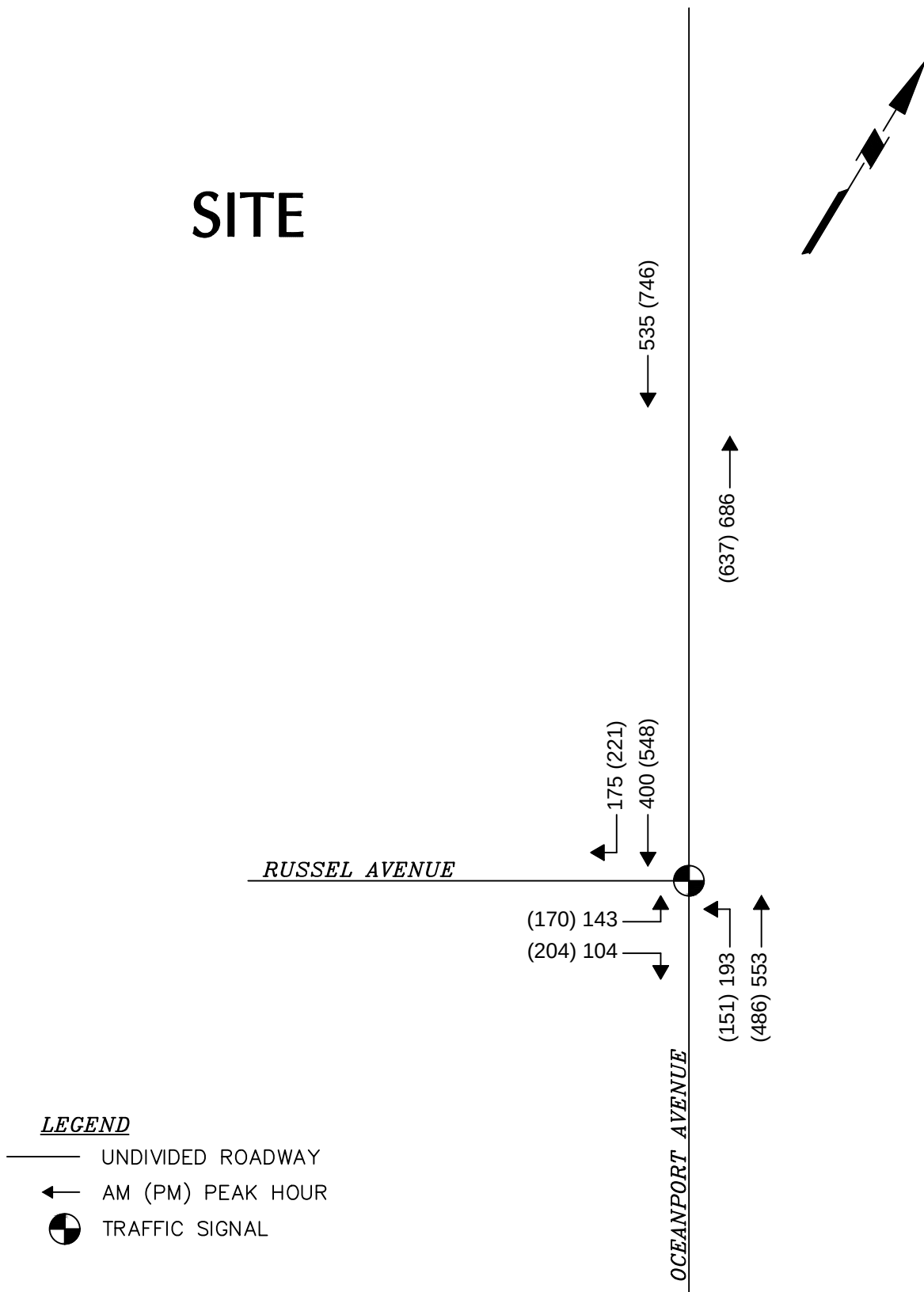
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**FIGURE
5**

Sheet 5 of 13

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FOR MONMOUTH**

BLOCK No. 110,
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BOROUGH OF OCEANPORT
MONMOUTH COUNTY NEW JERSEY

Drawing Title

**2021 NO-BUILD
TRAFFIC VOLUMES**

Project No.

130136601

Date 2/26/2020
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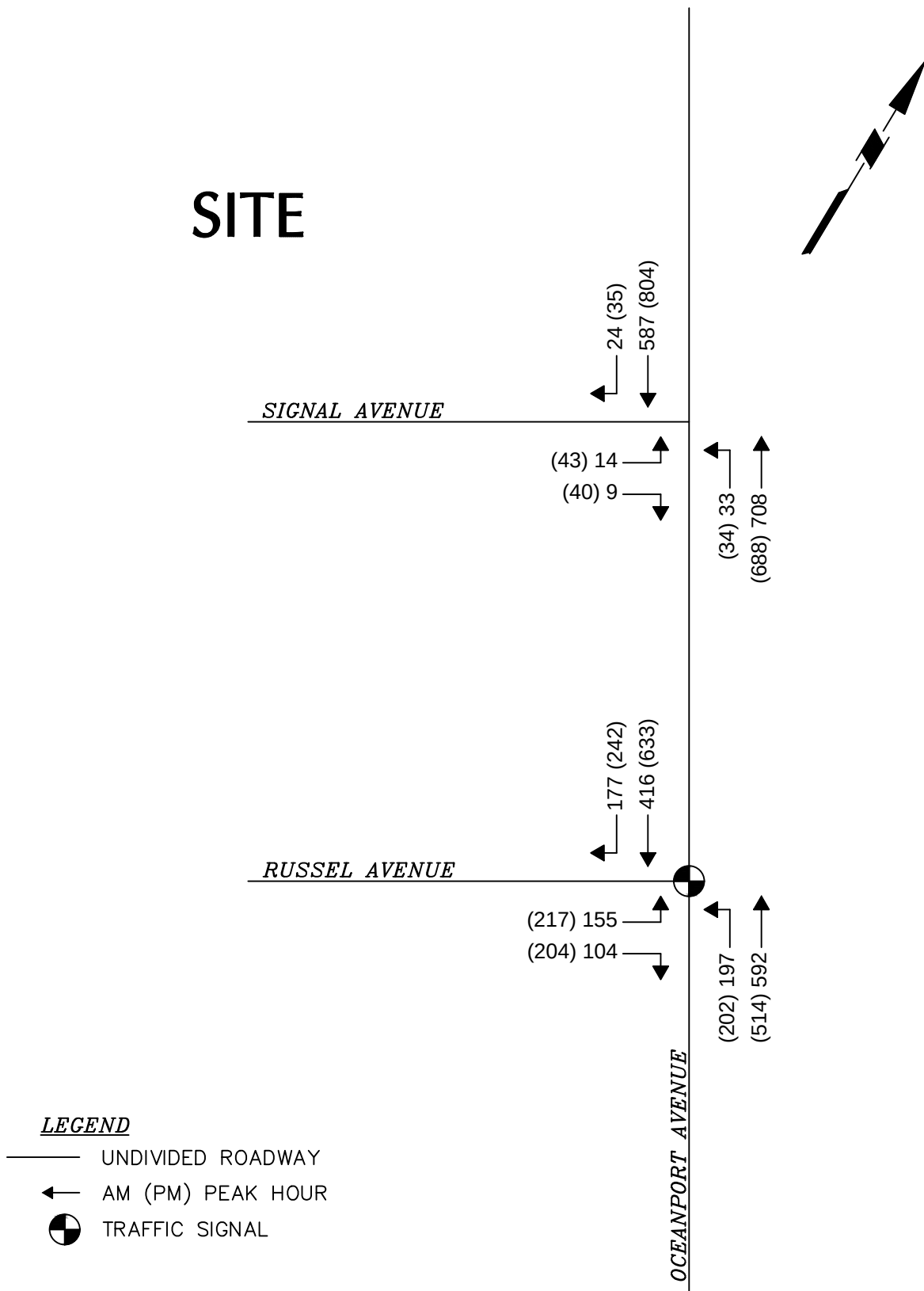
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**FIGURE
6**

Sheet 6 of 13

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BOROUGH OF OCEANPORT
MONMOUTH COUNTY NEW JERSEY

Drawing Title

2021 NO-BUILD TRAFFIC VOLUMES WITH ALLISON HALL

Project No.

130136601

Date 2/26/2020
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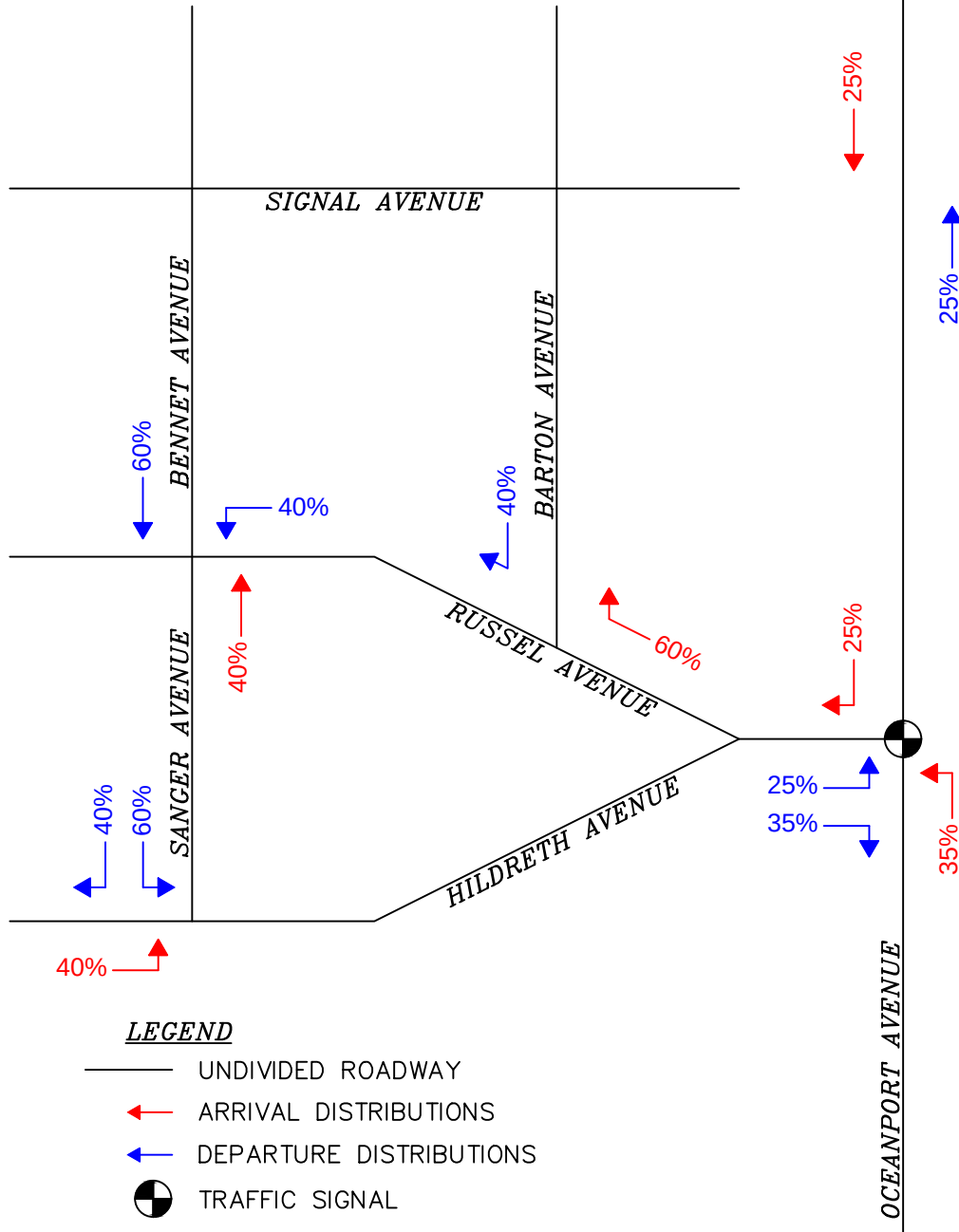
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FIGURE

7

Sheet 7 of 13

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**SOMERSET
FOR MONMOUTH**

BLOCK No. 110,
PORTION OF LOT No. 1
BOROUGH OF OCEANPORT
MONMOUTH COUNTY NEW JERSEY

Drawing Title

**ARRIVAL &
DEPARTURE
DISTRIBUTIONS**

Project No.

130136601

Date 2/26/2020
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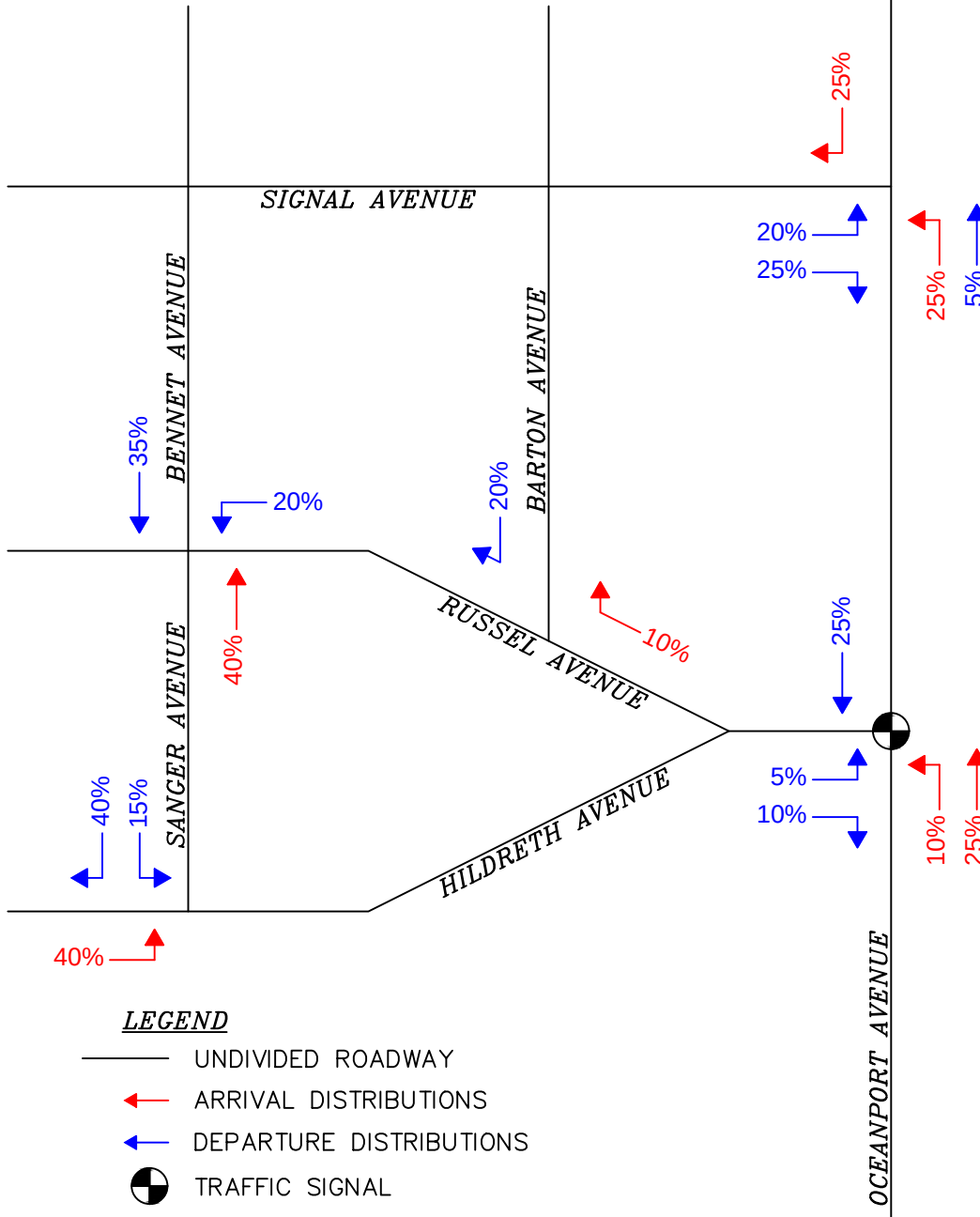
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**FIGURE
8**

Sheet 8 of 13

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Project

**SOMERSET
FOR MONMOUTH**

BLOCK No. 110,
PORTION OF LOT No. 1
BOROUGH OF OCEANPORT
MONMOUTH COUNTY NEW JERSEY

Drawing Title

**ARRIVAL &
DEPARTURE
DISTRIBUTIONS
WITH ALLISON HALL**

Project No.

130136601

Date 2/26/2020
REVISED 6/24/2020

Drawn By

JEG

Checked By

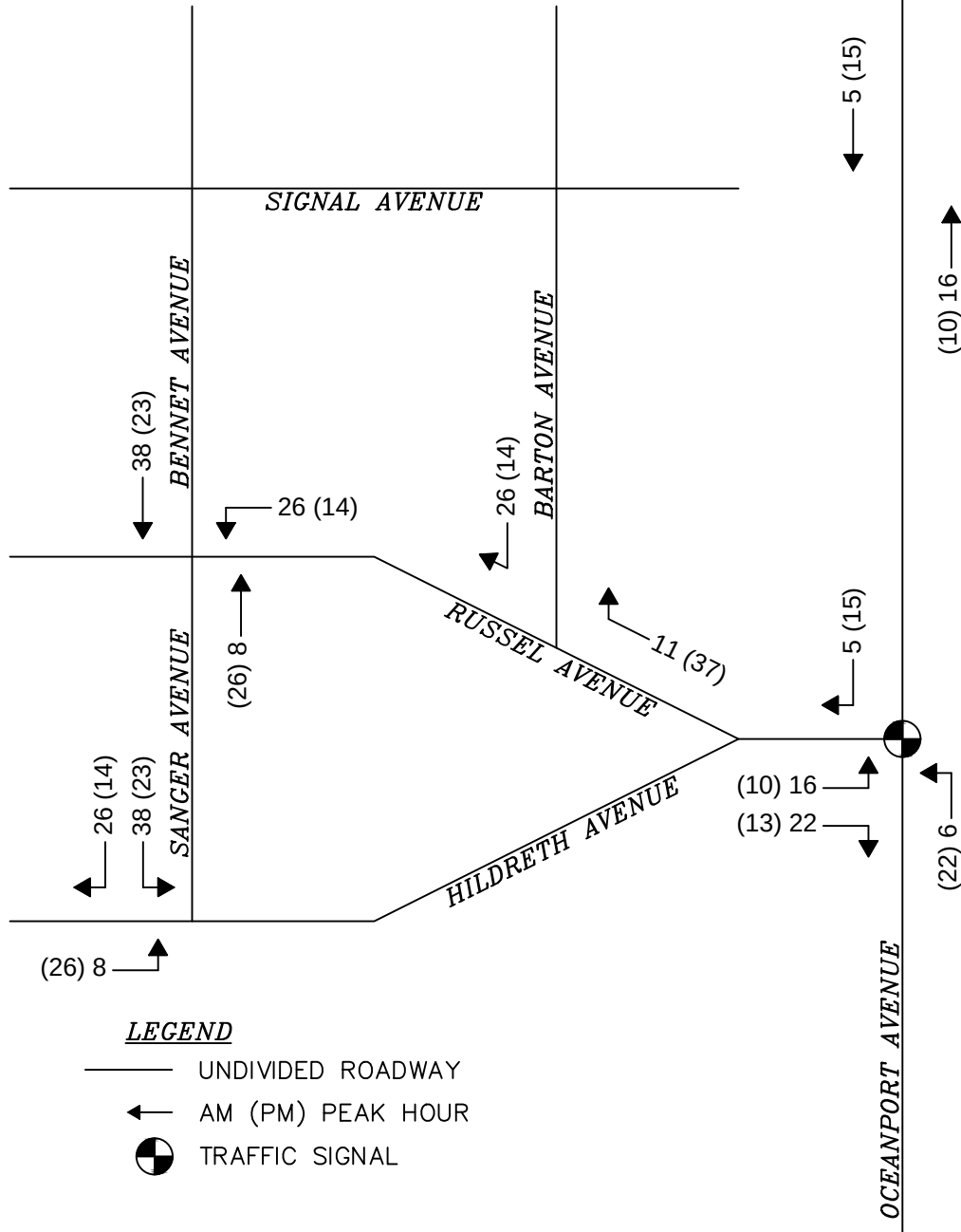
KAP

Drawing No.

**FIGURE
9**

Sheet 9 of 13

SITE



LANGAN

Langan Engineering and
Environmental Services, Inc.
989 Lenox Drive, Suite 124
Lawrenceville, NJ 08648
T: 609.282.8000 F: 609.282.8001 www.langan.com
NJ Certificate of Authorization No.24GA27996400

Project

**SOMERSET
FOR MONMOUTH**

BLOCK No. 110,
PORTION OF LOT No. 1
BOROUGH OF OCEANPORT
MONMOUTH COUNTY NEW JERSEY

Drawing Title

**SITE-GENERATED
TRIPS**

Project No.

130136601

Date 2/26/2020

REVISED 6/24/2020

Drawn By

JEG

Checked By

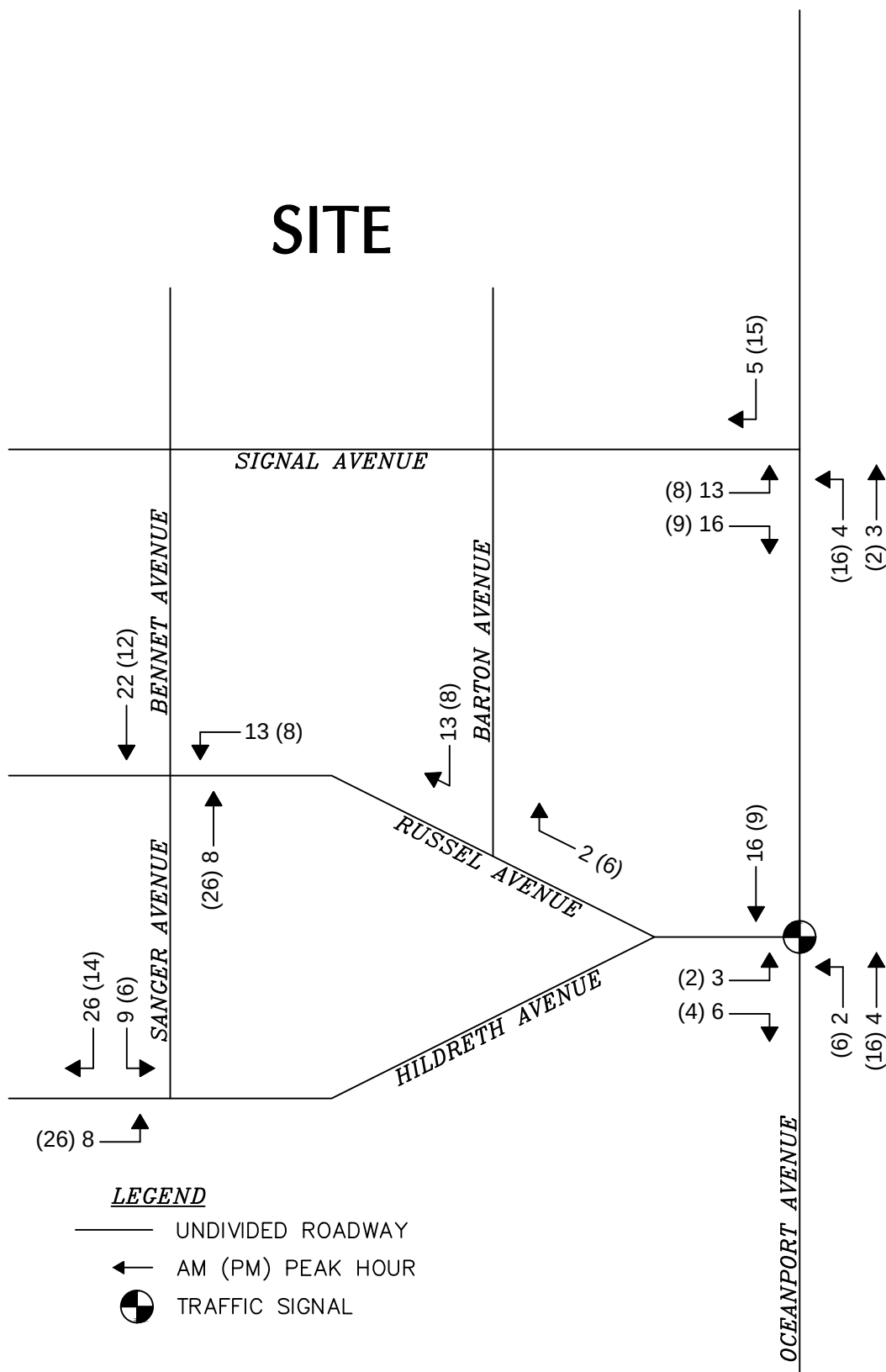
KAP

Drawing No.

**FIGURE
10**

Sheet 10 of 13

SITE



LANGAN

Langan Engineering and
Environmental Services, Inc.
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Project

**SOMERSET
FOR MONMOUTH**

BLOCK No. 110,
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MONMOUTH COUNTY NEW JERSEY

Drawing Title

**SITE-GENERATED
TRIPS
WITH ALLISON HALL**

Project No.

130136601

Date 2/26/2020
REVISED 6/24/2020

Drawn By

JEG

Checked By

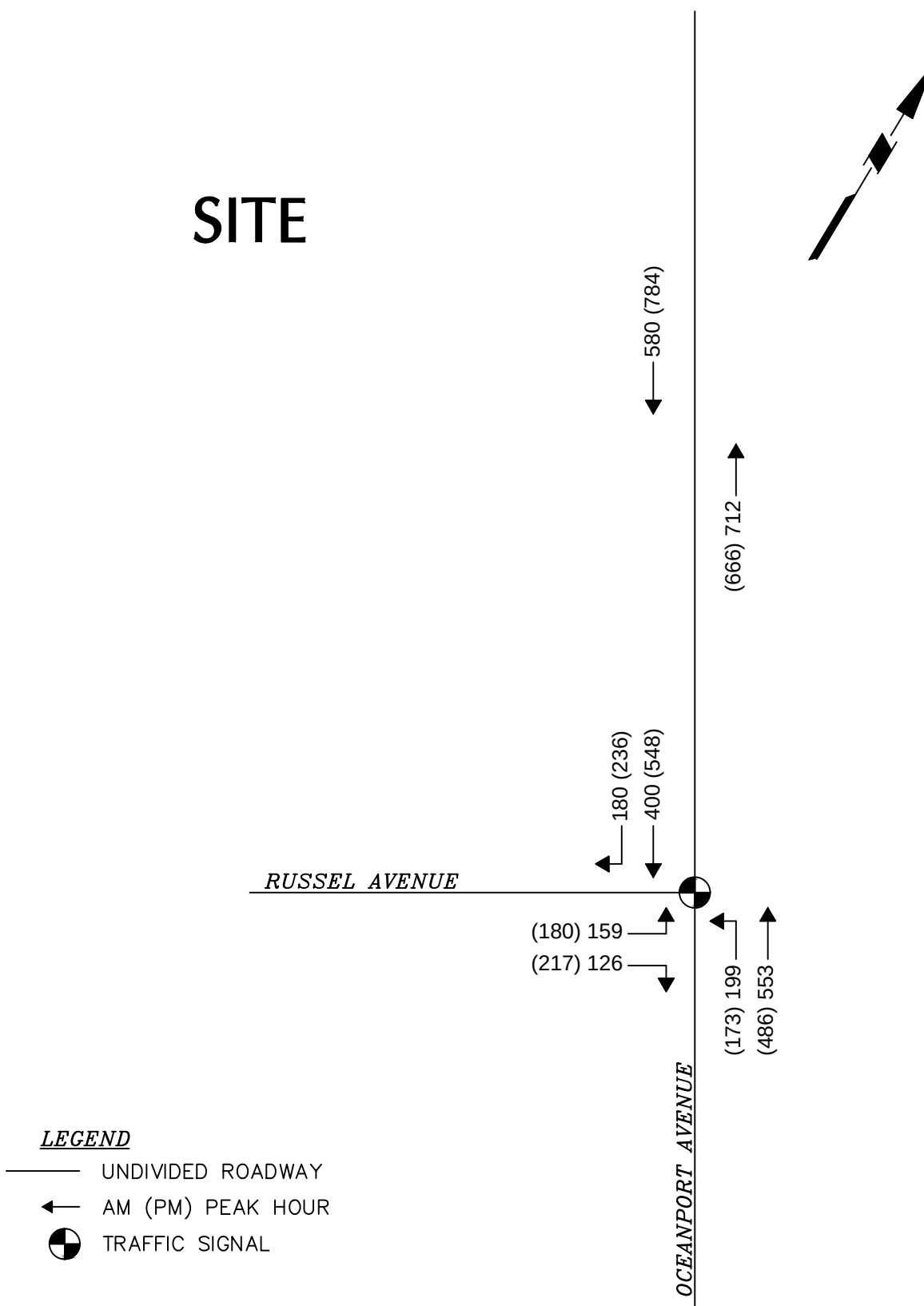
KAP

Drawing No.

**FIGURE
11**

Sheet 11 of 13

SITE



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Lawrenceville, NJ 08648
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NJ Certificate of Authorization No.24GA27996400

Project

**SOMERSET
FOR MONMOUTH**

BLOCK No. 110,
PORTION OF LOT No. 1
BOROUGH OF OCEANPORT
MONMOUTH COUNTY NEW JERSEY

Drawing Title

**2021 BUILD
TRAFFIC VOLUMES**

Project No.

130136601

Date 2/26/2020

REVISED 6/24/2020

Drawn By

JEG

Checked By

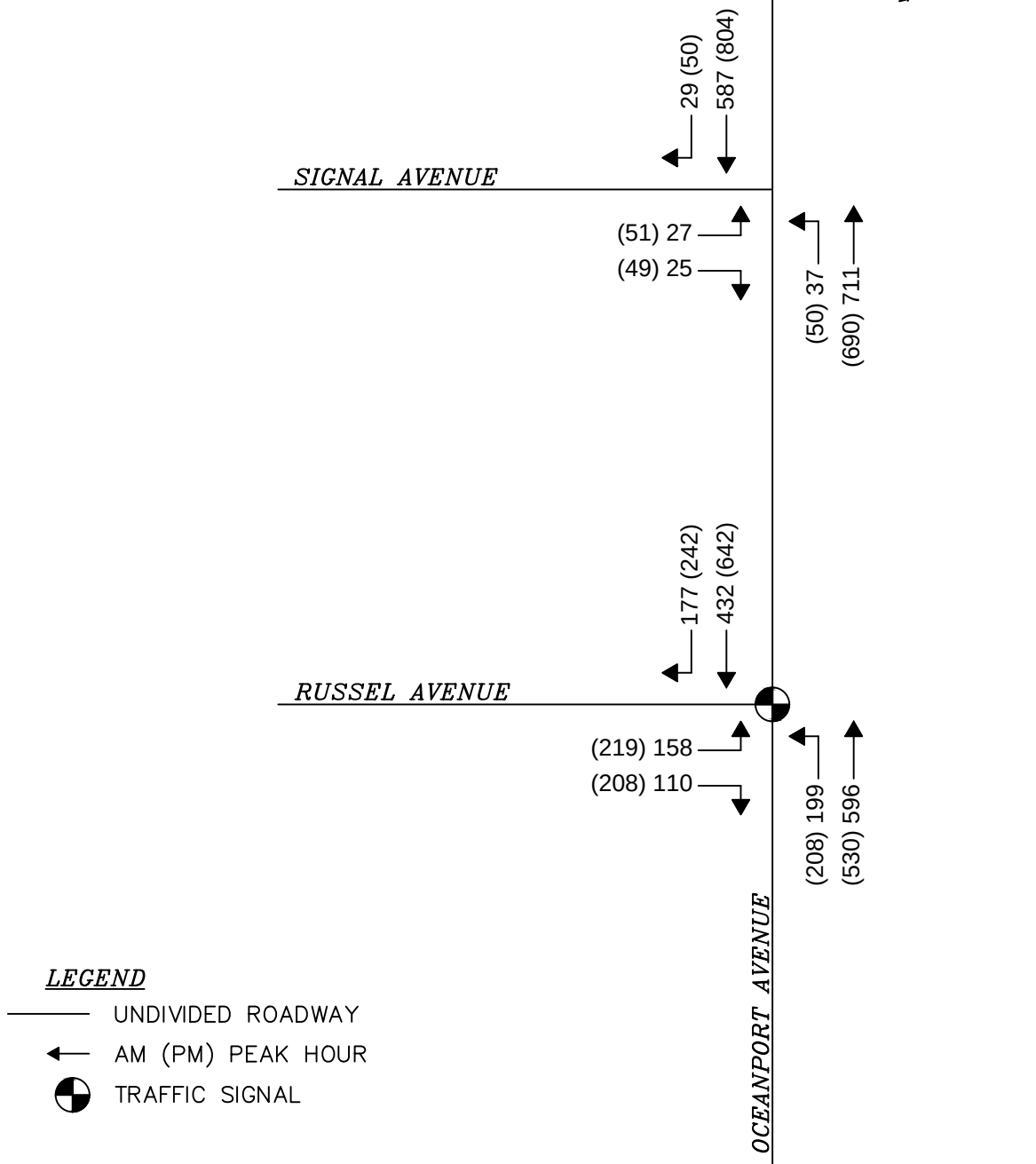
KAP

Drawing No.

**FIGURE
12**

Sheet 12 of 13

SITE



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Environmental Services, Inc.
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Lawrenceville, NJ 08648
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Project

**SOMERSET
FOR MONMOUTH**

BLOCK No. 110,
PORTION OF LOT No. 1
BOROUGH OF OCEANPORT
MONMOUTH COUNTY NEW JERSEY

Drawing Title

**2021 BUILD
TRAFFIC VOLUMES
WITH ALLISON HALL**

Project No.

130136601

Date 2/26/2020
REVISED 6/24/2020

Drawn By

JEG

Checked By

KAP

Drawing No.

**FIGURE
13**

Sheet 13 of 13

APPENDIX B TRAFFIC COUNTS



www.TSTData.com
184 Baker Rd

Oceanport, NJ
Oceanport Ave & Hildreth Ave
Tuesday, September 24, 2019
Location: 40.317944, -
74.033948

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Count Name: Oceanport
Ave./Hildreth Ave.
Site Code:
Start Date: 09/24/2019
Page No: 1

Turning Movement Data

Start Time	Hildreth Ave. Eastbound							Closed Roadway Westbound							Oceanport Ave. Northbound							Oceanport Ave. Southbound							Int. Total
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	
7:00 AM	23	0	14	1	0	0	38	0	0	0	0	0	1	0	14	104	0	0	0	0	118	0	64	13	2	0	0	79	235
7:15 AM	20	0	23	1	0	0	44	0	0	0	0	0	0	0	21	121	0	0	0	0	142	0	72	20	3	0	0	95	281
7:30 AM	20	0	18	0	0	1	38	0	0	0	0	0	1	0	31	153	0	0	0	0	184	0	62	31	10	0	0	103	325
7:45 AM	45	0	23	0	0	0	68	0	0	0	0	0	0	0	49	151	0	0	0	0	200	0	108	19	21	0	0	148	416
Hourly Total	108	0	78	2	0	1	188	0	0	0	0	0	2	0	115	529	0	0	0	0	644	0	306	83	36	0	0	425	1257
8:00 AM	23	0	13	4	0	0	40	0	0	0	0	0	0	0	33	121	0	0	0	0	154	0	100	24	2	0	0	126	320
8:15 AM	26	0	20	3	0	0	49	0	0	0	0	0	0	0	34	147	0	0	0	0	181	0	81	31	1	0	0	113	343
8:30 AM	36	0	29	0	0	1	65	0	0	0	0	0	0	0	34	123	0	0	0	1	157	0	103	30	4	0	0	137	359
8:45 AM	27	0	20	0	0	0	47	0	0	0	0	0	0	0	30	155	0	0	0	0	185	0	86	19	1	0	0	106	338
Hourly Total	112	0	82	7	0	1	201	0	0	0	0	0	0	0	131	546	0	0	0	1	677	0	370	104	8	0	0	482	1360
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	31	0	48	3	0	0	82	0	0	0	0	0	0	0	36	96	0	0	0	0	132	0	111	32	16	0	0	159	373
3:15 PM	35	0	29	4	0	0	68	0	0	0	0	0	1	0	44	132	0	0	0	0	176	0	117	28	6	0	0	151	395
3:30 PM	37	0	32	1	0	0	70	0	0	0	0	0	0	0	28	134	0	0	0	0	162	0	113	41	17	0	0	171	403
3:45 PM	31	0	33	0	0	0	64	0	0	0	0	0	0	0	47	138	0	0	0	0	185	0	95	32	10	0	0	137	386
Hourly Total	134	0	142	8	0	0	284	0	0	0	0	0	1	0	155	500	0	0	0	0	655	0	436	133	49	0	0	618	1557
4:00 PM	19	0	40	0	0	0	59	0	0	0	0	0	0	0	32	118	0	0	0	0	150	0	126	33	2	0	0	161	370
4:15 PM	16	0	34	0	0	1	50	0	0	0	0	0	0	0	42	120	0	0	0	0	162	0	130	25	7	0	0	162	374
4:30 PM	34	0	33	2	0	0	69	0	0	0	0	0	0	0	28	114	0	0	0	0	142	0	124	45	9	0	0	178	389
4:45 PM	34	0	42	2	0	0	78	0	0	0	0	0	0	0	33	129	0	0	0	0	162	0	112	28	13	0	0	153	393
Hourly Total	103	0	149	4	0	1	256	0	0	0	0	0	0	0	135	481	0	0	0	0	616	0	492	131	31	0	0	654	1526
5:00 PM	41	0	42	4	0	1	87	0	0	0	0	0	0	0	29	108	0	0	0	0	137	0	152	40	13	0	0	205	429
5:15 PM	39	0	55	1	0	1	95	0	0	0	0	0	0	0	35	125	0	0	0	0	160	0	149	39	7	0	0	195	450
5:30 PM	40	0	34	4	0	0	78	0	0	0	1	0	0	1	33	113	0	0	0	0	146	0	118	30	9	0	0	157	382
5:45 PM	30	0	34	0	0	0	64	0	0	0	0	0	0	0	29	106	0	0	0	0	135	0	157	33	8	0	0	198	397
Hourly Total	150	0	165	9	0	2	324	0	0	0	1	0	0	1	126	452	0	0	0	0	578	0	576	142	37	0	0	755	1658
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	607	0	616	30	0	5	1253	0	0	0	1	0	3	1	662	2508	0	0	0	1	3170	0	2180	593	161	0	0	2934	7358
Approach %	48.4	0.0	49.2	2.4	0.0	-	-	0.0	0.0	0.0	100.0	0.0	-	-	20.9	79.1	0.0	0.0	0.0	-	-	0.0	74.3	20.2	5.5	0.0	-	-	-
Total %	8.2	0.0	8.4	0.4	0.0	-	17.0	0.0	0.0	0.0	0.0	0.0	-	0.0	9.0	34.1	0.0	0.0	0.0	-	43.1	0.0	29.6	8.1	2.2	0.0	-	39.9	-
Lights	588	0	602	29	0	-	1219	0	0	0	1	0	-	1	649	2448	0	0	0	-	3097	0	2103	571	154	0	-	2828	7145
% Lights	96.9	-	97.7	96.7	-	-	97.3	-	-	-	100.0	-	-	100.0	98.0	97.6	-	-	-	-	97.7	-	96.5	96.3	95.7	-	-	96.4	97.1
Buses	4	0	7	0	0	-	11	0	0	0	0	0	-	0	6	14	0	0	0	-	20	0	23	8	2	0	-	33	64
% Buses	0.7	-	1.1	0.0	-	-	0.9	-	-	-	0.0	-	-	0.0	0.9	0.6	-	-	-	-	0.6	-	1.1	1.3	1.2	-	-	1.1	0.9
Trucks	15	0	7	1	0	-	23	0	0	0	0	0	-	0	7	46	0	0	0	-	53	0	54	14	5	0	-	73	149
% Trucks	2.5	-	1.1	3.3	-	-	1.8	-	-	-	0.0	-	-	0.0	1.1	1.8	-	-	-	-	1.7	-	2.5	2.4	3.1	-	-	2.5	2.0
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	-	2	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	20.0	-	-	-	-	-	-	66.7	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	-	4	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	80.0	-	-	-	-	-	-	33.3	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-



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184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Oceanport, NJ
Oceanport Ave & Hildreth Ave
Tuesday, September 24, 2019
Location: 40.317944, -
74.033948

Count Name: Oceanport
Ave./Hildreth Ave.
Site Code:
Start Date: 09/24/2019
Page No: 3

Turning Movement Peak Hour Data (7:45 AM)

Start Time	Hildreth Ave. Eastbound							Closed Roadway Westbound							Oceanport Ave. Northbound							Oceanport Ave. Southbound							Int. Total	
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total		
7:45 AM	45	0	23	0	0	0	68	0	0	0	0	0	0	0	49	151	0	0	0	0	200	0	108	19	21	0	0	148	416	
8:00 AM	23	0	13	4	0	0	40	0	0	0	0	0	0	0	33	121	0	0	0	0	154	0	100	24	2	0	0	126	320	
8:15 AM	26	0	20	3	0	0	49	0	0	0	0	0	0	0	34	147	0	0	0	0	181	0	81	31	1	0	0	113	343	
8:30 AM	36	0	29	0	0	1	65	0	0	0	0	0	0	0	34	123	0	0	0	1	157	0	103	30	4	0	0	137	359	
Total	130	0	85	7	0	1	222	0	0	0	0	0	0	0	150	542	0	0	0	1	692	0	392	104	28	0	0	524	1438	
Approach %	58.6	0.0	38.3	3.2	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	-	21.7	78.3	0.0	0.0	0.0	-	-	0.0	74.8	19.8	5.3	0.0	-	-	-	-
Total %	9.0	0.0	5.9	0.5	0.0	-	15.4	0.0	0.0	0.0	0.0	0.0	-	0.0	10.4	37.7	0.0	0.0	0.0	-	48.1	0.0	27.3	7.2	1.9	0.0	-	36.4	-	
PHF	0.72 2	0.000	0.733	0.438	0.000	-	0.816	0.000	0.000	0.000	0.000	0.000	-	0.000	0.765	0.897	0.000	0.000	0.000	-	0.865	0.000	0.907	0.839	0.333	0.000	-	0.885	0.864	
Lights	124	0	78	7	0	-	209	0	0	0	0	0	-	0	147	520	0	0	0	-	667	0	376	96	25	0	-	497	1373	
% Lights	95.4	-	91.8	100.0	-	-	94.1	-	-	-	-	-	-	-	98.0	95.9	-	-	-	-	96.4	-	95.9	92.3	89.3	-	-	94.8	95.5	
Buses	1	0	4	0	0	-	5	0	0	0	0	0	-	0	2	5	0	0	0	-	7	0	7	3	1	0	-	11	23	
% Buses	0.8	-	4.7	0.0	-	-	2.3	-	-	-	-	-	-	-	1.3	0.9	-	-	-	-	1.0	-	1.8	2.9	3.6	-	-	2.1	1.6	
Trucks	5	0	3	0	0	-	8	0	0	0	0	0	-	0	1	17	0	0	0	-	18	0	9	5	2	0	-	16	42	
% Trucks	3.8	-	3.5	0.0	-	-	3.6	-	-	-	-	-	-	-	0.7	3.1	-	-	-	-	2.6	-	2.3	4.8	7.1	-	-	3.1	2.9	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	
% Bicycles on Crosswalk	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	-	0	-	-	-	-	-	-	1	-	-	-	-	-	-	0	-	-	
% Pedestrians	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	

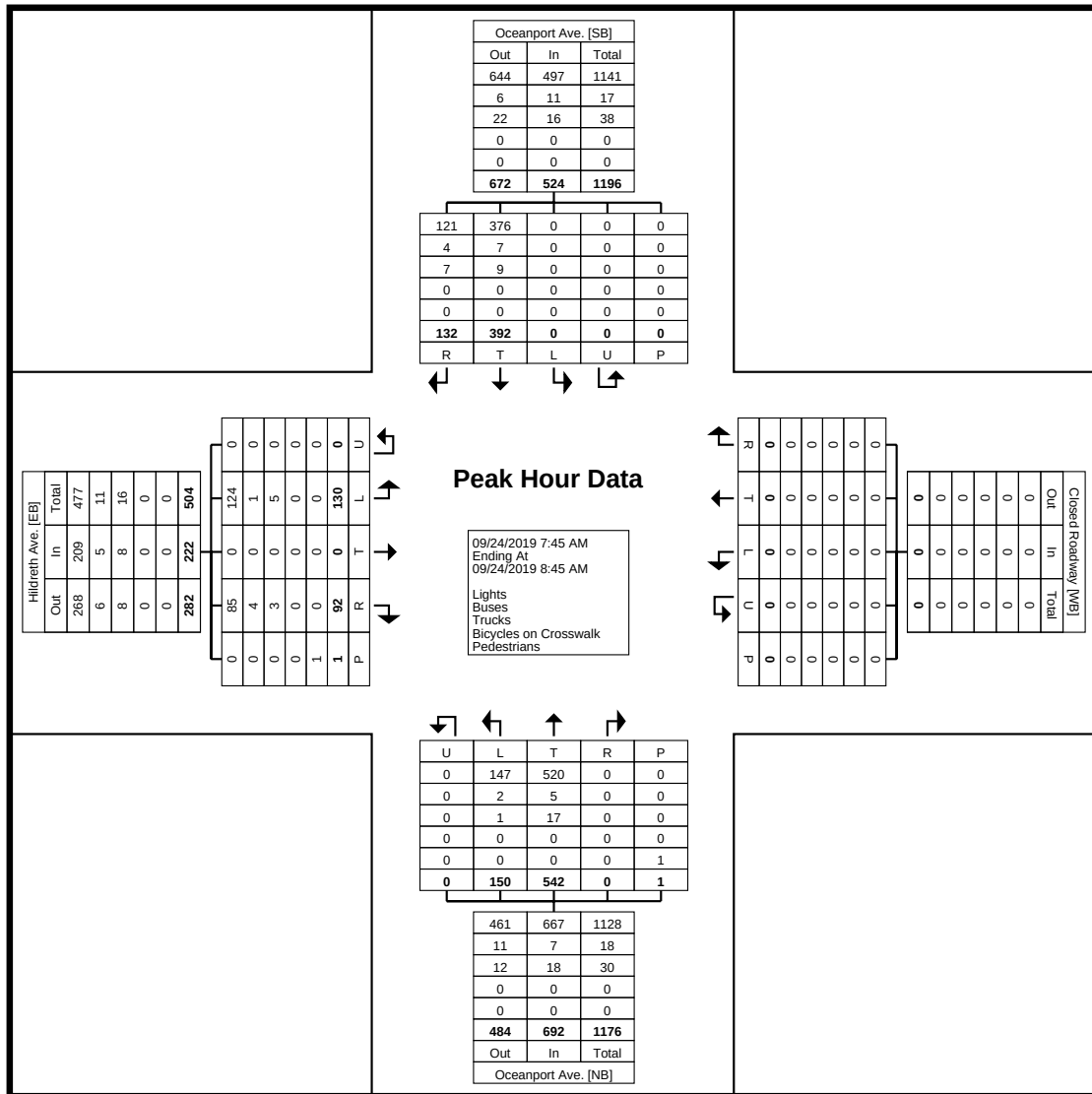


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Start Date: 09/24/2019
Page No: 4



Turning Movement Peak Hour Data Plot (7:45 AM)



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184 Baker Rd

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Oceanport, NJ
Oceanport Ave & Hildreth Ave
Tuesday, September 24, 2019
Location: 40.317944, -
74.033948

Count Name: Oceanport
Ave./Hildreth Ave.
Site Code:
Start Date: 09/24/2019
Page No: 5

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Hildreth Ave. Eastbound							Closed Roadway Westbound							Oceanport Ave. Northbound							Oceanport Ave. Southbound							Int. Total	
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total		
4:30 PM	34	0	33	2	0	0	69	0	0	0	0	0	0	0	28	114	0	0	0	0	142	0	124	45	9	0	0	178	389	
4:45 PM	34	0	42	2	0	0	78	0	0	0	0	0	0	0	33	129	0	0	0	0	162	0	112	28	13	0	0	153	393	
5:00 PM	41	0	42	4	0	1	87	0	0	0	0	0	0	0	29	108	0	0	0	0	137	0	152	40	13	0	0	205	429	
5:15 PM	39	0	55	1	0	1	95	0	0	0	0	0	0	0	35	125	0	0	0	0	160	0	149	39	7	0	0	195	450	
Total	148	0	172	9	0	2	329	0	0	0	0	0	0	0	125	476	0	0	0	0	601	0	537	152	42	0	0	731	1661	
Approach %	45.0	0.0	52.3	2.7	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	-	20.8	79.2	0.0	0.0	0.0	-	-	0.0	73.5	20.8	5.7	0.0	-	-	-	-
Total %	8.9	0.0	10.4	0.5	0.0	-	19.8	0.0	0.0	0.0	0.0	0.0	-	0.0	7.5	28.7	0.0	0.0	0.0	-	36.2	0.0	32.3	9.2	2.5	0.0	-	44.0	-	-
PHF	0.902	0.000	0.782	0.563	0.000	-	0.866	0.000	0.000	0.000	0.000	0.000	-	0.000	0.893	0.922	0.000	0.000	0.000	-	0.927	0.000	0.883	0.844	0.808	0.000	-	0.891	0.923	-
Lights	147	0	172	9	0	-	328	0	0	0	0	0	-	0	123	471	0	0	0	-	594	0	525	149	41	0	-	715	1637	
% Lights	99.3	-	100.0	100.0	-	-	99.7	-	-	-	-	-	-	-	98.4	98.9	-	-	-	-	98.8	-	97.8	98.0	97.6	-	-	97.8	98.6	-
Buses	0	0	0	0	0	-	0	0	0	0	0	0	-	0	1	2	0	0	0	-	3	0	0	1	0	0	-	1	4	-
% Buses	0.0	-	0.0	0.0	-	-	0.0	-	-	-	-	-	-	-	0.8	0.4	-	-	-	-	0.5	-	0.0	0.7	0.0	-	-	0.1	0.2	-
Trucks	1	0	0	0	0	-	1	0	0	0	0	0	-	0	1	3	0	0	0	-	4	0	12	2	1	0	-	15	20	-
% Trucks	0.7	-	0.0	0.0	-	-	0.3	-	-	-	-	-	-	-	0.8	0.6	-	-	-	-	0.7	-	2.2	1.3	2.4	-	-	2.1	1.2	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-
% Bicycles on Crosswalk	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-
% Pedestrians	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

APPENDIX C

TIMING DIRECTIVE

VEHICLE ACTUATION

INDICATIONS

Phase		1,2	3,4	5,6,7,8,9	TIMING PLAN I (SEC.)
A.	Oceanport Avenue (C.R. 11) NB Lead Change	<G-/G <Y-/G	R R	R R	7-10 3
B.	Oceanport Avenue R.O.W. Change Clearance	G Y R	G Y R	R R R	40-24 4 3
B.	Russell Avenue (C.R. 537 Ext) R.O.W. Change Clearance	R R R	R R R	G Y R	7-20 3 3
	EMERGENCY FLASH	Y	Y	R	

NOTES:

1. The memory circuits are to be disconnected.
2. The vehicle extension shall be set at 2 seconds.
3. The manual control is to be connected.

HOURS OF OPERATION:

Timing Plan I -- 70 Second Background Cycle / All times

Field Verified - 12/1/19

Fixed

Directive #
Oceanport Avenue (C.R. 11) and Russell Avenue (C.R. 537 Extension)
Borough of Oceanport, Monmouth County
16001092G
September 19, 2016

VEHICLE ACTUATION

INDICATIONS

Phase		1,2	3,4	5,6,7,8,9	TIMING PLAN I (SEC.)
A.	Oceanport Avenue (C.R. 11) NB Lead Change	<G-/G <Y-/G	R R	R R	7 3
B.	Oceanport Avenue R.O.W. Change Clearance	G Y R	G Y R	R R R	27 4 3
B.	Russell Avenue (C.R. 537 Ext) R.O.W. Change Clearance	R R R	R R R	G Y R	20 3 3
	EMERGENCY FLASH	Y	Y	R	

NOTES:

1. The memory circuits are to be disconnected.
2. The vehicle extension shall be set at 2 seconds.
3. The manual control is to be connected.

HOURS OF OPERATION:

Timing Plan I – 70 Second Background Cycle / All times

APPENDIX D

CAPACITY ANALYSIS PRINTOUTS

Lanes, Volumes, Timings

2021 No-Build Condition w/Squier Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	143	104	193	553	400	175
Future Volume (vph)	143	104	193	553	400	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	190	110			415
Storage Lanes	1	1	1			1
Taper Length (ft)	25		40			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1719	1495	1770	1827	1827	1524
Flt Permitted	0.950		0.343			
Satd. Flow (perm)	1719	1495	639	1827	1827	1524
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						203
Link Speed (mph)	35			35	35	
Link Distance (ft)	420			601	911	
Travel Time (s)	8.2			11.7	17.7	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	5%	8%	2%	4%	4%	6%
Adj. Flow (vph)	166	121	224	643	465	203
Shared Lane Traffic (%)						
Lane Group Flow (vph)	166	121	224	643	465	203
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			60	50	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	

02/25/2020
JEGSynchro 10 Report
Page 1

Lanes, Volumes, Timings

2021 No-Build Condition w/Squier Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	24.0	24.0	24.0
Minimum Split (s)	13.0	13.0	10.0	31.0	31.0	31.0
Total Split (s)	26.0	26.0	13.0	44.0	31.0	31.0
Total Split (%)	37.1%	37.1%	18.6%	62.9%	44.3%	44.3%
Maximum Green (s)	20.0	20.0	10.0	37.0	24.0	24.0
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	0.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	3.0	7.0	7.0	7.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	2.0	2.0	3.0	2.0	2.0	2.0
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	10.3	10.3	40.2	36.2	24.1	24.1
Actuated g/C Ratio	0.17	0.17	0.68	0.61	0.41	0.41
v/c Ratio	0.56	0.47	0.37	0.58	0.63	0.28
Control Delay	30.4	28.6	5.9	10.3	19.8	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.4	28.6	5.9	10.3	19.8	3.6
LOS	C	C	A	B	B	A
Approach Delay	29.6			9.1	14.9	
Approach LOS	C			A	B	
90th %ile Green (s)	14.8	14.8	10.0	37.0	24.0	24.0
90th %ile Term Code	Gap	Gap	Max	Hold	Max	Max
70th %ile Green (s)	12.0	12.0	10.0	37.0	24.0	24.0
70th %ile Term Code	Gap	Gap	Max	Hold	Max	Max
50th %ile Green (s)	10.0	10.0	10.0	37.0	24.0	24.0
50th %ile Term Code	Gap	Gap	Max	Hold	Max	Max
30th %ile Green (s)	8.2	8.2	8.5	35.5	24.0	24.0
30th %ile Term Code	Gap	Gap	Gap	Hold	Max	Max
10th %ile Green (s)	7.0	7.0	7.0	34.0	24.0	24.0
10th %ile Term Code	Min	Min	Min	Hold	Max	Max
Stops (vph)	123	89	65	316	311	22
Fuel Used(gal)	2	2	2	6	10	3
CO Emissions (g/hr)	157	111	109	415	688	201
NOx Emissions (g/hr)	31	22	21	81	134	39
VOC Emissions (g/hr)	36	26	25	96	159	46
Dilemma Vehicles (#)	0	0	0	33	33	0
Queue Length 50th (ft)	56	40	23	117	130	0
Queue Length 95th (ft)	102	79	54	226	231	32
Internal Link Dist (ft)	340			521	831	
Turn Bay Length (ft)		190	110			415
Base Capacity (vph)	580	504	622	1140	740	738
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0

02/25/2020

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Synchro 10 Report

Page 2

Lanes, Volumes, Timings

2021 No-Build Condition w/Squier Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Reduced v/c Ratio	0.29	0.24	0.36	0.56	0.63	0.28

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 59.5

Natural Cycle: 55

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 14.5

Intersection LOS: B

Intersection Capacity Utilization 53.8%

ICU Level of Service A

Analysis Period (min) 15

90th %ile Actuated Cycle: 64.8

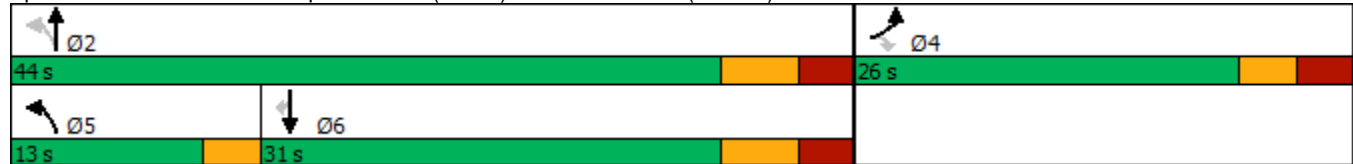
70th %ile Actuated Cycle: 62

50th %ile Actuated Cycle: 60

30th %ile Actuated Cycle: 56.7

10th %ile Actuated Cycle: 54

Splits and Phases: 1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)



Lanes, Volumes, Timings

2021 No-Build Condition w/Squier Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	170	204	151	486	548	221
Future Volume (vph)	170	204	151	486	548	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	190	110			415
Storage Lanes	1	1	1			1
Taper Length (ft)	25		40			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1787	1615	1770	1881	1863	1583
Flt Permitted	0.950		0.224			
Satd. Flow (perm)	1787	1615	417	1881	1863	1583
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						240
Link Speed (mph)	35			35	35	
Link Distance (ft)	420			601	911	
Travel Time (s)	8.2			11.7	17.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	2%	1%	2%	2%
Adj. Flow (vph)	185	222	164	528	596	240
Shared Lane Traffic (%)						
Lane Group Flow (vph)	185	222	164	528	596	240
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			60	50	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	

02/25/2020
JEGSynchro 10 Report
Page 1

Lanes, Volumes, Timings

2021 No-Build Condition w/Squier Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	24.0	24.0	24.0
Minimum Split (s)	13.0	13.0	10.0	31.0	31.0	31.0
Total Split (s)	26.0	26.0	13.0	44.0	31.0	31.0
Total Split (%)	37.1%	37.1%	18.6%	62.9%	44.3%	44.3%
Maximum Green (s)	20.0	20.0	10.0	37.0	24.0	24.0
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	0.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	3.0	7.0	7.0	7.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	2.0	2.0	3.0	2.0	2.0	2.0
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	12.6	12.6	37.8	33.7	24.6	24.6
Actuated g/C Ratio	0.21	0.21	0.63	0.57	0.41	0.41
v/c Ratio	0.49	0.65	0.36	0.50	0.78	0.30
Control Delay	26.0	31.7	7.4	10.5	27.5	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	31.7	7.4	10.5	27.5	3.7
LOS	C	C	A	B	C	A
Approach Delay	29.1			9.8	20.7	
Approach LOS	C			A	C	
90th %ile Green (s)	19.5	19.5	10.0	37.0	24.0	24.0
90th %ile Term Code	Gap	Gap	Max	Hold	Max	Max
70th %ile Green (s)	15.2	15.2	10.0	37.0	24.0	24.0
70th %ile Term Code	Gap	Gap	Max	Hold	Max	Max
50th %ile Green (s)	12.6	12.6	8.8	35.8	24.0	24.0
50th %ile Term Code	Gap	Gap	Gap	Hold	Max	Max
30th %ile Green (s)	10.2	10.2	7.6	34.6	24.0	24.0
30th %ile Term Code	Gap	Gap	Gap	Hold	Max	Max
10th %ile Green (s)	7.2	7.2	0.0	24.0	24.0	24.0
10th %ile Term Code	Gap	Gap	Skip	Min	Max	Max
Stops (vph)	137	171	55	270	414	27
Fuel Used(gal)	2	3	1	5	14	4
CO Emissions (g/hr)	171	225	91	362	996	253
NOx Emissions (g/hr)	33	44	18	70	194	49
VOC Emissions (g/hr)	40	52	21	84	231	59
Dilemma Vehicles (#)	0	0	0	28	43	0
Queue Length 50th (ft)	61	77	20	100	191	0
Queue Length 95th (ft)	115	141	53	215	#433	42
Internal Link Dist (ft)	340			521	831	
Turn Bay Length (ft)		190	110			415
Base Capacity (vph)	614	555	496	1196	768	793
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0

02/25/2020

JEG

Synchro 10 Report

Page 2

Lanes, Volumes, Timings

2021 No-Build Condition w/Squier Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Reduced v/c Ratio	0.30	0.40	0.33	0.44	0.78	0.30

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 59.6

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 18.5

Intersection LOS: B

Intersection Capacity Utilization 60.8%

ICU Level of Service B

Analysis Period (min) 15

90th %ile Actuated Cycle: 69.5

70th %ile Actuated Cycle: 65.2

50th %ile Actuated Cycle: 61.4

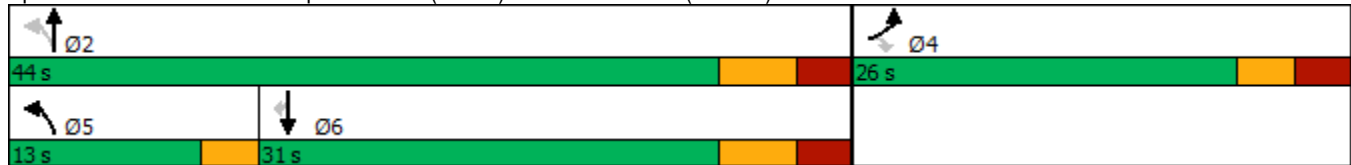
30th %ile Actuated Cycle: 57.8

10th %ile Actuated Cycle: 44.2

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)



Lanes, Volumes, Timings

2021 Build Condition w/Squier Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	159	126	199	553	400	180
Future Volume (vph)	159	126	199	553	400	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	190	110			415
Storage Lanes	1	1	1			1
Taper Length (ft)	25		40			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1719	1495	1770	1827	1827	1524
Flt Permitted	0.950		0.340			
Satd. Flow (perm)	1719	1495	633	1827	1827	1524
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						209
Link Speed (mph)	35			35	35	
Link Distance (ft)	420			601	911	
Travel Time (s)	8.2			11.7	17.7	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	5%	8%	2%	4%	4%	6%
Adj. Flow (vph)	185	147	231	643	465	209
Shared Lane Traffic (%)						
Lane Group Flow (vph)	185	147	231	643	465	209
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			60	50	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	

02/25/2020
JEGSynchro 10 Report
Page 1

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2021 Build Condition w/Squier Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	24.0	24.0	24.0
Minimum Split (s)	13.0	13.0	10.0	31.0	31.0	31.0
Total Split (s)	26.0	26.0	13.0	44.0	31.0	31.0
Total Split (%)	37.1%	37.1%	18.6%	62.9%	44.3%	44.3%
Maximum Green (s)	20.0	20.0	10.0	37.0	24.0	24.0
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	0.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	3.0	7.0	7.0	7.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	2.0	2.0	3.0	2.0	2.0	2.0
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	10.9	10.9	40.2	36.2	24.1	24.1
Actuated g/C Ratio	0.18	0.18	0.67	0.60	0.40	0.40
v/c Ratio	0.59	0.54	0.39	0.59	0.64	0.28
Control Delay	31.0	30.4	6.4	10.8	20.5	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.0	30.4	6.4	10.8	20.5	3.6
LOS	C	C	A	B	C	A
Approach Delay	30.7			9.6	15.3	
Approach LOS	C			A	B	
90th %ile Green (s)	16.0	16.0	10.0	37.0	24.0	24.0
90th %ile Term Code	Gap	Gap	Max	Hold	Max	Max
70th %ile Green (s)	12.8	12.8	10.0	37.0	24.0	24.0
70th %ile Term Code	Gap	Gap	Max	Hold	Max	Max
50th %ile Green (s)	10.8	10.8	10.0	37.0	24.0	24.0
50th %ile Term Code	Gap	Gap	Max	Hold	Max	Max
30th %ile Green (s)	8.8	8.8	8.7	35.7	24.0	24.0
30th %ile Term Code	Gap	Gap	Gap	Hold	Max	Max
10th %ile Green (s)	7.0	7.0	7.0	34.0	24.0	24.0
10th %ile Term Code	Min	Min	Min	Hold	Max	Max
Stops (vph)	137	106	71	323	311	22
Fuel Used(gal)	3	2	2	6	10	3
CO Emissions (g/hr)	176	137	116	422	692	206
NOx Emissions (g/hr)	34	27	23	82	135	40
VOC Emissions (g/hr)	41	32	27	98	160	48
Dilemma Vehicles (#)	0	0	0	33	33	0
Queue Length 50th (ft)	63	50	25	123	134	0
Queue Length 95th (ft)	112	93	59	237	238	33
Internal Link Dist (ft)	340			521	831	
Turn Bay Length (ft)		190	110			415
Base Capacity (vph)	573	499	612	1127	731	735
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0

02/25/2020

JEG

Synchro 10 Report

Page 2

Lanes, Volumes, Timings

2021 Build Condition w/Squier Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Reduced v/c Ratio	0.32	0.29	0.38	0.57	0.64	0.28

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 60.2

Natural Cycle: 55

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 15.4

Intersection LOS: B

Intersection Capacity Utilization 55.1%

ICU Level of Service B

Analysis Period (min) 15

90th %ile Actuated Cycle: 66

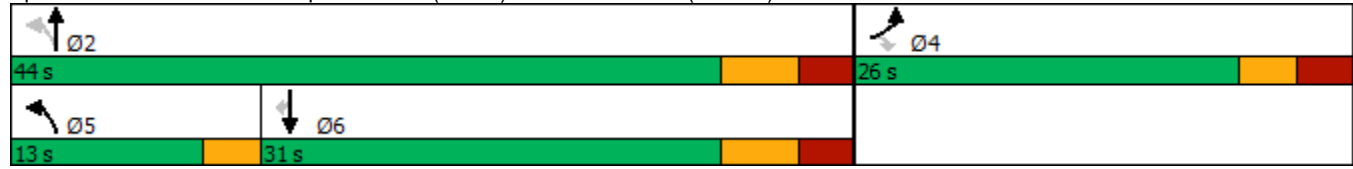
70th %ile Actuated Cycle: 62.8

50th %ile Actuated Cycle: 60.8

30th %ile Actuated Cycle: 57.5

10th %ile Actuated Cycle: 54

Splits and Phases: 1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)



Lanes, Volumes, Timings

2021 Build Condition w/Squier Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	180	217	173	486	548	236
Future Volume (vph)	180	217	173	486	548	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	190	110			415
Storage Lanes	1	1	1			1
Taper Length (ft)	25		40			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1787	1615	1770	1881	1863	1583
Flt Permitted	0.950		0.199			
Satd. Flow (perm)	1787	1615	371	1881	1863	1583
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						257
Link Speed (mph)	35			35	35	
Link Distance (ft)	420			601	911	
Travel Time (s)	8.2			11.7	17.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	2%	1%	2%	2%
Adj. Flow (vph)	196	236	188	528	596	257
Shared Lane Traffic (%)						
Lane Group Flow (vph)	196	236	188	528	596	257
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			60	50	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	

02/25/2020
JEGSynchro 10 Report
Page 1

Lanes, Volumes, Timings

2021 Build Condition w/Squier Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	24.0	24.0	24.0
Minimum Split (s)	13.0	13.0	10.0	31.0	31.0	31.0
Total Split (s)	26.0	26.0	13.0	44.0	31.0	31.0
Total Split (%)	37.1%	37.1%	18.6%	62.9%	44.3%	44.3%
Maximum Green (s)	20.0	20.0	10.0	37.0	24.0	24.0
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	0.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	3.0	7.0	7.0	7.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	2.0	2.0	3.0	2.0	2.0	2.0
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	13.2	13.2	40.1	36.1	24.2	24.2
Actuated g/C Ratio	0.21	0.21	0.64	0.58	0.39	0.39
v/c Ratio	0.52	0.69	0.43	0.49	0.83	0.33
Control Delay	26.8	33.7	8.5	10.5	31.4	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.8	33.7	8.5	10.5	31.4	3.8
LOS	C	C	A	B	C	A
Approach Delay	30.5			10.0	23.1	
Approach LOS	C			A	C	
90th %ile Green (s)	20.0	20.0	10.0	37.0	24.0	24.0
90th %ile Term Code	Max	Max	Max	Hold	Max	Max
70th %ile Green (s)	16.1	16.1	10.0	37.0	24.0	24.0
70th %ile Term Code	Gap	Gap	Max	Hold	Max	Max
50th %ile Green (s)	13.2	13.2	9.5	36.5	24.0	24.0
50th %ile Term Code	Gap	Gap	Gap	Hold	Max	Max
30th %ile Green (s)	10.7	10.7	8.0	35.0	24.0	24.0
30th %ile Term Code	Gap	Gap	Gap	Hold	Max	Max
10th %ile Green (s)	7.5	7.5	7.0	34.0	24.0	24.0
10th %ile Term Code	Gap	Gap	Min	Hold	Max	Max
Stops (vph)	146	188	64	272	428	28
Fuel Used(gal)	3	4	2	5	15	4
CO Emissions (g/hr)	183	249	107	363	1034	271
NOx Emissions (g/hr)	36	48	21	71	201	53
VOC Emissions (g/hr)	43	58	25	84	240	63
Dilemma Vehicles (#)	0	0	0	28	41	0
Queue Length 50th (ft)	67	84	24	103	199	0
Queue Length 95th (ft)	122	149	61	218	#437	44
Internal Link Dist (ft)	340			521	831	
Turn Bay Length (ft)		190	110			415
Base Capacity (vph)	577	521	464	1124	722	770
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0

02/25/2020

JEG

Synchro 10 Report

Page 2

Lanes, Volumes, Timings

2021 Build Condition w/Squier Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Reduced v/c Ratio	0.34	0.45	0.41	0.47	0.83	0.33

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 62.4

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 20.0

Intersection LOS: C

Intersection Capacity Utilization 62.6%

ICU Level of Service B

Analysis Period (min) 15

90th %ile Actuated Cycle: 70

70th %ile Actuated Cycle: 66.1

50th %ile Actuated Cycle: 62.7

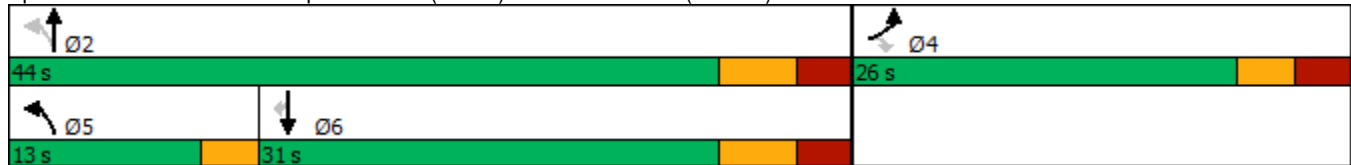
30th %ile Actuated Cycle: 58.7

10th %ile Actuated Cycle: 54.5

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)



Lanes, Volumes, Timings

2021 No-Build Condition w/Squier Hall & Allison Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	155	104	197	592	416	177
Future Volume (vph)	155	104	197	592	416	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	190	110			415
Storage Lanes	1	1	1			1
Taper Length (ft)	25		40			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1719	1495	1770	1827	1827	1524
Flt Permitted	0.950		0.322			
Satd. Flow (perm)	1719	1495	600	1827	1827	1524
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						206
Link Speed (mph)	35			35	35	
Link Distance (ft)	420			601	911	
Travel Time (s)	8.2			11.7	17.7	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	5%	8%	2%	4%	4%	6%
Adj. Flow (vph)	180	121	229	688	484	206
Shared Lane Traffic (%)						
Lane Group Flow (vph)	180	121	229	688	484	206
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			60	50	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	

02/25/2020
JEGSynchro 10 Report
Page 1

Lanes, Volumes, Timings

2021 No-Build Condition w/Squier Hall & Allison Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	24.0	24.0	24.0
Minimum Split (s)	13.0	13.0	10.0	31.0	31.0	31.0
Total Split (s)	26.0	26.0	13.0	44.0	31.0	31.0
Total Split (%)	37.1%	37.1%	18.6%	62.9%	44.3%	44.3%
Maximum Green (s)	20.0	20.0	10.0	37.0	24.0	24.0
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	0.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	3.0	7.0	7.0	7.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	2.0	2.0	3.0	2.0	2.0	2.0
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	10.7	10.7	40.2	36.2	24.1	24.1
Actuated g/C Ratio	0.18	0.18	0.67	0.60	0.40	0.40
v/c Ratio	0.59	0.45	0.40	0.62	0.66	0.28
Control Delay	30.8	27.8	6.4	11.4	21.3	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.8	27.8	6.4	11.4	21.3	3.6
LOS	C	C	A	B	C	A
Approach Delay	29.6			10.2	16.0	
Approach LOS	C			B	B	
90th %ile Green (s)	15.7	15.7	10.0	37.0	24.0	24.0
90th %ile Term Code	Gap	Gap	Max	Max	Max	Max
70th %ile Green (s)	12.6	12.6	10.0	37.0	24.0	24.0
70th %ile Term Code	Gap	Gap	Max	Hold	Max	Max
50th %ile Green (s)	10.6	10.6	10.0	37.0	24.0	24.0
50th %ile Term Code	Gap	Gap	Max	Hold	Max	Max
30th %ile Green (s)	8.6	8.6	8.6	35.6	24.0	24.0
30th %ile Term Code	Gap	Gap	Gap	Hold	Max	Max
10th %ile Green (s)	7.0	7.0	7.0	34.0	24.0	24.0
10th %ile Term Code	Min	Min	Min	Hold	Max	Max
Stops (vph)	133	86	68	359	324	22
Fuel Used(gal)	2	2	2	7	7	1
CO Emissions (g/hr)	171	108	114	465	487	102
NOx Emissions (g/hr)	33	21	22	90	95	20
VOC Emissions (g/hr)	40	25	26	108	113	24
Dilemma Vehicles (#)	0	0	0	39	34	0
Queue Length 50th (ft)	61	40	25	135	140	0
Queue Length 95th (ft)	109	78	58	260	248	33
Internal Link Dist (ft)	340			521	831	
Turn Bay Length (ft)		190	110			415
Base Capacity (vph)	575	500	597	1131	734	735
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0

02/25/2020
JEGSynchro 10 Report
Page 2

Lanes, Volumes, Timings

2021 No-Build Condition w/Squier Hall & Allison Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Reduced v/c Ratio	0.31	0.24	0.38	0.61	0.66	0.28

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 60

Natural Cycle: 55

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 15.3

Intersection LOS: B

Intersection Capacity Utilization 55.6%

ICU Level of Service B

Analysis Period (min) 15

90th %ile Actuated Cycle: 65.7

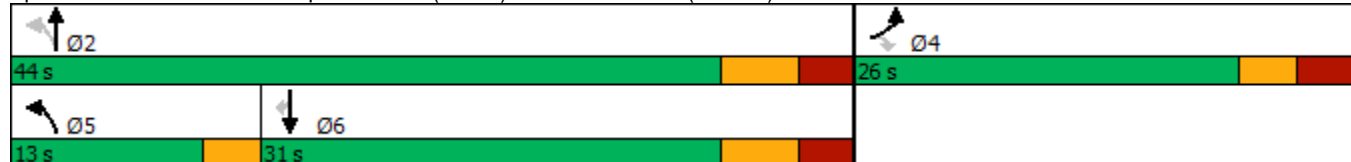
70th %ile Actuated Cycle: 62.6

50th %ile Actuated Cycle: 60.6

30th %ile Actuated Cycle: 57.2

10th %ile Actuated Cycle: 54

Splits and Phases: 1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)



Lanes, Volumes, Timings

2021 No-Build Condition w/Squier Hall & Allison Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	217	204	202	514	633	242
Future Volume (vph)	217	204	202	514	633	242
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	190	110			415
Storage Lanes	1	1	1			1
Taper Length (ft)	25		40			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1787	1615	1770	1881	1863	1583
Flt Permitted	0.950		0.147			
Satd. Flow (perm)	1787	1615	274	1881	1863	1583
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						263
Link Speed (mph)	35			35	35	
Link Distance (ft)	420			601	920	
Travel Time (s)	8.2			11.7	17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	2%	1%	2%	2%
Adj. Flow (vph)	236	222	220	559	688	263
Shared Lane Traffic (%)						
Lane Group Flow (vph)	236	222	220	559	688	263
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			60	50	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	

02/25/2020
JEGSynchro 10 Report
Page 1

Lanes, Volumes, Timings

2021 No-Build Condition w/Squier Hall & Allison Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	24.0	24.0	24.0
Minimum Split (s)	13.0	13.0	10.0	31.0	31.0	31.0
Total Split (s)	26.0	26.0	13.0	44.0	31.0	31.0
Total Split (%)	37.1%	37.1%	18.6%	62.9%	44.3%	44.3%
Maximum Green (s)	20.0	20.0	10.0	37.0	24.0	24.0
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	0.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	3.0	7.0	7.0	7.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	2.0	2.0	3.0	2.0	2.0	2.0
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	12.8	12.8	40.3	36.3	24.2	24.2
Actuated g/C Ratio	0.21	0.21	0.65	0.58	0.39	0.39
v/c Ratio	0.64	0.67	0.56	0.51	0.95	0.34
Control Delay	31.1	33.1	12.7	10.6	46.4	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.1	33.1	12.7	10.6	46.4	3.8
LOS	C	C	B	B	D	A
Approach Delay	32.1			11.2	34.6	
Approach LOS	C			B	C	
90th %ile Green (s)	19.5	19.5	10.0	37.0	24.0	24.0
90th %ile Term Code	Gap	Gap	Max	Hold	Max	Max
70th %ile Green (s)	15.4	15.4	10.0	37.0	24.0	24.0
70th %ile Term Code	Gap	Gap	Max	Hold	Max	Max
50th %ile Green (s)	12.8	12.8	10.0	37.0	24.0	24.0
50th %ile Term Code	Gap	Gap	Max	Hold	Max	Max
30th %ile Green (s)	10.3	10.3	8.6	35.6	24.0	24.0
30th %ile Term Code	Gap	Gap	Gap	Hold	Max	Max
10th %ile Green (s)	7.2	7.2	7.0	34.0	24.0	24.0
10th %ile Term Code	Gap	Gap	Min	Hold	Max	Max
Stops (vph)	185	176	85	291	488	28
Fuel Used(gal)	3	3	2	6	14	2
CO Emissions (g/hr)	239	232	143	386	968	140
NOx Emissions (g/hr)	47	45	28	75	188	27
VOC Emissions (g/hr)	55	54	33	90	224	32
Dilemma Vehicles (#)	0	0	0	29	45	0
Queue Length 50th (ft)	83	79	28	110	249	0
Queue Length 95th (ft)	146	141	92	232	#526	45
Internal Link Dist (ft)	340			521	840	
Turn Bay Length (ft)		190	110			415
Base Capacity (vph)	579	523	420	1128	724	776
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0

02/25/2020

JEG

Synchro 10 Report

Page 2

Lanes, Volumes, Timings

2021 No-Build Condition w/Squier Hall & Allison Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Reduced v/c Ratio	0.41	0.42	0.52	0.50	0.95	0.34

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 62.2

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 25.7

Intersection LOS: C

Intersection Capacity Utilization 70.7%

ICU Level of Service C

Analysis Period (min) 15

90th %ile Actuated Cycle: 69.5

70th %ile Actuated Cycle: 65.4

50th %ile Actuated Cycle: 62.8

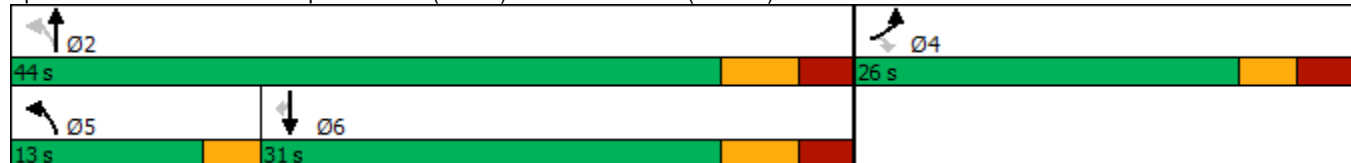
30th %ile Actuated Cycle: 58.9

10th %ile Actuated Cycle: 54.2

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)



Lanes, Volumes, Timings

2021 Build Condition w/Squier Hall & Allison Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	158	110	199	596	432	177
Future Volume (vph)	158	110	199	596	432	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	190	110			415
Storage Lanes	1	1	1			1
Taper Length (ft)	25		40			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1719	1495	1770	1827	1827	1524
Flt Permitted	0.950		0.304			
Satd. Flow (perm)	1719	1495	566	1827	1827	1524
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						206
Link Speed (mph)	35			35	35	
Link Distance (ft)	420			601	911	
Travel Time (s)	8.2			11.7	17.7	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	5%	8%	2%	4%	4%	6%
Adj. Flow (vph)	184	128	231	693	502	206
Shared Lane Traffic (%)						
Lane Group Flow (vph)	184	128	231	693	502	206
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			60	50	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	

02/25/2020
JEGSynchro 10 Report
Page 1

Lanes, Volumes, Timings

2021 Build Condition w/Squier Hall & Allison Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	24.0	24.0	24.0
Minimum Split (s)	13.0	13.0	10.0	31.0	31.0	31.0
Total Split (s)	26.0	26.0	13.0	44.0	31.0	31.0
Total Split (%)	37.1%	37.1%	18.6%	62.9%	44.3%	44.3%
Maximum Green (s)	20.0	20.0	10.0	37.0	24.0	24.0
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	0.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	3.0	7.0	7.0	7.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	2.0	2.0	3.0	2.0	2.0	2.0
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	10.9	10.9	40.3	36.3	24.1	24.1
Actuated g/C Ratio	0.18	0.18	0.67	0.60	0.40	0.40
v/c Ratio	0.59	0.47	0.41	0.63	0.69	0.28
Control Delay	31.0	28.2	6.7	11.6	22.4	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.0	28.2	6.7	11.6	22.4	3.7
LOS	C	C	A	B	C	A
Approach Delay	29.9			10.4	17.0	
Approach LOS	C			B	B	
90th %ile Green (s)	16.0	16.0	10.0	37.0	24.0	24.0
90th %ile Term Code	Gap	Gap	Max	Max	Max	Max
70th %ile Green (s)	12.8	12.8	10.0	37.0	24.0	24.0
70th %ile Term Code	Gap	Gap	Max	Hold	Max	Max
50th %ile Green (s)	10.7	10.7	10.0	37.0	24.0	24.0
50th %ile Term Code	Gap	Gap	Max	Hold	Max	Max
30th %ile Green (s)	8.7	8.7	8.7	35.7	24.0	24.0
30th %ile Term Code	Gap	Gap	Gap	Hold	Max	Max
10th %ile Green (s)	7.0	7.0	7.0	34.0	24.0	24.0
10th %ile Term Code	Min	Min	Min	Hold	Max	Max
Stops (vph)	135	93	71	365	336	22
Fuel Used(gal)	2	2	3	10	7	1
CO Emissions (g/hr)	174	116	195	692	513	102
NOx Emissions (g/hr)	34	23	38	135	100	20
VOC Emissions (g/hr)	40	27	45	160	119	24
Dilemma Vehicles (#)	0	0	0	39	35	0
Queue Length 50th (ft)	63	43	25	137	148	0
Queue Length 95th (ft)	111	82	59	266	#264	33
Internal Link Dist (ft)	340			521	831	
Turn Bay Length (ft)		190	110			415
Base Capacity (vph)	573	499	579	1128	732	734
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0

02/25/2020
JEGSynchro 10 Report
Page 2

Lanes, Volumes, Timings

2021 Build Condition w/Squier Hall & Allison Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Reduced v/c Ratio	0.32	0.26	0.40	0.61	0.69	0.28

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 60.2

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 15.9

Intersection LOS: B

Intersection Capacity Utilization 56.7%

ICU Level of Service B

Analysis Period (min) 15

90th %ile Actuated Cycle: 66

70th %ile Actuated Cycle: 62.8

50th %ile Actuated Cycle: 60.7

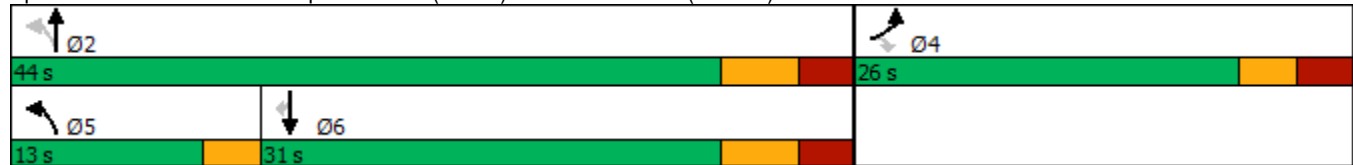
30th %ile Actuated Cycle: 57.4

10th %ile Actuated Cycle: 54

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)



Lanes, Volumes, Timings

2021 Build Condition w/Squier Hall & Allison Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	219	208	208	530	642	242
Future Volume (vph)	219	208	208	530	642	242
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	190	110			415
Storage Lanes	1	1	1			1
Taper Length (ft)	25		40			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1787	1615	1770	1881	1863	1583
Flt Permitted	0.950		0.147			
Satd. Flow (perm)	1787	1615	274	1881	1863	1583
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						263
Link Speed (mph)	35			35	35	
Link Distance (ft)	420			601	911	
Travel Time (s)	8.2			11.7	17.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	2%	1%	2%	2%
Adj. Flow (vph)	238	226	226	576	698	263
Shared Lane Traffic (%)						
Lane Group Flow (vph)	238	226	226	576	698	263
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			60	50	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	

02/25/2020
JEGSynchro 10 Report
Page 1

Lanes, Volumes, Timings

2021 Build Condition w/Squier Hall & Allison Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	24.0	24.0	24.0
Minimum Split (s)	13.0	13.0	10.0	31.0	31.0	31.0
Total Split (s)	26.0	26.0	13.0	44.0	31.0	31.0
Total Split (%)	37.1%	37.1%	18.6%	62.9%	44.3%	44.3%
Maximum Green (s)	20.0	20.0	10.0	37.0	24.0	24.0
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	0.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	3.0	7.0	7.0	7.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	2.0	2.0	3.0	2.0	2.0	2.0
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	12.9	12.9	40.3	36.3	24.2	24.2
Actuated g/C Ratio	0.21	0.21	0.65	0.58	0.39	0.39
v/c Ratio	0.64	0.68	0.57	0.53	0.97	0.34
Control Delay	31.0	33.4	13.4	10.9	49.7	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.0	33.4	13.4	10.9	49.7	3.8
LOS	C	C	B	B	D	A
Approach Delay	32.1			11.6	37.1	
Approach LOS	C			B	D	
90th %ile Green (s)	19.7	19.7	10.0	37.0	24.0	24.0
90th %ile Term Code	Gap	Gap	Max	Hold	Max	Max
70th %ile Green (s)	15.6	15.6	10.0	37.0	24.0	24.0
70th %ile Term Code	Gap	Gap	Max	Hold	Max	Max
50th %ile Green (s)	12.9	12.9	10.0	37.0	24.0	24.0
50th %ile Term Code	Gap	Gap	Max	Hold	Max	Max
30th %ile Green (s)	10.4	10.4	8.7	35.7	24.0	24.0
30th %ile Term Code	Gap	Gap	Gap	Hold	Max	Max
10th %ile Green (s)	7.3	7.3	7.0	34.0	24.0	24.0
10th %ile Term Code	Gap	Gap	Min	Hold	Max	Max
Stops (vph)	185	179	91	304	495	28
Fuel Used(gal)	3	3	3	9	14	2
CO Emissions (g/hr)	240	237	231	601	1009	139
NOx Emissions (g/hr)	47	46	45	117	196	27
VOC Emissions (g/hr)	56	55	53	139	234	32
Dilemma Vehicles (#)	0	0	0	30	45	0
Queue Length 50th (ft)	84	80	29	115	256	0
Queue Length 95th (ft)	147	144	97	244	#537	45
Internal Link Dist (ft)	340			521	831	
Turn Bay Length (ft)		190	110			415
Base Capacity (vph)	577	522	419	1124	722	775
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0

02/25/2020

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Synchro 10 Report

Page 2

Lanes, Volumes, Timings

2021 Build Condition w/Squier Hall & Allison Hall

1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)

Weekday PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Reduced v/c Ratio	0.41	0.43	0.54	0.51	0.97	0.34

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 62.3

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 26.9

Intersection LOS: C

Intersection Capacity Utilization 71.6%

ICU Level of Service C

Analysis Period (min) 15

90th %ile Actuated Cycle: 69.7

70th %ile Actuated Cycle: 65.6

50th %ile Actuated Cycle: 62.9

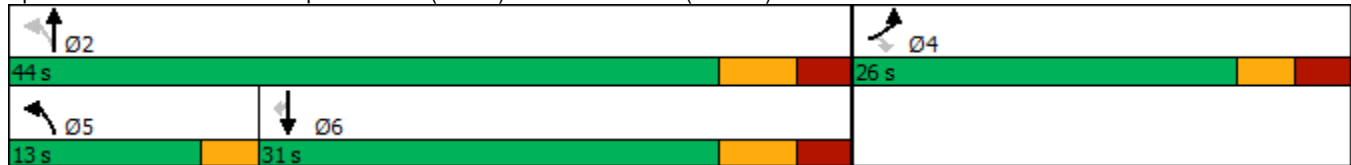
30th %ile Actuated Cycle: 59.1

10th %ile Actuated Cycle: 54.3

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Oceanport Avenue (CR 11) & Russel Avenue (CR 537)



HCM 6th TWSC
2: Oceanport Avenue (CR 11) & Signal Avenue

2021 No-Build Condition w/Squier Hall & Allison Hall

Weekday AM Peak Hour

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	9	33	708	587	24
Future Vol, veh/h	14	9	33	708	587	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	1	3	2
Mvmt Flow	15	10	36	770	638	26
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1493	651	664	0	-	0
Stage 1	651	-	-	-	-	-
Stage 2	842	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	136	469	925	-	-	-
Stage 1	519	-	-	-	-	-
Stage 2	423	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	127	469	925	-	-	-
Mov Cap-2 Maneuver	127	-	-	-	-	-
Stage 1	484	-	-	-	-	-
Stage 2	423	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	27.7	0.4	0			
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	925	-	127	469	-	-
HCM Lane V/C Ratio	0.039	-	0.12	0.021	-	-
HCM Control Delay (s)	9	-	37.2	12.8	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	0.1	-	-

HCM 6th TWSC
2: Oceanport Avenue (CR 11) & Signal Avenue

2021 No-Build Condition w/Squier Hall & Allison Hall

Weekday PM Peak Hour

Intersection						
Int Delay, s/veh	2.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	43	40	34	688	804	35
Future Vol, veh/h	43	40	34	688	804	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	4	12	2
Mvmt Flow	47	43	37	748	874	38
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1715	893	912	0	-	0
Stage 1	893	-	-	-	-	-
Stage 2	822	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	99	340	747	-	-	-
Stage 1	400	-	-	-	-	-
Stage 2	432	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	91	340	747	-	-	-
Mov Cap-2 Maneuver	91	-	-	-	-	-
Stage 1	366	-	-	-	-	-
Stage 2	432	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	49.9	0.5		0		
HCM LOS	E					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	747	-	91	340	-	-
HCM Lane V/C Ratio	0.049	-	0.514	0.128	-	-
HCM Control Delay (s)	10.1	-	80.5	17.1	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.2	-	2.3	0.4	-	-

HCM 6th TWSC

2021 Build Condition w/Squier Hall & Allison Hall

2: Oceanport Avenue (CR 11) & Signal Avenue

Weekday AM Peak Hour

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	27	25	37	711	587	29
Future Vol, veh/h	27	25	37	711	587	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	1	3	2
Mvmt Flow	29	27	40	773	638	32
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1507	654	670	0	-	0
Stage 1	654	-	-	-	-	-
Stage 2	853	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	133	467	920	-	-	-
Stage 1	517	-	-	-	-	-
Stage 2	418	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	123	467	920	-	-	-
Mov Cap-2 Maneuver	123	-	-	-	-	-
Stage 1	478	-	-	-	-	-
Stage 2	418	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	28.8	0.4	0			
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	920	-	123	467	-	-
HCM Lane V/C Ratio	0.044	-	0.239	0.058	-	-
HCM Control Delay (s)	9.1	0	43.2	13.2	-	-
HCM Lane LOS	A	A	E	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.9	0.2	-	-

HCM 6th TWSC

2021 Build Condition w/Squier Hall & Allison Hall

2: Oceanport Avenue (CR 11) & Signal Avenue

Weekday PM Peak Hour

Intersection						
Int Delay, s/veh	4.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	51	49	50	690	804	50
Future Vol, veh/h	51	49	50	690	804	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	4	12	2
Mvmt Flow	55	53	54	750	874	54
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1759	901	928	0	-	0
Stage 1	901	-	-	-	-	-
Stage 2	858	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	93	337	737	-	-	-
Stage 1	396	-	-	-	-	-
Stage 2	415	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	81	337	737	-	-	-
Mov Cap-2 Maneuver	81	-	-	-	-	-
Stage 1	346	-	-	-	-	-
Stage 2	415	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	67.5	0.7	0			
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	737	-	81	337	-	-
HCM Lane V/C Ratio	0.074	-	0.684	0.158	-	-
HCM Control Delay (s)	10.3	0	115.3	17.7	-	-
HCM Lane LOS	B	A	F	C	-	-
HCM 95th %tile Q(veh)	0.2	-	3.2	0.6	-	-



Fort Monmouth Lodging Tract Environmental Impact Statement

Somerset Fort Monmouth
Monmouth County, Oceanport, New Jersey

July 2020

SUBMITTED BY:

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SUBMITTED TO:

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Fort Monmouth Lodging Tract Environmental Impact Statement

**Somerset Fort Monmouth
Monmouth County, Oceanport, New Jersey**

TABLE OF CONTENTS

1.0	INTRODUCTION AND PROJECT DESCRIPTION	1
1.1	Introduction	1
1.2	Site Location	1
1.3	Project Description	1
2.0	EXISTING CONDITIONS	2
2.1	Climate	2
2.2	Coastal Climate Zone	2
2.3	Hurricane Risk	3
2.4	Air Quality	3
2.5	Noise	3
2.6	Physiography	4
2.7	Geology	4
2.8	Soils	4
2.9	Water Resources	4
2.9.1	Watersheds	4
2.9.2	Groundwater	5
2.9.3	Surface Water Drainage	5
2.9.4	Water Quality	5
2.9.5	Public Water and Sewer Utilities	7
2.10	Floodplain and Flood Prone Areas	7
2.10.1	Flood Zones	7
2.10.2	Floodplains	7
2.10.3	Sea Level Rise	8
2.11	Riparian Areas	8
2.12	Coastal Resources	9
2.13	WETLANDS	9
2.13.1	NJDEP Wetlands Mapping	9

Fort Monmouth Lodging Tract Environmental Impact Statement

Somerset Fort Monmouth Monmouth County, Oceanport, New Jersey

TABLE OF CONTENTS

2.13.2	National Wetland Inventory Mapping	10
2.13.3	Wetland Site inspection:	10
2.14	BIOLOGICAL RESOURCES	10
2.14.1	Vegetation	10
2.14.2	Wildlife	11
2.14.3	Aquatic Ecology	11
2.14.4	Endangered and Threatened Species	12
3.0	IMPACTS AND MITIGATION	13
3.1	Air Quality	13
3.2	Noise	14
3.3	Geology	14
3.4	Soils	14
3.5	Water Quality	14
3.6	Floodplains	15
3.7	Riparian buffers	16
3.8	Wetlands	16
3.9	Vegetation	16
3.10	Wildlife	16
3.11	Aquatic Ecology	17
3.12	Endangered and Threatened Species	17
3.13	Solid waste	17
3.14	Hazardous Materials	17
3.15	Secondary Impacts	18
4.0	REGULATORY COMPLIANCE STATEMENT	18
4.1	Subchapter 9. Special Areas (N.J.A.C. 7:7-9.0 et seq.)	18
4.1.1	Filled Water's Edge (N.J.A.C. 7:7-9.23)	18
4.1.2	Flood Hazard Areas (N.J.A.C. 7:7-9.25)	19
4.1.3	Riparian Zones (N.J.A.C. 7:7-9.26)	21

Fort Monmouth Lodging Tract Environmental Impact Statement

Somerset Fort Monmouth Monmouth County, Oceanport, New Jersey

TABLE OF CONTENTS

4.1.4	Wetlands (N.J.A.C. 7:7-9.27)	21
4.1.5	Wetlands Buffers (N.J.A.C. 7:7-9.28)	22
4.1.6	Historic and Archaeological Resources (N.J.A.C. 7:7-9.34)	23
4.1.7	Endangered or Threatened Wildlife or Plant Species Habitats (N.J.A.C. 7:7-9.36) ..	23
4.1.8	Geodetic Control Reference Marks (N.J.A.C. 7:7-9.45)	25
4.1.9	Lands and Waters Subject to Public Trust Rights (N.J.A.C. 7:7-9.48)	26
4.2	Subchapter 13. Requirements for Impervious Cover and Vegetative Cover for General Land Areas and Certain Special Areas (N.J.A.C. 7:7-3.0 et seq.)	26
4.2.1	Impervious Cover Requirements that Apply to Sites in the Upland Waterfront Development and CAFRA Areas (N.J.A.C. 7:7-13.3)	26
4.2.2	Vegetative Cover Requirements that Apply to Sites in the Upland Waterfront Development Areas and CAFRA Areas (N.J.A.C. 7:7-13.4)	26
4.2.3	Determining if a Site is Forested or Unforested (N.J.A.C. 7:7-13.5)	26
4.2.4	Coastal Planning Areas in the CAFRA Area (N.J.A.C. 7:7-13.15)	27
4.2.5	Boundaries for Coastal Planning Areas, CAFRA Centers, CAFRA Cores, and CAFRA Nodes; Non-mainland Coastal Centers (N.J.A.C. 7:7-13.16)	27
4.2.6	Impervious Cover Limits for a Site in the CAFRA Area (N.J.A.C. 7:7-13.17)	28
4.2.7	Vegetative Cover Percentages for a Site in the CAFRA Area (N.J.A.C. 7:7-13.18)	28
4.3	Subchapter 14. General Location Rules (N.J.A.C. 7:7-14.0 et seq.)	29
4.3.1	Basic Location Rule (N.J.A.C. 7:7-14.2)	29
4.3.2	Secondary Impacts (N.J.A.C. 7:7-14.3)	29
4.4	Subchapter 15. Use Rules (N.J.A.C. 7:7-15.0 et seq.)	30
4.4.1	Housing (N.J.A.C. 7:7-15.2)	30
4.5	Subchapter 16. Resource Rules (N.J.A.C. 7:7-16.0 et seq.)	30
4.5.1	Water Quality (N.J.A.C. 7:7-16.3)	30
4.5.2	Surface Water Use (N.J.A.C. 7:7-16.4)	31
4.5.3	Groundwater Use (N.J.A.C. 7:7-16.5)	31
4.5.4	Stormwater Management (N.J.A.C. 7:7-16.6)	32
4.5.5	Vegetation (N.J.A.C. 7:7-16.7)	32

Fort Monmouth Lodging Tract Environmental Impact Statement

Somerset Fort Monmouth Monmouth County, Oceanport, New Jersey

TABLE OF CONTENTS

4.5.6	Air Quality (N.J.A.C. 7:7-16.8).....	33
4.5.7	Public Access (N.J.A.C. 7:7-16.9).....	33
4.5.8	Scenic Resources and Design (N.J.A.C. 7:7-16.10)	33
4.5.9	Buffers and Compatibility of Uses (N.J.A.C. 7:7-16.11)	34
4.5.10	Traffic (N.J.A.C. 7:7-16.12).....	34
5.0	LIST OF CONTRIBUTORS	36
6.0	REFERENCES.....	37

LIST OF FIGURES

Figure 1	USGS Site Location Map
Figure 2	Street Map
Figure 3	Tax Map
Figure 4	Bedrock Geology Map
Figure 5	Soils Map
Figure 6	Watershed Map
Figure 7	FEMA Floodplain
Figure 8	1970 NJDEP Wetlands Map
Figure 9	2012 NJDEP Wetlands Map
Figure 10	NWI Wetlands Map
Figure 11	Photograph Location Map
Figure 12	Threatened/Endangered Species Map

LIST OF TABLES

Table 1	2014 Water Quality Assessment Report for Parkers Creek and Oceanport Creek
Table 2	2014 Draft 303(d) List of Water Quality Limited Waters With sublist 5 Subpart and Priority Ranking for TMDL Development
Table 3	Sources of Parameters Causing Use Impairment in Parkers Creek and Oceanport Creek
Table 4	State Listed Endangered and Threatened Species

Fort Monmouth Lodging Tract Environmental Impact Statement

**Somerset Fort Monmouth
Monmouth County, Oceanport, New Jersey**

TABLE OF CONTENTS

LIST OF ATTACHMENTS

Attachment A	NJDEP Tideland Grant Map 539-2172
Attachment B	Site Photographs
Attachment C	Agency Correspondence

1.0 INTRODUCTION AND PROJECT DESCRIPTION

1.1 Introduction

The applicant, Somerset Development, LLC, is proposing to construct a new residential development on a portion of the former Fort Monmouth site in the Borough of Oceanport, Monmouth County, New Jersey (Figures 1 and 2). The project area is located on a portion of Block 110, Lot 1, as shown on the Borough of Oceanport Tax Map (State Plane Coordinates (X)-620,760, (Y)-541,651) (Figure 3). The property center is located within the R-1 (Single-Family Residential) zone according to the Borough of Oceanport Zoning Map; however, the site is under the jurisdiction of the Fort Monmouth Economic Revitalization Authority (FMERA). As such, the FMERA Reuse Plan and the Land Use Regulations supersede the Master Plan, zoning ordinances, land use regulations, and zoning maps of the Borough of Oceanport, as well as those of Monmouth County. According to the FMERA Official Zoning Map, the site is located within the Horseneck Center. The proposed townhomes meet the definition for medium density residential, as defined by FMERA, which is a permitted use within the Horseneck Center zone.

The Coastal Area Facility Review Act (CAFRA) (N.J.S.A. 13:19) authorizes the New Jersey Department of Environmental Protection (NJDEP) to regulate a wide variety of residential, commercial, public, or industrial development such as construction, relocation, and enlargement of buildings and structures, and associated work such as excavation, grading, site preparation, and the installation of shore protection structures within the New Jersey Coastal Zone. Since the proposed project is regulated by CAFRA, Dewberry Engineers Inc. (Dewberry) has prepared an Individual Permit application that demonstrates compliance with the regulatory requirements set forth in the NJDEP's Coastal Zone Management Rules (N.J.A.C. 7:7 -1.1 et seq.).

1.2 Site Location

The former Fort Monmouth properties in Oceanport total approximately 419 acres and are bounded generally by New Jersey Transit's North Jersey Coast Line, Main Street and Oceanport Creek to the south, Parkers Creek to the north, and the former Fort properties in Eatontown to the west. The proposed project location is situated on the Lodging Area Parcel located in the Oceanport Reuse Area, on the south side of Parkers Creek.

The Lodging Area Parcel is an approximately 15.37-acre parcel of land in the Oceanport Reuse Area. It is currently improved with nine buildings—Buildings #270, #271, #328, #360, #361, #362, #363, #364, and #365, totaling 184,207 square feet. The buildings are all accessed via Signal Avenue in the Oceanport Reuse Area. A portion of the Property is located within the Fort Monmouth National Register Historic District. Building #270, known as Scriven Hall (Bachelors Officer's Quarters), Building #271, Gardner Hall (also Bachelors Officer's Quarters), and Building #328 Family Housing Garage, are considered contributing resources to the Historic District. The Allison Hall Parcel is located to the east of the Lodging Area; the Officer Housing Parcel is located to the south and west. The Buildings and the Historic District boundary are illustrated on Figure 4.

1.3 Project Description

The proposed project involves the demolition of existing structures, roadways, and parking areas on the site and the construction of 144 newly constructed townhome units and 36 affordable

residential units on an approximately 15.37-acre lot along Parkers Creek. The proposed townhome units and the affordable units would be located within two existing historic buildings (#270 and #271), in accordance with FMERA's Historic Preservation Design Guidelines. One of the historic buildings will be retrofitted with 16 units of one bedroom each that will be occupied only by seniors. The other historic building, which will not be restricted to seniors, will be retrofitted with 12 units of two bedrooms each, and eight units of one bedroom each. The other 144 units will be market units of three bedrooms with the option to make them four bedrooms. The parking requirements for these units is the same regardless of them having three or four bedrooms.

The site has an existing impervious coverage of approximately 8.07 acres; the proposed development would result in an impervious coverage of approximately 10.49 acres (approximately 68.25 percent). This is below the maximum allowable impervious percentage for the site.

2.0 EXISTING CONDITIONS

2.1 Climate

New Jersey is located in the mid-Atlantic coastal region of the U.S. Variable weather is an attribute of the state, which is affected by wet, dry, hot, and cold airstreams. Measurable precipitation falls on approximately 120 days; fall is the driest season with an average of eight days of measurable precipitation, while an average of nine to 12 days of measurable precipitation per month occurs during the rest of the year (ONJSC 1999). Mean annual precipitation between 1951 and 1980 was greater than 48 inches, while runoff was approximately 25 inches (USGS 1997). Temperature has been measured at 100°F or higher, and 0°F or below, at every weather station in the state. The average number of freeze-free days in the northern highlands is 163, while the central and southern interior and coastal regions of the state have 179 and 217 freeze-free days, respectively (ONJSC 2019).

2.2 Coastal Climate Zone

The study area is located in the coastal climate zone, one of five distinct climate zones in New Jersey (ONJSC 1999). In the coastal zone, continental and oceanic influences battle for dominance on a daily to weekly basis. In autumn and early winter, when the ocean is warmer than the land surface, the coastal zone will experience warmer temperatures than interior regions of the state. In the spring months, ocean breezes keep temperatures along the coast cooler. Being adjacent to the Atlantic Ocean, with its high heat capacity (compared to land), seasonal temperature fluctuations tend to be more gradual and less prone to extremes.

Sea breezes play a major role in the coastal climate. When the land is warmed by the sun, heated air rises, allowing cooler air at the ocean surface to spread inland. Sea breezes often penetrate five to 10 miles inland; however, under more favorable conditions, breezes can affect locations 25 to 40 miles inland. They are most common in spring and summer.

Coastal storms, often characterized as nor'easters, are most frequent between October and April. These storms track over the coastal plain or up to several hundred miles offshore, bringing strong winds and heavy rains. Most winters experience at least one significant coastal storm, with between five and 10 storms during active years. Tropical storms and hurricanes are also a special concern along the coast. In some years, they contribute a significant amount to the precipitation totals of the

region. Damage during times of high tide can be severe when tropical storms or nor'easters affect the region (ONJSC 2019).

2.3 Hurricane Risk

The town of Oceanport is in a high-risk hurricane zone, with 35 hurricanes recorded since 1930 (Homefacts 2019). Hurricane Sandy was the deadliest hurricane of the 2012 Atlantic hurricane season, as well as one of the costliest storms to impact the U.S. (Sullivan and McManus 2012). This resulted in extensive flooding in the borough along the Shrewsbury River (a tidal strait), Branchport Creek, Turtle Mill Brook, Oceanport Creek, and Parkers Creek, as well as properties further inland. Water levels in the borough reached six feet in the neighborhood between Blackberry Bay Park and Sommers Boy Scout Park, as well as parts of Gooseneck Point, Horseneck Point, and along many parts of the borough's water bodies. Lesser water levels of one to four feet were present in much of the borough's inland areas (Sullivan and McManus 2012).

2.4 Air Quality

The Federal Clean Air Act requires each state to attain and maintain specified air quality standards. Ambient Air Quality Standards have been promulgated by the federal government and by New Jersey for total suspended particulates (TSP), sulfur dioxide (SO₂), carbon monoxide (CO), nitrogen dioxide (NO₂), and lead. The New Jersey standards are generally the same as the federal standards for these pollutants. Primary air quality standards are set to protect human health and secondary standards are set to protect human welfare.

Locally, the project area is bordered primarily by resort residential homes, marinas, and wildlife management areas. Air quality for Oceanport is recorded as 71.4 percent good in 2019 (Best Places 2019).

Air emissions associated with the Project would be associated with non-road construction equipment working on the site and on-road trucks moving on public roads to and from the Project site. Emissions from these two source categories, primarily generated from their diesel engines, include NO_x, VOCs, SO₂, CO, and PM_{2.5}. Fugitive dust on the worksite can potentially be generated due to trucks and equipment moving on unpaved surfaces but can be significantly reduced through the use of best management practices relating to site work dust mitigation.

2.5 Noise

Noise is generally defined as unwanted sound. The day-night noise level (L_{dn}) is widely used to describe noise levels in any given community (U.S. Environmental Protection Agency [USEPA] 1978). The unit of measurement for L_{dn} is the "A"-weighted decibel (Dba), which closely approximates the frequency responses of human hearing. The primary source of noise in the Project Area is vehicular traffic on local roadways, local construction projects that may be underway, and operation of nearby businesses. Although noise level measurements have not been obtained in the Project Area, they can be approximated based on existing land uses. The typical L_{dn} in residential areas similar to the Project Area ranges from 39 to 59 Dba (USEPA 1978). The Project Area is characterized as residential and business development; therefore, existing sound levels are likely within this range.

2.6 Physiography

Oceanport is located within the Atlantic Coastal Plain Physiographic Province of New Jersey (NJDEP 2019). The Atlantic Coastal Plain Province is the largest physiographic province in the state and is described as a vast area with low elevation and little topographic variation. Differences in the amount and type of erosion, coupled with variability in underlying rock composition, influence the nature of sediments throughout the Coastal Plain (Sullivan and McManus 2012). In general, the Atlantic Coastal Plain, including Oceanport, is flat and slopes gently seaward. Oceanport's relatively extensive 14.8 miles of shoreline, combined with its coastal plain geography and location on the southern portion of the Shrewsbury River, makes it especially vulnerable to hurricanes and other severe storm events (Sullivan and McManus 2012).

2.7 Geology

The proposed project location is situated on the Tinton Formation (Kt) of the late Cretaceous period (Weller 1907; NJDEP 2019). The Tinton formation consists of glauconitic, clayey sand and sandy clay which are generally considered to form in marine environments characterized by slow rates of sedimentation. Certain Oceanport soils have heavy glauconite content indicative of the geological progressions and processes (Figure 4).

The project location is near the Raritan Bay–New York Bight area of seismic activity. A total of eight earthquakes are recorded as having had their epicenters within Monmouth County or immediately offshore between 1963 and 1990. The earthquakes typically ranged between 1.0 and 3.0 on the Richter scale; there are no records of substantial earthquake damage in the area (USACE 1999; cited by USACE 2009).

2.8 Soils

According to the Natural Resources Conservation Service *Web Soil Survey* (2019), the predominant soil type within the project site consists of Udorthents-Urban Land complex zero to five percent slopes (UdauB), or soils that have been altered by excavating or filling. Udorthents typically consist of loamy material and excavated soils placed as fill on floodplains, tidal wetlands, and on areas of moderately well-drained to very poorly-drained soils. The properties and characteristics of Udorthents differ greatly from place to place. Consequently, on-site investigation and evaluation are needed for most site development projects (Figure 5).

Urban land consists of areas covered by impermeable surfaces, such as dwellings, roads and streets, shopping centers, parking lots, and industrial parks. Included with these soils in mapping are soils that contain such materials as concrete, asphalt, bricks, metal, and glass. Also included are areas of soils that have not been disturbed.

2.9 Water Resources

2.9.1 Watersheds

The project area is located in the Shrewsbury River watershed (hydrologic unit code [HUC] 02030104080) which is part of Watershed Management Area (WMA) 12, as identified by NJDEP's Division of Watershed Management (NJDEP 2007). This WMA is an assemblage of coastal

subwatersheds, all or a portion of which fall into 56 municipalities in the Raritan Bay and Atlantic Coastal drainage basins. The majority of the municipalities are in Monmouth County, but several lie within the boundaries of Middlesex and Ocean Counties.

The project area is located within the Parkers Creek/Oceanport Creek subwatershed (HUC 02030104080020) in the Shrewsbury River watershed. The topography of this subwatershed is generally level, except for short, steeper slopes along streams and waterways. Waterways in the area are generally low-gradient and drain generally eastward toward the Atlantic Ocean, three to five miles away (Figure 6).

2.9.2 Groundwater

The water table is relatively shallow in the project area and fluctuates with tidal action in Parkers and Oceanport creeks. Depths to groundwater range between five and 12 feet below the ground surface (USACE, Mobile District 2004). The Tinton formation, and overlying sand and gravel deposits, act as semi-confining beds for groundwater (U.S. Army 2007; cited by USACE 2009).

At one time, a water-bearing aquifer in the Tinton geologic formation underneath the project area supplied many domestic wells with water (USACE 1999; cited by USACE 2009). However, potable water is piped from off-site and is not supplied from groundwater wells (USACE 1999; cited by USACE 2009). According to NJDEP data, there are no public community water supply wells or community wellhead protection areas (NJDEP 2008) in the vicinity of the project area.

2.9.3 Surface Water Drainage

The area surrounding the project site is predominantly developed; surface water drainage is to Parkers Creek. Specific surface drainage characteristics and water quality provisions are discussed in detail in the Stormwater Management Report prepared and submitted with this application.

2.9.4 Water Quality

The NJDEP has assigned different classifications with corresponding water quality standards (Standards) to various reaches of Parkers Creek and its tributaries. The Standards classify Parkers Creek as a Freshwater Category 2, Non-trout/Saline Estuarine Category 1 (FW2-NT/SE1) water, indicating that a saltwater/freshwater interface lies within the classified area. Where the waters are fresh, FW2-NT water-quality standards and beneficial uses apply; where the waters are saline, SE1 water-quality standards and beneficial uses apply.

The NJDEP is responsible for conducting and coordinating water quality assessments for all waters of the State. These assessments are reported through the New Jersey Integrated Water Quality Monitoring and Assessment Report (Integrated Report) (NJDEP 2014). The Integrated Reports provide effective tools for maintaining high-quality waters and improving the quality of waters that do not attain their designated uses (i.e., contain impaired water bodies). The Integrated Reports describe progress toward attainment of the designated uses of surface waters of the State, as specified in the New Jersey Surface Water Quality Standards (N.J.A.C. 7:9B). These include aquatic life, recreation, drinking water, fish consumption, shellfish consumption, and industrial and agricultural uses. Water quality monitoring data used for the 2014 Integrated Assessment was generally collected throughout 2014 and early 2015 and was used to identify high quality waters

that are fully supporting applicable designated uses, lower quality waters that are not supporting designated uses, and waters for which insufficient information is available to assess water quality.

A Total Maximum Daily Load (TMDL) is the amount of a pollutant that can be accepted by a waterbody without causing an exceedance of water quality standards or interfering with the Safe Drinking Water Act (SDWA) ability to use a waterbody for one or more of its designated uses. The allowable load is allocated to the various sources of the pollutant, such as stormwater and wastewater discharges, which require a New Jersey Pollutant Discharge Elimination System (NJPDES) permit to discharge, and nonpoint sources, which include stormwater runoff from agricultural areas and residential areas, along with a margin of safety. Provisions may also be made for future sources in the form of reserve capacity. An implementation plan is developed to identify how the various sources will be reduced to the designated allocations. Implementation strategies may include upgraded stormwater treatment, adoption of ordinances, reforestation of stream corridors, retrofitting stormwater systems, and other best management practices (BMPs).

The New Jersey Integrated Report (305(b) and 303(d)) Integrated Lists are required by the federal Clean Water Act to be prepared biennially and is a valuable source of water quality information. This combined report presents the extent to which New Jersey waters are attaining water quality standards and identifies waters that are impaired. Sub-list 5 of the Integrated List constitutes the list of waters impaired or threatened by pollutants, for which one or more TMDLs are needed. Tables 1 through 3 below summarizes the NJDEP's 2014 water quality findings for Parkers Creek and Oceanport Creek.

Table 1
2014 Water Quality Assessment Report for
Parkers Creek and Oceanport Creek (NJDEP 2014)

Aquatic Life General	Recreation	Water Supply	Shellfish	Fish Consumption
Not Supporting	Not Supporting	Supporting	Not Supporting	Not Supporting

Table 2
2014 Draft 303(d) List of Water Quality Limited Waters
With Sub-list 5 Subpart and Priority Ranking for TMDL Development (NJDEP 2014)

Parameter	Station	Cycle 1st Listed	Designated Use	Priority Ranking
pH	MCHD-32	2006	Aquatic Life	Medium
Mercury in Fish Tissue	Shrewsbury River at Oceanport	2006	Fish Consumption	Low
Phosphorus	MCHD-32, MCHD- 33	2002	Fish Consumption	Medium
DDT in Fish Tissue	Shrewsbury River at Oceanport	2006	Fish Consumption	Low
PCB in Fish Tissue	Shrewsbury River at Oceanport	2006	Aquatic Life	Low

Table 3
Sources of Parameters Causing Use Impairment in
Parkers Creek and Oceanport Creek (NJDEP 2014)

Parameter	Source1	Source2
pH	Urban Runoff/Storm Sewers	
Enterococcus	Urban Runoff/Storm Sewers	
E. Coli	Urban Runoff/Storm Sewers	
Mercury in Fish Tissue	Atmospheric Deposition - Toxics	
Phosphorus	Urban Runoff/Storm Sewers	Urban Runoff/Storm Sewers
DDT in Fish Tissue	Contaminated Sediments	Source Unknown
PCB in Fish Tissue	Contaminated Sediments	Source Unknown
Total Coliform	Urban Runoff/Storm Sewers	

2.9.5 Public Water and Sewer Utilities

Oceanport's potable water supply is provided by New Jersey American Water Company and sanitary service is provided by the Two Rivers Water Reclamation Authority (TRWRA). The sanitary treatment plant is located on Raccoon Island in Monmouth Beach and serves the following member communities: Fair Haven, Little Silver, Monmouth Beach, Oceanport, Shrewsbury, and West Long Branch, as well as Fort Monmouth. Additionally, Eatontown, Red Bank, Rumson, Sea Bright, Shrewsbury Township, and Tinton Falls are customers, sending some sanitary sewer flows to TRWRA (Sullivan and McManus 2012).

2.10 Floodplain and Flood Prone Areas

2.10.1 Flood Zones

The Federal Emergency Management Agency (FEMA) produces flood insurance rate maps for municipalities across the nation to identify flood hazard areas and assess flood risks and cooperates with state and local agencies to provide accurate flood risk data (FEMA 2017). FEMA classifies flood hazard zones as either Zone A, Zone AE, or Zone VE. Zones A, AE, and VE areas have a one-percent annual chance of flood events, which are known as the 100-year-flood zones. Additionally, Zone VE areas are subject to inundation by the one-percent-annual-chance flood events with added hazards due to increased wave action during storms (FEMA 2017). Floodway areas include the stream channel plus any adjacent areas that must be kept free of encroachment to allow the base flood waters to be carried downstream without substantial increase in water levels (FEMA 2017).

2.10.2 Floodplains

The floodplain in the project area is associated with Parkers Creek (FEMA 2018), which flows in an easterly direction to the Shrewsbury River. Floodwaters in Parkers Creek may reach eight feet in

elevation during a 100-year flood event. The FEMA floodplain in the project area is shown along the existing bulkhead on the south side of Parkers Creek, although the 8-foot elevation enters the site as shown on Figure 7.

The proposed project will include stormwater drainage measures to manage runoff from the site improvement features. The stormwater design will be in accordance with the NJDEP stormwater regulations. It is important to note that since the project is located within a regulated tidal flood plain, Stormwater Quantity, Groundwater Recharge, and net-fill regulations should not apply. Refer to the Stormwater Management Report for further information and details of the stormwater management design. The floodplain in the project area will not be adversely affected by the proposed site improvements.

2.10.3 Sea Level Rise

Over the next century and beyond, sea level rise will threaten natural resources and properties of the Borough of Oceanport. Historically, Sandy Hook and surrounding areas have experienced approximately 4.0 millimeters (mm) per year of sea level rise since the early 1900s. While 4.0 mm per year appears to be insignificant, if this trend were extrapolated into the future, Oceanport could expect a minimum vertical inundation of 0.4 meters (16 inches) of sea level rise by 2100 (Sullivan and McManus 2012). Further, sea level rise in the Mid-Atlantic is anticipated to exceed this historic trend, increasing 0.5 to 1.5 meters (20 to 60 inches) or greater by 2100 due to glacial and ice sheet melting. Without the consideration of future spring tides, 0.5 meters of sea level rise could inundate portions of approximately 370 parcels in Oceanport. A mid-range scenario could flood nearly a quarter of the community's parcels, while a 1.5-meter sea level rise scenario would be reflective of the inundation of a Category 2 hurricane (Sullivan and McManus 2012).

2.11 Riparian Areas

Riparian areas are dominated by woody or herbaceous vegetation and are located immediately adjacent to perennial, intermittent, and ephemeral streams, lakes, and estuarine-marine shorelines. Riparian areas differ from the uplands because of high levels of soil moisture, frequent flooding, and the unique assemblages of plant and animal communities found there. Through the interaction of their soils, hydrology, and biotic communities, riparian areas maintain many important physical, biological, and ecological functions. Riparian areas also provide important social benefits.

In recognition of the ecological importance of riparian zones, the NJDEP Flood Hazard Area Control Act rules have established regulatory standards regarding riparian zones (see N.J.A.C. 7:13-2.3(c), N.J.A.C. 7:13-4.1, and N.J.A.C. 7:13-11.2). The zone widths stipulated in the rules are as follows:

- 300 feet along any regulated water designated as a Category One water (and all upstream regulated waters within the same HUC-14 watershed);

- 150 feet along trout production waters and all upstream regulated waters; trout maintenance waters (and all upstream regulated waters within one linear mile of a trout maintenance water); waters flowing through an area that contains a threatened or endangered species of plant or animal, which is critically dependent on the regulated water for survival (and all upstream regulated waters within one mile of such habitat); and
- 50 feet along all other waters.

As described above, Parkers Creek has been designated as a FW2-NT/SE1 waterway in the project area. Because of this, a 50-foot wide riparian zone is required by the Flood Hazard Area Control Act rules. However, the existing 50-foot riparian buffer has been extensively modified by the previous development and land use activities at the site. The entire 50-foot buffer has been filled and modified and contains a bulkhead along Parkers Creek, lawn areas, a cyclone fence, access roads, and a building (#364). Therefore, the existing buffer has very low functional values in terms of groundwater, water quality, and flora/fauna habitat. The 50-foot buffer is illustrated on Figure 7.

2.12 Coastal Resources

The former Fort Monmouth facility is geographically located within the Coastal Zone and is subject to the Coastal Area Facility Review Act (CAFRA). Therefore, approval by the NJDEP Division of Land Use Regulation is being sought for the proposed site development. Similarly, approval by the NJDEP Division of Land Use Regulation would be required if any regulated activities are in conducted in Parkers Creek or state-mapped coastal wetlands. Approval by the Bureau of Tidelands Management is required for project activities on mapped, state-owned tidelands, if those lands have not already granted to the property owner or applicant by the state. Tidelands, also known as riparian lands, are all lands that are currently or formerly flowed by the mean high tide of a natural waterway. The State of New Jersey claims ownership of these tidelands and holds them in trust for the people of the state. Since tidelands are public lands, one must pay a fee and obtain a grant from the state to use these lands. Records from the Bureau of Tidelands indicate that a grant was issued to the United States of America on 11/6/44 for the shoreline of Parkers Creek on the west side of Oceanport Avenue. The granted area includes the entire waterfront of the subject site. The grant line is shown on Figure 8 and a copy of the tideland grant map is provided in Attachment A.

2.13 WETLANDS

The term wetlands refers to those areas that are inundated by surface water or groundwater with a frequency sufficient to support vegetative or aquatic life that requires saturated or seasonally saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, wet meadows, river overflows, mudflats, and natural ponds.

2.13.1 NJDEP Wetlands Mapping

The State of New Jersey has completed mapping of wetland areas using high-resolution aerial photography, in combination with field studies, to classify wetlands within the state. The 1970

NJDEP Wetland base map depicts a narrow fringe of tidal wetlands (Upper Wetland Boundary or UWB) dominated by High Vigor Smooth Cordgrass (*Spartina alterniflora*) in the floodplain of Parkers Creek, along the bulkhead (NJDEP 2019). The UWB line from the 1970 NJDEP Wetland Map for the project area is provided in Figure 8. NJDEP Freshwater Wetland mapping identifies a large tidal wetland complex on the northern side of Parkers Creek; however, no wetlands are shown along the bulkhead or on the upland portion of the project area itself (Figure 9).

2.13.2 National Wetland Inventory Mapping

National Wetlands Inventory (NWI) maps produced by the U.S. Fish and Wildlife Service (USFWS) were reviewed as part of the wetland delineation efforts performed within the project area. Wetlands on the NWI maps are classified using the methods described in “A Classification of Wetlands and Deepwater Habitats of the United States” by L. Cowardin (1979). The USFWS Wetland Mapper (accessed on August 22, 2019) indicates that the Parkers Creek stream system is classified as E1UBL6, which is defined as estuarine (E), subtidal with an unconsolidated bottom (UB), with a water regime classification of (L), which means the substrate is permanently flooded with tidal water Oligohaline (6): Coastal Salinity 0.5 to 5.0 parts per thousand (ppt). The NWI Wetland Map for the project area is provided in Figure 10.

2.13.3 Wetland Site inspection:

On November 11, 2019, Dewberry biologists performed a site inspection and noted a narrow fringe of coastal wetlands dominated by Smooth cordgrass and Common reed (*Phragmites australis*) in the floodplain of Parkers Creek. This wetland fringe is located on the waterward side of the existing bulkhead, within the Coastal Wetland boundary depicted on the 1970 NJDEP Wetland base map.

It is anticipated that the NJDEP will require a 50-foot-wide buffer for this wetland fringe. This wetland buffer is expected to coincide with the 50-riparian buffer. Photographs of the wetland fringe, Parkers Creek and the subject site are provided in Attachment B. A Photograph Location Map is provided as Figure 11.

2.14 BIOLOGICAL RESOURCES

Biological resources include the botanical (plant) and zoological (animal) related attributes of an area. Botanical resources include the vegetation (plant communities), and the zoological resources, including the invertebrate and vertebrate animals and animal communities. Rare, threatened, and endangered species and species of special concern also are considered within this section.

2.14.1 Vegetation

Common upland species in the former Fort Monmouth include oaks (*Quercus sp.*), American holly (*Ilex americana*), black cherry (*Prunus serotina*), birch (*Betula sp.*), sassafras (*Sassafras albidum*), blue huckleberry (*Gaylussacia frondosa*), and mountain laurel (*Kalmia latifolia*) (USACE 2004 and U.S. Army 2007; cited by USACE 2009). Wetter sites are dominated by red maple (*Acer*

rubrum) and sweetgum trees (*Liquidambar styraciflua*) and also support shrubs like sweet pepperbush (*Clethra alnifolia*), silky dogwood (*Cornus amomum*) and southern arrowwood (*Viburnum dentatum*) (USACE 2004; cited by USACE 2009). Reeds, sedges, and marsh grasses can be found along the banks of Oceanport Creek and Parkers Creek on the Main Post (U.S. Army 2007; cited by USACE 2009). Reeds, sedges, and marsh grasses can be found along the banks of Oceanport Creek and Parkers Creek on the Main Post (U.S. Army 2007). However, during our November 11, 2019 site inspection, no wetlands were found in the project area, other than the narrow fringe of coastal wetlands described above. The remainder of the project area consists of developed areas with open lawns, scattered trees, and ornamental shrubs used for landscaping.

2.14.2 Wildlife

2.14.2.1 Amphibians and Reptiles

Amphibians common to the former Fort Monmouth area include red back salamander (*Plethodon cinereus*), spring peeper (*Pseudacris crucifer*), wood frog (*Lithobates sylvaticus*), bullfrog (*Lithobates catesbeianus*), and green frog (*Rana clamitans*). Commonly seen reptiles in the former Fort Monmouth area include the common snapping turtle (*Chelydra serpentina*), northern brown snake (*Storeria dekayi*), northern water snake (*Nerodia sipedon*), and eastern garter snake (*Thamnophis sirtalis*) (USACE 1999 and U.S. Army 2007; cited by USACE 2009).

2.14.2.2 Birds

Birds commonly observed on the former Fort Monmouth facility include American crow (*Corvus brachyrhynchos*), American robin (*Turdus migratorius*), European starling (*Sturnus vulgaris*), brown-headed cowbird (*Molothrus ater*), mourning dove (*Zenaidura macroura*), blue jay (*Cyanocitta cristata*), Black capped chickadee (*Poecile atricapillus*), tufted titmouse (*Baeolophus bicolor*), mallard (*Anas platyrhynchos*), and Canada goose (*Branta canadensis*) (USACE 2004 and U.S. Army 2007; cited by USACE 2009).

2.14.2.3 Mammals

Mammals found within or nearby the project area are common species that are tolerant of human activity and developed areas. Commonly observed species include eastern cottontail rabbit (*Sylvilagus floridanus*), woodchuck (*Marmota monax*), muskrat (*Ondatra zibethicus*), gray squirrel (*Sciurus carolinensis*), skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), chipmunk (*Tamias striatus*), red fox (*Vulpes vulpes*), and white-tailed deer (*Odocoileus virginianus*) (USACE 2004 and U.S. Army 2007; cited by USACE 2009).

2.14.3 Aquatic Ecology

2.14.3.1 Fish

The lower portion of Parkers Creek adjacent to the project area is a suitable estuarine habitat for

spawning and nursery for several species of migratory fish. Species likely to be present include Alewife (*Alosa pseudoharengus*), Atlantic herring (*Clupea harengus*), summer flounder (*Paralichthys dentatus*), weakfish (*Cynoscion regalis*), bluefish (*Pomatomus saltatrix*), red hake (*Urophycis chuss*), white hake (*Urophycis tenuis*), and silver hake (*Merluccius bilinearis*) (NOAA 2019).

2.14.3.2 Essential Fish Habitat

The objective of an essential fish habitat (EFH) assessment is to determine the presence of and potential impacts on relevant commercial, federally managed fisheries species within a proposed action area. Based on a 2019 review of the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA-NMFS) EFH Mapping System, the portion of Parkers Creek downstream of the project area is designated as EFH for various life stages (eggs, larvae, juvenile and adult) for Longfin Inshore Squid (*Doryteuthis pealeii*), Bluefish, Atlantic Butterfish (*Peprilus triacanthus*), Summer Flounder, Winter Flounder (*Pseudopleuronectes americanus*), Little Skate (*Leucoraja erinacea*), Atlantic Herring, Red Hake, Silver Hake, Windowpane Flounder (*Scophthalmus aquosus*), Winter Skate (*Leucoraja ocellata*), and Clearnose Skate (*Raja eglanteria*). There are no Habitat Areas of Particular Concern (HAPC) of EFH Areas Protected from Fishing (EFHA) identified within the project area.

2.14.3.3 Submerged Aquatic Vegetation

Submerged aquatic vegetation (SAV) is an important ecological resource in bay ecosystems for several reasons. The grasses provide food and shelter to a variety of animals. They are eaten directly by waterfowl and small mammals and they provide detritus to fish, snails, and amphipods. SAV beds are also primary nursery grounds for crabs and many fish species and are responsible for the absorption of nutrients in the water column while producing oxygen through photosynthesis. Dense SAV beds also dampen wave energy assisting in the control of erosion and turbidity. Although the Shrewsbury River supports limited areas of SAV, no SAV species are present in Parkers Creek in the project area.

2.14.3.4 Marine Shellfish

The National Shellfish Sanitation Program (NSSP) classifies shellfish growing waters and determines whether and how the harvest of shellfish from those waters must be restricted in order to protect the public from health risks associated with the consumption of shellfish. The classification for Parkers Creek is “restricted” (NJDEP 2019) due to water quality.

2.14.4 Endangered and Threatened Species

2.14.4.1 U.S. Fish and Wildlife Service

The USFWS Information for Planning and Consultation (IPaC) database was reviewed for potential endangered, threatened, or rare (ETR) species that may be present within the project area.

Additional information was received from the USFWS New Jersey Ecological Services Field Office in regard to potential ETR species in the project area. No ETR species or critical habitats were listed by the USFWS within the project area. The IPaC report did list a number of migratory birds of conservation concern that may utilize habitat within the project area. Many of the listed species may utilize vegetated portions of the project area, either for breeding or foraging purposes. The IPaC report is provided in Attachment C.

2.14.4.2 New Jersey Natural Heritage Program

Along with the data request from the USFWS, the New Jersey Natural Heritage Program (NJNHP) was contacted to provide a list of ETR species at the State level. The NJNHP search of the Natural Heritage Database provided a list of ETR species that have been documented within the project area. They are listed in Table 4. The NJNHP threatened and endangered (T&E) species findings letter is provided in Attachment C.

Table 4
State Listed Endangered and Threatened Species

Common Name	Scientific Name	State Protection Status	Habitat
Osprey	<i>Pandion haliaetus</i>	Threatened	Nesting onsite; Foraging
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Endangered	Foraging
Least Tern	<i>Sternula antillarum</i>	Endangered	Foraging
Black-crowned Nightheron	<i>Nycticorax nycticorax</i>	Threatened	Foraging

On November 11, 2019, Dewberry biologists inspected the project area and noted two Osprey nesting platforms along the shoreline of Parkers Creek, one near the central portion of the bulkhead (083-B-008) and one just to the southwest of the project area (083-B-017). A third nesting platform (083-B-028) is located somewhat further to the south (Figure 12). No Ospreys were observed in the area, likely because they had already migrated south for the winter. However, they are expected to return to the area in early 2020.

3.0 IMPACTS AND MITIGATION

3.1 Air Quality

The proposed project will not degrade local air quality due to dust, equipment exhaust or burning debris. No debris generated during the construction of the project will be burned; it will be transported off-site and recycled/disposed of in accordance with local, state, and federal requirements. Air quality impacts during the construction of the proposed project are anticipated to be both short-term and relatively minor, and restricted to fugitive dust from ground-disturbing

and demolition activities. The Contractor will employ dust suppression techniques, should more than minimal levels of dust be generated at the site.

3.2 Noise

The proposed project will have no perceptible increase in ambient noise levels at noise-sensitive receptors in the area due to construction activities. Construction activities associated with the proposed project will temporarily increase the ambient noise levels in the immediate vicinity of the project area during periods of demolition and heavy construction. However, there are no sensitive receptors in the immediate vicinity of the project area. Off-site impacts, from equipment and material egress/ingress, are anticipated to be minimal if any.

3.3 Geology

The construction of the proposed project would cause disturbance of subsurface materials by excavations and the foundations for structures. Short-term dewatering may be required during construction which would depress the water table locally for a short period, and induce flow toward the excavation. This impact would be temporary and would not extend significantly beyond project boundaries. Installation of deep foundation elements such as piles may result in vibratory impacts and possibly minor short-term settlement of adjacent loose soils/sediments, but will not result in significant geologic impacts.

3.4 Soils

Disturbance of soils in the project area may increase the potential for short-term erosion and sedimentation, including turbidity in Parkers Creek. Construction activities would be conducted pursuant to an approved Soil Erosion and Sediment Control Plan (SESCP) and, therefore, are not expected to result in significant impacts. The plan will include procedures such as:

- Taking precautions to minimize spillage and tracking of sand and silt on the road surfaces and prompt clean up should they occur;
- Using silt fences, hay bales, and stabilized entrances to construction sites, as necessary, for control of erosion and sedimentation;
- Placing filter media around existing catch basin inlets/grates to filter stormwater;
- Placing mulch or suitable ground cover immediately after a slope is graded; and
- Seeding of slopes simultaneously with construction activities; and using turbidity curtains for construction along the waterfront.

3.5 Water Quality

Potential impacts to surface water quality relate mainly to non-point source stormwater runoff impacts. The greatest potential for long-term impacts to surface water quality associated with this project would be increased impervious surface contaminants in stormwater runoff reaching the wetlands and waterways in the project area. Some of the most common pollutants found on roadway surfaces include bacteria, heavy metals, inorganic salts, nutrients (e.g., nitrogen, phosphorus),

organic matter, pesticides, and dropped or windblown particulates, such as dust, clay, glass, and silt. These pollutants find their way into the surrounding environment via precipitation and stormwater runoff. The heaviest pollutant loads occur immediately after rainfall, flushing the contaminants from roadway surfaces. Such short-term loadings result in an elevated biological oxygen demand and an increase in heavy metal and chemical contamination settlement into the riverbed sediments.

The following measures would be implemented in order to minimize project impacts on surface waters:

- A Stormwater Pollution Prevention Plan (SWPPP) would be completed in accordance with requirements under New Jersey code;
- Precautions would be taken to minimize spillage and tracking of sand and silt on the road surfaces and prompt clean-up would be initiated should they occur;
- Silt fences, hay bales, and stabilized entrances to construction sites would be deployed in accordance with the SWPPP;
- Placing filter media around existing catch basin inlets/grates to filter stormwater;
- Mulch or other suitable ground cover would be placed on all slopes following grading;
- Slopes would be seeded with plant materials approved by the appropriate local jurisdictions and the Soil Conservation District;
- The drainage and stormwater management plan for the project would meet NJDEP stormwater management planning requirements and would provide for the treatment of contaminants in stormwater runoff from the construction areas.
- The stormwater management plan developed for the project would meet NJDEP Stormwater Regulation requirements, and provide improvements over existing conditions. A SESCO would be prepared and implemented to address temporary surface water impacts during construction.

3.6 Floodplains

The proposed project will not adversely impact the floodplain of Parkers Creek. Since the project area drains to a regulated tidal floodplain, the NJDEP should not require that the project meet the provisions of the Stormwater Quantity, Groundwater Recharge or the net-fill regulations. There will be no significant change in flood storage capacity and no significant adverse impacts on the surrounding floodplain. Specific surface stormwater drainage and water quality provisions are discussed in detail in the Stormwater Management Report prepared for the project.

Since most of the project area is already fully developed, many of the traditional approaches for minimizing and avoiding floodplain impacts identified in the procedures of implementation of Executive Order (EO) 11988 are not applicable to this Project. The following measures would be implemented in order to minimize project impacts on floodplains:

- Any contaminated soils or groundwater encountered during construction activities would be disposed of in accordance with all local, state, and federal regulations; and

- Vegetation removal would be minimized, including removal of existing trees, and all re-vegetation activities would be in accordance with accepted practices, including appropriate species selection.

3.7 Riparian buffers

As described above, the 50-foot riparian buffer adjacent to Parkers Creek has been extensively modified by former development and land use activities at Fort Monmouth. The proposed project will use the 50-foot buffer as green space, to the maximum extent practicable, and for a public access walkway. Therefore, the project will not adversely impact the riparian buffer.

3.8 Wetlands

The project does not involve activities on the waterward side of the existing bulkhead. Therefore, the project will not impact the wetlands in the floodplain of Parkers Creek.

As described above, the 50-foot wide coastal wetland buffer, where it exists, is expected to coincide with the 50-foot wide riparian buffer. The 50-foot-wide coastal wetland buffer adjacent to Parkers Creek has been extensively modified by former development and land use activities at Fort Monmouth. The proposed project will use the 50-foot buffer as green space, to the maximum extent practicable, and for a public access walkway. Therefore, the project will not adversely impact the coastal wetland buffer.

3.9 Vegetation

The proposed project involves the clearing of vegetation. Much of the vegetation is located in previously developed and disturbed land in the project area.

Mitigation Measures and BMPs: The following measures would be implemented in order to minimize project impacts on upland vegetation:

- Vegetation clearing would be done outside of any timing restrictions, as applicable, to minimize impacts to nesting birds;
- Disturbed areas would be reseeded or landscaped in accord with species lists provided by local jurisdictions and disturbed areas and the presence of invasive species would be monitored and controlled as required; and
- Impacts to areas outside of the limits of construction would be avoided.

3.10 Wildlife

Wildlife that is found in the project area at the time of construction would be displaced during the vegetation clearing and demolition activities associated with the construction of the project. As described above, vegetation clearing would be done outside of any timing restrictions, as applicable, to minimize impacts to nesting birds. Impacts on small mammals are expected to be negligible, as there is very limited habitat in the project area.

3.11 Aquatic Ecology

Short-term impacts on aquatic ecology can occur due to noise, turbidity, and runoff during construction. There is no work proposed waterward of the bulkhead; therefore, no impacts to sessile or slow-moving aquatic organisms is anticipated. An indirect impact is increased turbidity due to potential runoff from the upgradient work locations and the subsequent but relatively minor sedimentation effects. Sediment suspension could occur, but is expected to be limited to the immediate work area and not to be a long-term condition, since a combination of BMPs will reduce soil erosion and settling/tidal flushing would attenuate the turbidity.

3.12 Endangered and Threatened Species

As described above in Section 2.14.4.2, there are three Osprey nesting platforms in the vicinity of the proposed project. During the project construction period, it is proposed to cover the two closest nesting platforms with tarps or “pyramid-shaped” plywood to keep the Ospreys from nesting. Since two pairs of Ospreys will potentially be prevented from nesting and reproducing by this process, the project will adversely impact the local population of a State-listed threatened species. This adverse impact also would not be in accordance with the requirements of the Federal Migratory Bird Species Treaty Act (16 U.S.C. 703-712). The applicant intends to submit a draft Osprey mitigation proposal to the NJDEP for review and approval.

3.13 Solid waste

There will be no adverse impacts related to solid waste management from the project once the construction is complete. There will be a temporary increase in solid waste due to the short-term construction activities; any solid waste generated will be properly recycled or disposed of off-site by the Applicant’s licensed recycler/waste hauler. Soils will be reused onsite to the greatest extent possible; however, it is anticipated that a portion of the existing soils that are excavated will not be suitable for reuse. Soils hauled off-site will be transported by licensed haulers and reused or disposed in accordance with applicable regulations. There are local disposal facilities near the project location that are capable of handling solid waste associated with construction activities.

3.14 Hazardous Materials

The proposed project is not expected to require the use of land that may contain hazardous substances or may be contaminated. During the construction of the proposed project, soils will be excavated for grading, filling and planting of vegetation. If any of the soils excavated are suspected of being contaminated based on a field assessment, soil samples will be obtained. The samples will be taken to an NJDEP-certified laboratory and analyzed for the list of priority pollutants. Soils with elevated levels of pollutants will be disposed of off-site in accordance with federal and state regulations.

Typically, non-hazardous soil can be beneficially reused off-site as landfill cover or final cover for landfill closures. If any soils or other materials removed during the construction are determined to

be hazardous wastes, the material will be disposed of at a USEPA-approved hazardous waste disposal facility, under the Applicant's Resource Conservation and Recovery Act (RCRA) hazardous waste ID number. All waste disposal activities associated with the proposed project will comply with all federal, state, and local regulations regarding the identification, removal, transportation, and disposal of hazardous and non-hazardous material.

3.15 Secondary Impacts

The proposed project will induce positive secondary impacts in the region because of the proposed construction activities. These economic impacts will benefit surrounding communities during construction by increasing employment opportunities and expenditures on local services and materials. Further, these positive secondary impacts will continue once the project is complete and the housing units become occupied; residents will patronize local establishments, supporting the economy of the surrounding towns. The proposed project will not result in property acquisition, residential relocation, division or disruption of established communities, or disruption of planned development. Negative Secondary Impacts are not anticipated from the project.

4.0 REGULATORY COMPLIANCE STATEMENT

This statement of compliance with the Coastal Zone Management Rules (N.J.A.C. 7:7-1.1 et seq.) addresses those rules applicable to the proposed project. Each of the rules' acceptability criteria is cited by number; subsections of the rules not relevant to the project are not included. A rule response discussing the project's compliance is provided in italics after each criterion is stated.

4.1 Subchapter 9. Special Areas (N.J.A.C. 7:7-9.0 et seq.)

4.1.1 Filled Water's Edge (N.J.A.C. 7:7-9.23)

(a) Filled water's edge areas are existing filled water, wetland, or upland areas lying between wetlands or water areas, and either (a)1 or 2 below, whichever is closer to the water:

1. The upland limit of fill; or
2. The first paved public road or railroad landward of the adjacent water area.

(b) Filled water's edge areas shall be determined through analysis of historic data including U.S. Department of Agriculture soil surveys, Tidelands maps, or aerial photography. Some existing or former dredged material disposal sites and excavation fill areas are filled water's edge.

(c) The "waterfront portion" is defined as a contiguous area at least equal in size to the area within 100 feet of navigable water, measured from the mean high water line. This contiguous area must be accessible to a public road and occupy at least 30 percent of its perimeter along the navigable water's edge.

(d) On filled water's edge sites with direct water access (that is, those sites without extensive intertidal shallows or wetlands between the upland and navigable water), development shall

comply with (d) 1 through 3 below unless it is demonstrated that a water-dependent use is not feasible on the site in accordance with (e) below. Where it is determined that a water-dependent use is not feasible, the site may be developed with a non-water-dependent use.

(e) The Department shall consider the following factors when determining whether a water dependent development is feasible on a filled water's edge site:

1. Length of water frontage on the site and the corresponding area of upland to support a water-dependent use on the site;
2. Presence of special areas, such as shellfish habitat, submerged vegetation habitat, intertidal and subtidal shallows, or wetlands between the upland and navigable water that would preclude approval of a water-dependent development;
3. Incompatibility of a water-dependent development with the surrounding development;
4. Land or water contamination such that construction of a water-dependent use will pose an ecological risk or endanger public health; and
5. Conditions uniquely affecting the particular property that result in peculiar and exceptional practical difficulties in the development of a water-dependent development, such as the depth of water adjacent to the site, unusual current or other natural conditions, or the ability to obtain authority from the State to use tidelands necessary to support a water-dependent use on the site.

Response: As described above, the existing water's edge has been filled and modified at least 50 feet, and up to 100 feet or more, by the previous development and land use activities at the site. There is a bulkhead along Parkers Creek, lawn areas, a cyclone fence, access roads, a building (#364), and a tennis court within 100 feet of the water's edge. The on-site Osprey nesting platform and the wetland and riparian buffers also are located in the filled water's edge area. As described above, there is a narrow fringe of coastal wetlands on the waterward side of the bulkhead. There also is a wide expanse of intertidal shallows along Parkers Creek.

The project proposes new development within this existing, modified 100-foot strip, as shown on the site plans; it does not dedicate 100 feet of the Filled Waters Edge to public use. Instead, it proposes to allow the use of a strip (a promenade) along the existing bulkhead that would be dedicated to public use, which has been conceptually approved for the Allison Hall development, east of the project site.

The proposed project includes a public walkway that provides public access to Parkers Creek and adjacent natural areas. Refer to the proposed site plans for further information and details of the public walkway associated with the proposed project. Therefore, the project complies with this rule.

4.1.2 Flood Hazard Areas (N.J.A.C. 7:7-9.25)

(a) Flood hazard areas are areas subject to flooding from the flood hazard area design flood, as defined by the Department under the Flood Hazard Area Control Act rules at N.J.A.C. 7:13. Flood

hazard areas include those areas mapped as such by the Department, areas defined or delineated as an A or a V zone by FEMA, and any unmapped areas subject to flooding by the flood hazard area design flood. Flood hazard areas are subject to either tidal or fluvial flooding and the extent of flood hazard areas shall be determined or calculated in accordance with the procedures at N.J.A.C. 7:13-3.

(b) In a tidal flood hazard area below the mean high water line, this section shall apply only to the following activities:

1. Development of habitable buildings; and
2. Construction of railroads, roadways, bridges and/or culverts.

(f) Development in flood hazard areas shall conform with the applicable design and construction standards of the following:

1. The Flood Hazard Area Control Act, N.J.S.A. 58:16A-50 et seq., and implementing rules at N.J.A.C. 7:13, except in lands regulated under the Wetlands Act of 1970, N.J.S.A. 13:9A-1 et seq., pursuant to N.J.S.A. 58:16A-60;
2. The Uniform Construction Code, N.J.A.C. 5:23; and
3. The Federal flood reduction standards, 44 C.F.R. Part 60.

(g) Development in a flood hazard area shall comply with the requirements for impervious cover and vegetative cover under N.J.A.C. 7:7-13.

(h) If endangered and/or threatened wildlife or species habitat is present in the flood hazard area such that the area is also an endangered or threatened wildlife or plant species habitat special area in accordance with N.J.A.C. 7:7-9.36, then the requirements of N.J.A.C. 7:7-9.36, Endangered or threatened wildlife or plant species habitats, shall apply.

(i) For the purposes of this section, if a term is defined in this chapter and in the Flood Hazard Area Control Act rules at N.J.A.C. 7:13, the definition in N.J.A.C. 7:13 shall govern. For any term used in this section that is not defined or otherwise described in this chapter but that is defined or described in the Flood Hazard Area Control Act rules at N.J.A.C. 7:13, the definition or description in N.J.A.C. 7:13 shall apply.

Response: The proposed project will comply with the applicable sections of the above rules, including those related to proposed construction in the flood hazard area, the requirements for impervious and vegetative cover, and those related to endangered and/or threatened wildlife or species habitat, all of which are discussed below.

It must be noted that since the project area drains to a regulated tidal floodplain, the NJDEP should not require that the project meet the provisions of the Stormwater Quantity, Groundwater Recharge or the net-fill regulations. There will be no significant change in flood storage capacity and no significant adverse impacts on the surrounding floodplain. Specific surface storm water drainage and water quality provisions are discussed in detail in the Stormwater Management Report prepared and submitted with this application. Therefore, the project complies with this rule.

4.1.3 Riparian Zones (N.J.A.C. 7:7-9.26)

(a) A riparian zone is the land and vegetation within and adjacent to a regulated water. A riparian zone exists along both sides of every regulated water and includes the regulated water itself, except as provided in (b) below. The extent of a riparian zone is determined in accordance with (c), (d), and (e) below.

h. (b) There is no riparian zone within or along the following:

1. The Atlantic Ocean;
2. The barrier island complex;
3. Any lawfully existing manmade lagoon;
4. Any lawfully existing stormwater management basin or wastewater treatment pond Any segment of a regulated water enclosed within a lawfully existing pipe, culvert or bridge; an Any lawfully existing, manmade open channel that was created to convey stormwater, provided the channel is fully lined with manmade impervious material, such as a concrete low-flow channel within a stormwater basin or a ditch completely lined with concrete or asphalt.

(h) Development in riparian zones shall conform with the requirements of the Flood Hazard Area Control Act Rules for a permit-by-rule at N.J.A.C. 7:13-6 and 7, a general permit-by-certification at N.J.A.C. 7:13-6 and 8, a general permit at N.J.A.C. 7:13-6 and 9, or an individual permit at N.J.A.C. 7:13-10, 11, and 12, as applicable.

(i) If endangered and/or threatened wildlife or species habitat is present within a riparian zone the requirements of N.J.A.C. 7:7-9.36, Endangered or threatened wildlife or plant species habitats, shall apply.

Response: As described above in Section 3.7, the project will not adversely impact the riparian buffer. Therefore, the project complies with this rule.

4.1.4 Wetlands (N.J.A.C. 7:7-9.27)

(a) Wetlands or wetland means an area that is inundated or saturated by surface water or groundwater a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation.

1. Wetlands areas are identified and mapped on the following:

- i. National Wetlands Inventory Maps produced by the U.S. Fish and Wildlife Service at a scale of 1:24,000 (generalized locations only);
- ii. Coastal wetland maps, pursuant to the Wetlands Act of 1970 (N.J.S.A. 13:9A-1 et seq.) prepared by the DEP at a scale of 1:2400; and
- iii. Freshwater wetland maps prepared by DEP at a scale of 1:12000 (generalized locations only).

Note: Maps referenced in (a) 1ii above are available from the Division of Land Use Regulation by e-mailing TidelandsMapServices@dep.state.nj.us and those

referenced in (a) liii above are available through NJ-Geoweb
(see <http://www.nj.gov/dep/gis/newmapping.htm>).

2. Generalized locations of some wetland types can be found in county soil surveys prepared by the U.S. Department of Agriculture, Soil Conservation Service.
3. The maps referenced under (a)li, iii, and 2 above shall be useful as an indicator to assist in the preliminary determination of the presence or absence of wetlands only. They have been determined to be unreliable for the purposes of locating the actual wetlands boundary on a specific site.
4. All tidal and inland wetlands, excluding the delineated tidal wetlands defined pursuant to N.J.A.C. 7:7-2.3, shall be identified and delineated in accordance with the USEPA three-parameter approach (that is, hydrology, soils and vegetation) specified under N.J.A.C. 7:7A-1.3 of the Freshwater Wetlands Protection Act Rules.

Response: As described above, the 1970 NJDEP Wetland base map depicts a narrow fringe of tidal wetlands dominated by High Vigor Smooth Cordgrass (Spartina alterniflora) in the floodplain of Parkers Creek, on the waterward side of the bulkhead. On November 11, 2019, Dewberry biologists inspected the site and noted this wetland fringe, along portions of the bulkhead, containing both Smooth cordgrass and Common reed (Phragmites australis) in the floodplain of Parkers Creek. The project does not propose activities on the waterward side of the existing bulkhead. Therefore, the project will not impact the wetlands in the floodplain of Parkers Creek and complies with this rule.

4.1.5 Wetlands Buffers (N.J.A.C. 7:7-9.28)

(a) Wetlands buffer or transition area means an area of land adjacent to a wetland which minimizes adverse impacts on the wetlands or serves as an integral component of the wetlands ecosystem. Wider buffers than those noted below may be required to establish conformance with this chapter, including, but not limited to, N.J.A.C. 7:7-9.36 and 9.37.

1. A wetlands buffer or transition area of up to 150 feet in width shall be established adjacent to all wetlands defined and regulated under the Freshwater Wetlands Protection Act. (Refer to the Freshwater Wetland Protection Act Rules, N.J.A.C. 7:7A, for further guidance).
2. For all other wetlands, including wetlands regulated under the Wetlands Act of 1970, a wetland buffer of up to 300 feet shall be established.

(b) Subject to (a) above, all wetlands buffers (that is, transition area) associated with wetlands subject to the Freshwater Wetlands Protection Act shall be regulated in accordance with the Freshwater Wetlands Protection Act Rules, N.J.A.C. 7:7A.

(c) Development is prohibited in a wetlands buffer around all other wetlands, unless it can be demonstrated that the proposed development will not have a significant adverse impact and will cause minimum feasible adverse impact, through the use of mitigation where appropriate on the wetlands, and on the natural ecotone between the wetlands and surrounding upland. The precise geographic extent of the actual wetlands buffer required on a specific site shall be determined on a case-by-case basis using these standards.

Response: It is anticipated that the NJDEP will require a 50-foot buffer for the wetland fringe located along portions of the edge of Parkers Creek, adjacent to the bulkhead (Figure 9). This 50-foot wide coastal wetland buffer, where it exists, is expected to coincide with the 50-foot wide riparian buffer. The 50-foot-wide coastal wetland buffer adjacent to Parkers Creek has been extensively modified by former development and land use activities at Fort Monmouth. The proposed project will use the 50-foot buffer as green space, to the maximum extent practicable, and for a public access walkway. Therefore, the project will not adversely impact the coastal wetland buffer and complies with this rule.

4.1.6 Historic and Archaeological Resources (N.J.A.C. 7:7-9.34)

- (a) Historic and archaeological resources include objects, structures, shipwrecks, buildings, neighborhoods, districts, and man-made or man-modified features of the landscape and

seascape, including historic and prehistoric archaeological sites, which either are on or are eligible for inclusion on the New Jersey or National Register of Historic Places.

- (b) Development that detracts from, encroaches upon, damages, or destroys the value of historic and archaeological resources is discouraged.

- (c) Development that incorporates historic and archaeological resources in sensitive adaptive reuse is encouraged.

Response: A portion of the Property is located within the Fort Monmouth National Register Historic District. Buildings #270, #271, and #328 are located within this District. The proposed development includes townhome units and affordable units within buildings #270 and #271, respectively, to be retrofit in accordance with FMERA's Historic Preservation Design Guidelines and State Historic Preservation Office requirements. Proposed improvements to building #328 also would follow these guidelines. Visual impacts to the historic structures from the site development will be minimized via aesthetic design and landscaping (see site plans) and in accordance with the guidelines and requirements identified above. Therefore, the project complies with this rule.

4.1.7 Endangered or Threatened Wildlife or Plant Species Habitats (N.J.A.C. 7:7-9.36)

- (a) Endangered or threatened wildlife or plant species habitats are terrestrial and aquatic (marine, estuarine, or freshwater) areas known to be inhabited on a seasonal or permanent basis by or to be critical at any stage in the life cycle of any wildlife or plant identified as "endangered" or "threatened" species on official Federal or State lists of endangered or threatened species, or under active consideration for State or Federal listing. The definition of endangered or threatened wildlife or plant species habitats includes a sufficient buffer area to ensure continued survival of the population of the species as well as areas that serve an essential role as corridors for movement of endangered or threatened wildlife. Absence of such a buffer area does not preclude an area from being endangered or threatened wildlife or plant species habitat.

1. Areas mapped as endangered or threatened wildlife species habitat on the Department's Landscape Maps of Habitat for Endangered, Threatened and Other Priority Wildlife (known hereafter as Landscape Maps) are subject to the requirements of this section unless excluded in accordance with (c) 2 below. Buffer areas, which are part of the endangered or threatened wildlife species habitat, may extend beyond the mapped areas. The Department's Landscape Maps, with a listing of the endangered and threatened species within a specific area, are available from the Department's Division of Fish and Wildlife, Endangered and Nongame Species Program at the Division's web address, www.state.nj.us/dep/fgw/ensphome.
2. Information on the areas mapped as endangered or threatened plant species habitat on the Department's Landscape Maps and the occurrence of endangered or threatened plant species habitat is available from the Department's New Jersey Natural Heritage Program.
3. The required endangered or threatened wildlife or plant species habitat buffer area shall be based upon the home range and habitat requirements of the species and the development's anticipated impacts on the species habitat.

(b) Development of endangered or threatened wildlife or plant species habitat is prohibited unless it can be demonstrated, through an endangered or threatened wildlife or plant species impact assessment as described at N.J.A.C. 7:7-11, that endangered or threatened wildlife or plant species habitat would not directly or through secondary impacts on the relevant site or in the surrounding area be adversely affected.

(c) Applicants for development of sites that contain or abut areas mapped as endangered or threatened wildlife species habitat on the Landscape Maps shall either:

1. Demonstrate compliance with this rule by conducting an endangered or threatened wildlife species impact assessment in accordance with N.J.A.C. 7:7-11.2; or
2. Demonstrate that the proposed site is not endangered or threatened wildlife species habitat and this rule does not apply by conducting an endangered or threatened wildlife species habitat evaluation in accordance with N.J.A.C. 7:7-11.3.

(d) If the Department becomes aware of an occurrence of an endangered or threatened wildlife species on a site that is not mapped as endangered or threatened wildlife species habitat on the Department's Landscape Maps, and the Department determines that the habitat may be suitable for that species, the Department shall notify the applicant and the applicant shall demonstrate compliance with or inapplicability of this rule in accordance with (c) above.

(e) If the Department becomes aware of an occurrence of an endangered or threatened plant species on a site that is not in the Natural Heritage Database, the Department will notify the applicant and the applicant shall demonstrate compliance with this rule in accordance with (b) above.

Response: As described in Section 2.14.4.2 above, there is one Osprey nesting platform located on the subject site, and two other platforms located to the southwest of the site. During the project construction period, it is proposed to cover the on-site platform and the platform just to the southwest of the site with tarps or “pyramid-shaped” plywood to prevent the Ospreys from nesting. Since two pairs of Ospreys will potentially be prevented from nesting and reproducing by this process, the project will adversely impact the local population of a State-listed threatened species. This adverse impact also is not in accordance with the requirements of the Federal Migratory Bird Species Treaty Act (16 U.S.C. 703-712). However, the applicant intends to submit a draft Osprey mitigation proposal to the NJDEP for review and approval which is expected to include the construction of alternate nesting platforms in suitable locations along Parkers Creek. The “covered” nesting platforms will be restored to original condition upon completion of construction.

4.1.8 Geodetic Control Reference Marks (N.J.A.C. 7:7-9.45)

(a) Geodetic control reference marks are traverse stations and benchmarks established or used by the New Jersey Geodetic Control Survey pursuant to P.L. 1934, c.116. They include the following types:

1. Monument-(Mon), Disk-(DK): A standard United States Coast and Geodetic Survey or New Jersey Geodetic Control Survey disk set in a concrete post, pavement, curb, ledge rock, etc., stamped with a reference number, and used for both horizontal and vertical control.
2. Point-(Pt.): A State highway, tidelands (riparian), city, etc. survey marker represented by a chiseled cross, punch hole, brass plug, etc. used for horizontal and vertical control. These stations are not marked, but if there should be an enclosing box, the rim is stamped with a number.
3. Rivet-(Rv.): metal rivet set by the New Jersey Geodetic Control Survey, used for vertical control.
4. Mark-(Mk.): Same as point, but used only for vertical control. In the description of such marks there should appear a mark number followed by an equality sign and then the original name or elevation of the bench mark, and in parentheses the name of the organization which established the mark.

(b) The disturbance of a geodetic control reference mark is discouraged. When a geodetic control reference mark must be moved, raised or lowered to accommodate construction, the New Jersey Geodetic Control Survey shall be contacted at least 60 days prior to disturbance, and arrangements shall be made to protect the position. If the position cannot be protected, it may be altered in position after approval by the New Jersey Geodetic Control Survey and under the supervision of a licensed professional engineer or land surveyor using standard methods. Copies of field notes and instruments, tape, and rod specifications including calibration data, shall be submitted to the New Jersey Geodetic Control Survey.

Response: The applicant understands this rule and will comply accordingly.

4.1.9 Lands and Waters Subject to Public Trust Rights (N.J.A.C. 7:7-9.48)

(a) Lands and waters subject to public trust rights are tidal waterways and their shores, including both lands now or formerly below the mean high water line, and shores above the mean high water line. Tidal waterways and their shores are subject to the Public Trust Doctrine and are held in trust by the State for the benefit of all the people, allowing the public to fully enjoy these lands and waters for a variety of public uses. Public trust rights include public access which is the ability of the public to pass physically and visually to, from and along the ocean shore and other waterfronts subject to public trust rights and to use these lands and waters for activities such as navigation, fishing and recreational activities including, but not limited to, swimming, sunbathing, surfing, sport diving, bird watching, walking, and boating. Public trust rights also include the right to perpendicular and linear access.

(b) Public access to lands and waters subject to public trust rights shall be provided in accordance with the public access rule, N.J.A.C. 7:7-16.9. Development that does not comply with N.J.A.C. 7:7-16.9, Public access, is discouraged in lands and waters subject to public trust rights.

Response: The project includes a public walkway that provides public access to Parkers Creek and adjacent natural areas. Refer to the project plans for further information and details of the public walkway associated with the proposed project. The project complies with this rule.

4.2 Subchapter 13. Requirements for Impervious Cover and Vegetative Cover for General Land Areas and Certain Special Areas (N.J.A.C. 7:7-3.0 et seq.)

4.2.1 Impervious Cover Requirements that Apply to Sites in the Upland Waterfront Development and CAFRA Areas (N.J.A.C. 7:7-13.3)

(a) This section sets forth impervious cover requirements that apply to sites in the upland waterfront development and CAFRA areas. Impervious cover limits, specific to each of these areas, are found at N.J.A.C. 7:7- 13.17.

Response: See response to N.J.A.C 7:7-13.17, below.

4.2.2 Vegetative Cover Requirements that Apply to Sites in the Upland Waterfront Development Areas and CAFRA Areas (N.J.A.C. 7:7-13.4)

Response: Not Applicable

4.2.3 Determining if a Site is Forested or Unforested (N.J.A.C. 7:7-13.5)

(f) The vegetative cover percentage that applies to a site in the upland waterfront development area or CAFRA area varies depending on whether the site is forested. If only a portion of a site is forested, separate vegetative cover percentages shall be calculated for the forested and unforested portions of the site.

(g) The following will be considered to be unforested for the purposes of determining vegetative cover percentages:

1. A site that is smaller than one acre; and
2. An area of trees, smaller than one acre, that is surrounded on all sides by areas with fewer than one tree per 100 square feet.

Response: There are no forests on the site. The project location was initially developed for housing at former Fort Monmouth and consists of empty buildings, a recreation hall, parking areas, roadways, a tennis court, walkways, scattered trees, and lawn areas.

4.2.4 Coastal Planning Areas in the CAFRA Area (N.J.A.C. 7:7-13.15)

(a) For purposes of this subchapter and consistent with all other rules in this chapter, descriptions and policy objectives for the Coastal Planning Areas in the CAFRA area are set forth in (b) through (f) below.

(b) The Coastal Metropolitan Planning Area includes a variety of communities on the New Jersey coast. This Coastal Planning Area generally has a high population density and existing public water and sewer systems. The policy objectives for the Coastal Metropolitan Planning Area are as follows:

1. Guide development and redevelopment to ensure efficient use of scarce land while capitalizing on the inherent public facility and service efficiencies of concentrated development patterns;
2. Accommodate a variety of housing choices through development and redevelopment;
3. Promote economic development by encouraging redevelopment efforts such as infill, consolidation of property, and infrastructure improvements, and by supporting tourism and related activities;
4. Promote high-density development patterns in coastal urbanized areas to encourage the design and use of public transit and alternative modes of transportation to improve air quality, to improve travel among population and employment centers and transportation terminals, and to promote transportation systems that address the special seasonal demands of travel and tourism along the coast;
5. Encourage the reclamation of environmentally damaged sites and mitigate future negative impacts, particularly to waterfronts, beaches, scenic vistas, and habitats;
6. Promote public recreation opportunities in development and redevelopment projects, and ensure meaningful public access to coastal waterfront areas; and
7. Encourage the repair or replacement of existing infrastructure systems where necessary to ensure that existing and future development will cause minimal negative environmental impacts.

Response: The project is located in a Coastal Metropolitan Planning Area. See Sections 1.2, 1.3, and all of Section 3. The project complies with this rule.

4.2.5 Boundaries for Coastal Planning Areas, CAFRA Centers, CAFRA Cores, and CAFRA Nodes; Non-mainland Coastal Centers (N.J.A.C. 7:7-13.16)

Response: The Applicant understands this rule and will comply accordingly, as applicable.

4.2.6 Impervious Cover Limits for a Site in the CAFRA Area (N.J.A.C. 7:7-13.17)

The impervious cover limit for a site in the CAFRA area shall be determined as follows:

If a site is located in a CAFRA center, CAFRA core, or CAFRA node, the impervious cover limit is determined under (c) below. Note that the impervious cover limit for such a site is calculated based on the acreage of the total land area on the site, as opposed to the acreage of the net land area on the site;

(d) Subject to the limitations regarding mainland coastal centers at N.J.A.C. 7:7-13.19(e), if a site is located in the Coastal Metropolitan Planning Area or in a coastal center, the impervious cover limit is the limit at (d)1 or 2 below, whichever is higher:

1. The acreage of the net land area on the site as determined under N.J.A.C. 7:7-13.3(e), multiplied by the impervious cover percentage in Table H below for the type of coastal center in which the site is located; or
2. The amount of legal, existing impervious cover located on the site, as determined under (g) below.

TABLE H: Percentages for Calculating Impervious Cover Limits Under N.J.A.C. 7:7-13.17

Site Location	Impervious Cover Percentage
Coastal Metropolitan Planning Area	80 percent

Response: As described above, the proposed project is located in a Coastal Metropolitan Planning Area. The site has an existing impervious coverage of approximately 8.07 acres and the proposed site will have impervious coverage of approximately 10.49 acres. This is below the maximum allowable impervious percentage for the site.

4.2.7 Vegetative Cover Percentages for a Site in the CAFRA Area (N.J.A.C. 7:7-13.18)

- 0) The area (in acres) on a site in the CAFRA area in which trees and/or herb/shrub vegetation shall be planted or preserved is calculated as follows

TABLE I: Tree Preservation and Planting Percentages For Forested and Unforested Sites

Site Location	Tree preservation percentage for forested portion of site	Tree preservation and/or planting percentage for unforested portion of site
Coastal Metropolitan Planning Area	10 percent	0 percent

Response: As described in Section 4.2.3 above, there are no forests on the proposed project site. Therefore, the project complies with this rule.

4.3 Subchapter 14. General Location Rules (N.J.A.C. 7:7-14.0 et seq.)

4.3.1 Basic Location Rule (N.J.A.C. 7:7-14.2)

(a) A location may be acceptable for development under N.J.A.C. 7:7-9, 12, 13, and 14, but the Department may reject or conditionally approve the proposed development of the location as reasonably necessary to:

1. Promote the public health, safety, and welfare;
2. Protect public and private property, wildlife and marine fisheries; and
3. Preserve, protect and enhance the natural environment.

Response: The applicant understands this rule and intends to work cooperatively with the Department in resolving any project-related concerns.

4.3.2 Secondary Impacts (N.J.A.C. 7:7-14.3)

(a) Secondary impacts are the effects of additional development likely to be constructed as a result of the approval of a particular proposal. Secondary impacts can also include traffic increases, increased recreational demand and any other offsite impacts generated by onsite activities which affect the site and surrounding region.

(b) Coastal development that induces further development shall demonstrate, to the maximum extent practicable, that the secondary impacts of the development will satisfy this chapter. The Department may restrict coastal development from connecting to an approved infrastructure in order to prevent adverse impacts to special areas as defined at N.J.A.C. 7:7-9 and to protect and preserve coastal resources.

1. The level of detail and areas of emphasis of the secondary impact analysis are expected to vary depending upon the type of development. Minor projects may not even require such an analysis. Transportation and wastewater treatment systems are the principal types of development that require a secondary impact analysis, but major industrial, energy, commercial, residential, and other projects may also require a rigorous secondary impact analysis.
2. Secondary impact analysis must include an analysis of the likely geographic extent of induced development, its relationship to the State Development and Redevelopment Plan, an assessment of likely induced point and non-point air and water quality impacts, and evaluation of the induced development in terms of all applicable special area rules, N.J.A.C. 7:7-9; general water area rules, N.J.A.C. 7:7-12; requirements for impervious cover and vegetative cover for general land areas and certain special areas, N.J.A.C. 7:7-13; location rules, N.J.A.C. 7:7-14; and resource rules, N.J.A.C. 7:7-16.

Response: As described in Section 3.15 above, the proposed Project will induce positive secondary impacts in the region because of the proposed construction activities. These economic impacts will benefit surrounding communities during construction by increasing employment opportunities and expenditures on local

services and materials. Further, these positive secondary impacts will continue once the project is complete and the housing units become occupied; residents will patronize local establishments, supporting the economy of the surrounding towns. The proposed project will not result in property acquisition, residential relocation, division or disruption of established communities, or disruption of planned development. Negative Secondary Impacts are not anticipated from the project.

4.4 Subchapter 15. Use Rules (N.J.A.C. 7:7-15.0 et seq.)

4.4.1 Housing (N.J.A.C. 7:7-15.2)

- (a) "Housing" includes single family detached houses, multi-family units with apartments or town houses, high-rise buildings and mixed use developments.
- 3. Housing is conditionally acceptable in the filled water's edge, provided that it meets the requirements of the filled water's edge rule, N.J.A.C. 7:7-9.23, lands and waters subject to public trust rights rule, N.J.A.C. 7:7-9.48, and the public access rule, N.J.A.C. 7:7-16.9. The residential development shall comply with the requirements for impervious cover and vegetative cover that apply to the site under N.J.A.C. 7:7-13, except on bay islands where the requirements of the bay islands rule, 7:7-9.21, shall apply.
- 5. On sites with existing shore protection structures, the residential structure shall be set back a minimum of 25 feet from the oceanfront shore protection structures, and a minimum of 15 feet from shore protection structures elsewhere. This distance shall be measured from the waterward face of a bulkhead or seawall and from the top of slope on the seaward side of the revetment.
- (g) The standards relevant to housing and transportation are as follows:
 - 1. The development of housing at locations and densities that contribute to the feasibility of public transportation is encouraged.
 - 2. Residential developments are encouraged to include bicycle paths to activity centers and bicycle storage facilities.
 - 3. Residential developments are encouraged to provide pedestrian amenities which include lighted walkways with benches, lighted sidewalks with curb ramps and intersections, shade trees, and pedestrian controlled traffic lights.

Response: The proposed project has been designed in accordance with the requirements of FMERA, the NJDEP, and the Borough of Oceanport. The Project complies with this rule.

4.5 Subchapter 16. Resource Rules (N.J.A.C. 7:7-16.0 et seq.)

4.5.1 Water Quality (N.J.A.C. 7:7-16.3)

- (b) As required by Section 307(f) of the Federal Coastal Zone Management Act, 16 U.S.C. §§ 1451 et seq., Federal, State, and local water quality requirements established under the Federal

Clean Water Act, 33 U.S.C. §§ 1251 et seq., shall be the water resource standards of the coastal management program. These requirements include not only the minimum requirements imposed under the Clean Water Act but also the additional requirements adopted by states, localities, and interstate agencies pursuant to Section 510 of the Clean Water Act and such statutes as the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq. In the Delaware River Basin, the requirements include the prevailing “Basin Regulations-Water Quality” adopted by the Delaware River Basin Commission as part of its Comprehensive Plan. In the waters under the jurisdiction of the Interstate Environmental Commission in the New Jersey-New York metropolitan area, the requirements include the Interstate Environmental Commission’s Water Quality Regulations. Department rules related to water pollution control and applicable throughout the entire coastal zone include, for example, the Surface Water Quality Standards (N.J.A.C. 7:9B), the Ground Water Quality Standards (N.J.A.C. 7:9C), and the New Jersey Pollutant Discharge Elimination System rules (N.J.A.C. 7:14A).

- (c) Coastal development which would violate the Federal Clean Water Act, or State laws, rules and regulations enacted or promulgated pursuant thereto, is prohibited. In accordance with N.J.A.C. 7:15 concerning the Water Quality Management Planning and Implementation process, coastal development that is inconsistent with an approved Water Quality Management (208) Plan under the New Jersey Water Quality Planning Act, N.J.S.A. 58:11A-1 et seq., is prohibited.

Response: See Sections 2.9.4 and 3.5 above. Oceanport’s potable water supply is provided by New Jersey American Water Company and sanitary service is provided by the TRWRA. The treatment plant is located on Raccoon Island in Monmouth Beach and serves member communities: Fair Haven, Little Silver, Monmouth Beach, Oceanport, Shrewsbury, and West Long Branch, as well as Fort Monmouth. Additionally, Eatontown, Red Bank, Rumson, Sea Bright, Shrewsbury Township, and Tinton Falls are customers, sending some sanitary sewer flows to TRWRA.

The project complies with this rule.

4.5.2 Surface Water Use (N.J.A.C. 7:7-16.4)

- (a) Surface water is water in lakes, ponds, streams, rivers, bogs, wetlands, bays, and ocean that is visible on land.
- (b) Coastal development shall demonstrate that the anticipated surface water demand of the facility will not exceed the capacity, including phased planned increases, of the local potable water supply system or reserve capacity, and that construction of the facility will not cause unacceptable surface water disturbances, such as drawdown, bottom scour, or alteration of flow patterns.

Response: See response to N.J.A.C. 7:7-16.3, in Section 4.5.1, immediately above.

4.5.3 Groundwater Use (N.J.A.C. 7:7-16.5)

- (h) Groundwater is all water within the soil and subsurface strata that is not at the surface of the land. It includes water that is within the earth that supplies wells and springs.

(i) Coastal development shall demonstrate, to the maximum extent practicable, that the anticipated groundwater withdrawal demand of the development, alone and in conjunction with other groundwater diversions proposed or existing in the region, will not cause salinity intrusions into the groundwaters of the zone, will not degrade groundwater quality, will not significantly lower the water table or piezometric surface, or significantly decrease the base flow of adjacent water sources. Groundwater withdrawals shall not exceed the aquifer's safe yield.

Response: As described in Section 2.9.2 above, potable water is piped from off-site and is not supplied from groundwater wells. According to NJDEP data, there are no public community water supply wells or community wellhead protection areas in the vicinity of the project area. The project complies with this rule.

4.5.4 Stormwater Management (N.J.A.C. 7:7-16.6)

- (a) If a project or activity meets the definition of "major development" at N.J.A.C. 7:8-1.2, then the project or activity shall comply with the Stormwater Management rules at N.J.A.C. 7:8.

Response: Based on the NJDEP Stormwater Rules, a project that is considered a Major Development is required to comply with Stormwater Quality, Quantity and Groundwater Recharge provisions of the regulations. It is important to note that since the project area drains to a regulated tidal floodplain, the NJDEP should not require that the project meet the provisions of the Stormwater Quantity, Groundwater Recharge or the net-fill regulations. Refer to the Stormwater Management Report for further information and details of the stormwater management design for the project. The project complies with this rule.

4.5.5 Vegetation (N.J.A.C. 7:7-16.7)

- (a) Vegetation is the plant life or total plant cover that is found on a specific area, whether indigenous or introduced by humans.
- (b) Coastal development shall preserve, to the maximum extent practicable, existing vegetation within a development site. Coastal development shall plant new vegetation, particularly appropriate coastal species, and native to New Jersey to the maximum extent practicable.

Response: As described in Section 3.9 above, the proposed project involves the clearing of vegetation. Much of the vegetation is located in previously developed and disturbed land. The following measures would be implemented to minimize impacts on upland vegetation:

- **Disturbed areas would be reseeded or landscaped in accord with species lists provided by local jurisdictions and disturbed areas and presence of invasive species would be monitored and controlled as required; and**
- **Impacts to areas outside of the limits of construction would be avoided.**

4.5.6 Air Quality (N.J.A.C. 7:7-16.8)

- (j) The protection of air resources refers to the protection from air contaminants that injure human health, welfare or property, and the attainment and maintenance of State and Federal air quality goals and the prevention of degradation of current levels of air quality.
- (k) Coastal development shall conform to all applicable State and Federal regulations, standards and guidelines and be consistent with the strategies of New Jersey's State Implementation Plan (SIP). See N.J.A.C. 7:27 and New Jersey SIP for ozone, particulate matter, sulfur dioxide, nitrogen dioxide, carbon monoxide, lead, and visibility.
- (l) Coastal development shall be located and designed to take full advantage of existing or planned mass transportation infrastructures and shall be managed to promote mass transportation services, in accordance with the traffic rule, N.J.A.C. 7:7-16.12.

Response: As described in Section 3.1 above, the Proposed Project will not degrade local air quality. The project complies with this rule.

4.5.7 Public Access (N.J.A.C. 7:7-16.9)

- (a) Public access to the waterfront is the ability of the public to pass physically and visually to, from, and along tidal waterways and their shores and to use such shores, waterfronts and waters for activities such as navigation, fishing, and recreational activities including, but not limited to, swimming, sunbathing, surfing, sport diving, bird watching, walking, and boating. Public accessways and public access areas include streets, paths, trails, walkways, easements, paper streets, dune walkovers/walkways, piers and other rights-of-way. No authorization or approval under this chapter shall be deemed to relinquish public rights of access to and use of lands and waters subject to public trust rights in accordance with N.J.A.C.7:7-9.48. Further, no authorization or approval under this chapter shall be considered a Tidelands approval or shall exempt an applicant from the obligation to obtain a Tidelands approval, if needed.

Response: The project includes a public walkway that provides public access to Parkers Creek and adjacent natural areas. Refer to the project plans for further information and details of the public walkway associated with the proposed project.

4.5.8 Scenic Resources and Design (N.J.A.C. 7:7-16.10)

- (m) Scenic resources include the views of the natural and/or built landscape.
- (n) Large-scale elements of building and site design are defined as the elements that compose the developed landscape such as size, geometry, massing, and height and bulk structures.
- (o) New coastal development that is visually compatible with its surroundings in terms of building and site design, and enhances scenic resources is encouraged. New coastal development that is not visually compatible with existing scenic resources in terms of large-scale elements of building and site design is discouraged

Response: The proposed project has been designed for large-scale residential development and is consistent with the Fort Monmouth redevelopment plan. This subject parcel is surrounded by similar land uses in the former Fort Monmouth. This development will enhance the scenic resources of the area by revitalizing a currently vacant parcel of property.

4.5.9 Buffers and Compatibility of Uses (N.J.A.C. 7:7-16.11)

(a) Buffers are natural or man-made areas, structures, or objects that serve to separate distinct uses or areas. Compatibility of uses is the ability for uses to exist together without aesthetic or functional conflicts.

(b) Development shall be compatible with adjacent land uses to the maximum extent practicable.

1. Development that is likely to adversely affect adjacent areas, particularly special areas, N.J.A.C. 7:7-9, or residential or recreation uses, is prohibited unless the impact is mitigated by an adequate buffer. The purpose, width, and type of the required buffer shall vary depending upon the type and degree of impact and the type of adjacent area to be affected by the development, and shall be determined on a case-by-case basis.
2. The standards for wetland buffers are found at N.J.A.C. 7:7-9.28.
3. The following apply to buffer treatment:
 - i. All buffer areas shall be planted with appropriate vegetative species, either through primary planting or supplemental planting. This landscaping shall include use of mixed, native vegetative species, with sufficient size and density to create a solid visual screen within five years from the date of planting.
 - ii. Buffer areas which are forested may require supplemental vegetative plantings to ensure that acceptable visual and physical separation is achieved.
 - iii. Buffer areas which are non-forested will require dense vegetative plantings with mixed evergreen and deciduous trees and shrubs. Evergreens must be at least eight feet tall at time of planting; deciduous trees must be at least three inches caliper, balled and burlapped; shrubs must be at least three to four feet in height.

Response: All buffer areas will be consistent with the standards established by FMERA, the NJDEP, and the Borough of Oceanport. Refer to the project plans for further information and details of the Buffers associated with the proposed project.

4.5.10 Traffic (N.J.A.C. 7:7-16.12)

(a) Traffic is the movement of vehicles, pedestrians or ships along a route.

(b) Coastal development shall be designed, located and operated in a manner to cause the least possible disturbance to traffic systems.

1. Alternative means of transportation, that is, public and private mass transportation facilities

and services, shall be considered and, wherever feasible, incorporated into the design and management of a proposed development, to reduce the number of individual vehicle trips generated as a result of the facility. Examples of alternative means of transportation include: van pooling, staggered working hours and installation of ancillary public transportation facilities such as bus shelters.

- (c) When the level of service of traffic systems is disturbed by approved development, the necessary design modifications or funding contribution toward an area wide traffic improvement shall be prepared and implemented in conjunction with the coastal
- (d) development, to the satisfaction of the New Jersey Department of Transportation and/or any regional agencies, as applicable.
- (e) Any development that causes a location on a roadway to operate in excess of capacity Level D is discouraged. A developer shall undertake mitigation or other corrective measures as may be necessary so that the traffic levels at any affected intersection remain at capacity Level D or better. A developer may, by incorporating design modification or by contributing to the cost of traffic improvements, be able to address traffic problems resulting from the development, in which case development would be conditionally acceptable. Determinations of traffic levels which will be generated will be made by the New Jersey Department of Transportation.
- (f) Coastal development located in municipalities which border the Atlantic Ocean, except as excluded under (e) 1 and 3 below, shall satisfy the requirements for parking specified in this subsection. Coastal development subject to this subsection shall provide sufficient on-site and/or off-site parking for its own use. In general, on street parking spaces along public roads cannot be credited as part of off-site parking provided for a project. All off-site parking facilities must be located either in areas within reasonable walking distance to the development or areas identified by any local or regional transportation plans as suitable locations.

Response: Temporary impacts to the land-based transportation resources in the Project Area would be associated with the movement of construction equipment and workers' vehicles during the construction phase of the Project. However, these impacts are expected to be minimal, short-term, and limited to the period of construction. During construction, coordination with local officials would occur as needed to minimize effects on the local traffic patterns and parking.

The proximity of the site to highways and public transportation makes the project site ideal for development from an accessibility standpoint. With the existing infrastructure surrounding the site, it is not anticipated that the proposed development will have any significant adverse impacts on the surrounding road networks. Refer to the Traffic Impact Study for further information and details of the Traffic Impacts associated with the proposed project, as well as the proposed mitigating measures to be implemented.

5.0 LIST OF CONTRIBUTORS

Brian A. Sayre, CFM, Associate, Natural Resources Department Manager

Professional Experience: 40 years

Education: B.A. Environmental Sciences/Ecology

University of Virginia

M.A. Environmental Studies

Montclair State University

Responsibility: Document QA/QC Review

Steven Finch, CWB, Senior Wetland Scientist

Professional Experience: 17 years

Education: B.T. Wildlife Management

University of State of New York at Cobleskill

Responsibility: Field Reconnaissance and Document Preparation

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Somerset Fort Monmouth
Monmouth County, Oceanport, New Jersey*

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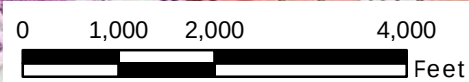
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Figures



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 Project Area

Fort Monmouth
Block 110, Portion of Lot 1
Borough of Oceanport, Monmouth County, New Jersey

DATE: July 2020

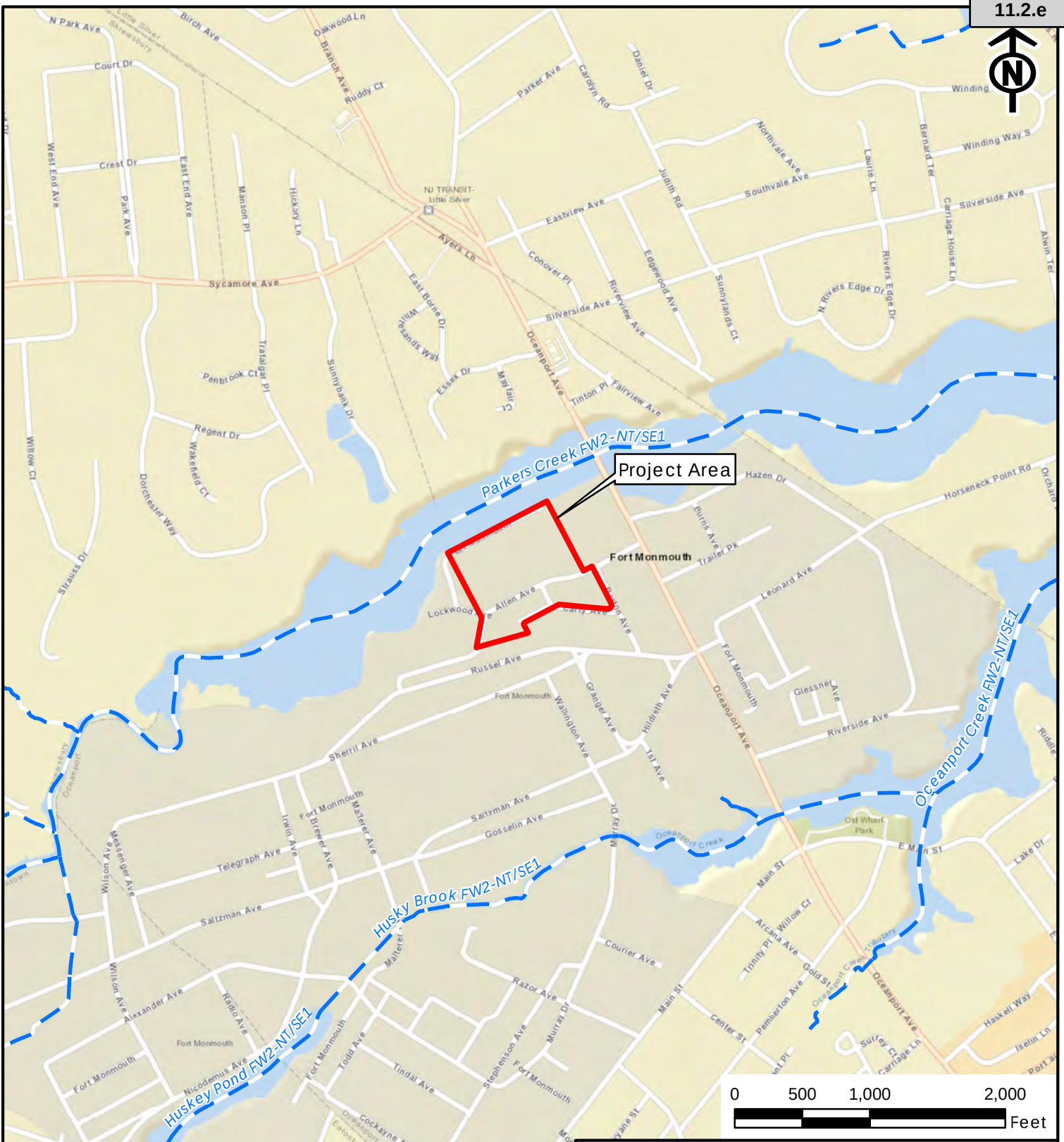


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FIGURE 1

Packet Pg. 150

Source: USA Topographic Maps Online Service, ESRI. Long Branch West, NJ Quadrangle



LEGEND

- Project Area
- Surface Water/Streams

SOMERSET DEVELOPMENT, LLC

STREET MAP

Fort Monmouth
Block 110, Portion of Lot 1
Borough of Oceanport, Monmouth County, New Jersey

SCALE: 1" = 1,000'

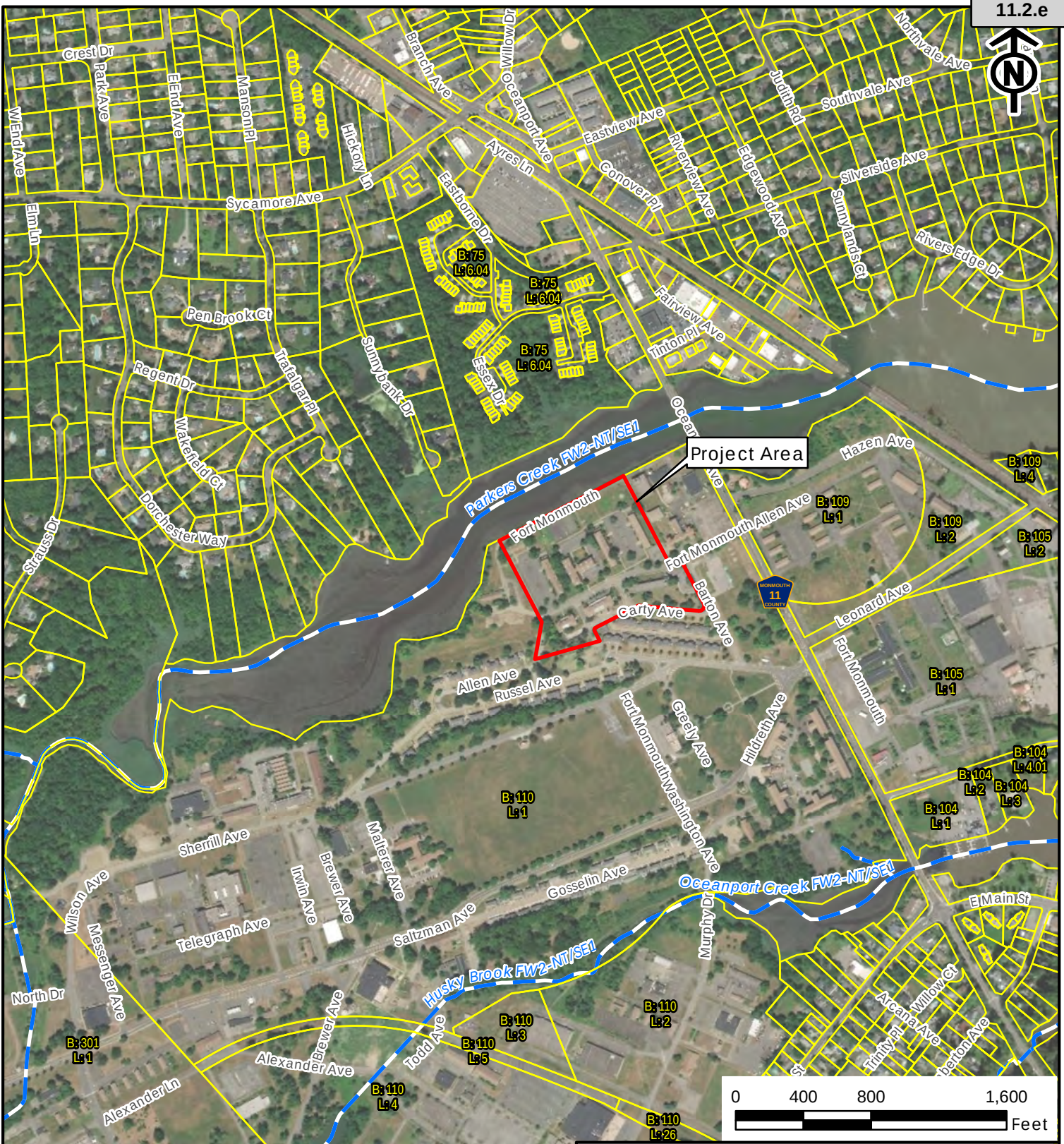
DATE: July 2020



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FIGURE 2

Packet Pg. 151





LEGEND

- Project Area
 Fort Monmouth Historic District
- Bedrock Geology
 Surface Water/Streams
- Kt - Tinton Formation (glaucouite sand, fine- to medium-grained)
 Tht - Hornerstown Formation (quartz sand, glauconitic, locally indurated)

Source: World Imagery Online Service, ESRI. The information on this map is based on a compilation of publicly available New Jersey Department of Environmental Protection (NJDEP) Geographic Information System (GIS) geospatial data and visual reconnaissance of the vicinity. No verification or approval by NJDEP of the information presented is implied. No verification by a professional land surveyor has been performed.

SOMERSET DEVELOPMENT, LLC

BEDROCK GEOLOGY MAP

Fort Monmouth
Block 110, Portion of Lot 1
Borough of Oceanport, Monmouth County, New Jersey

SCALE: 1" = 400'

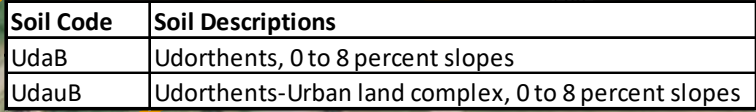
DATE: July 2020



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FIGURE 4

Packet Pg. 153

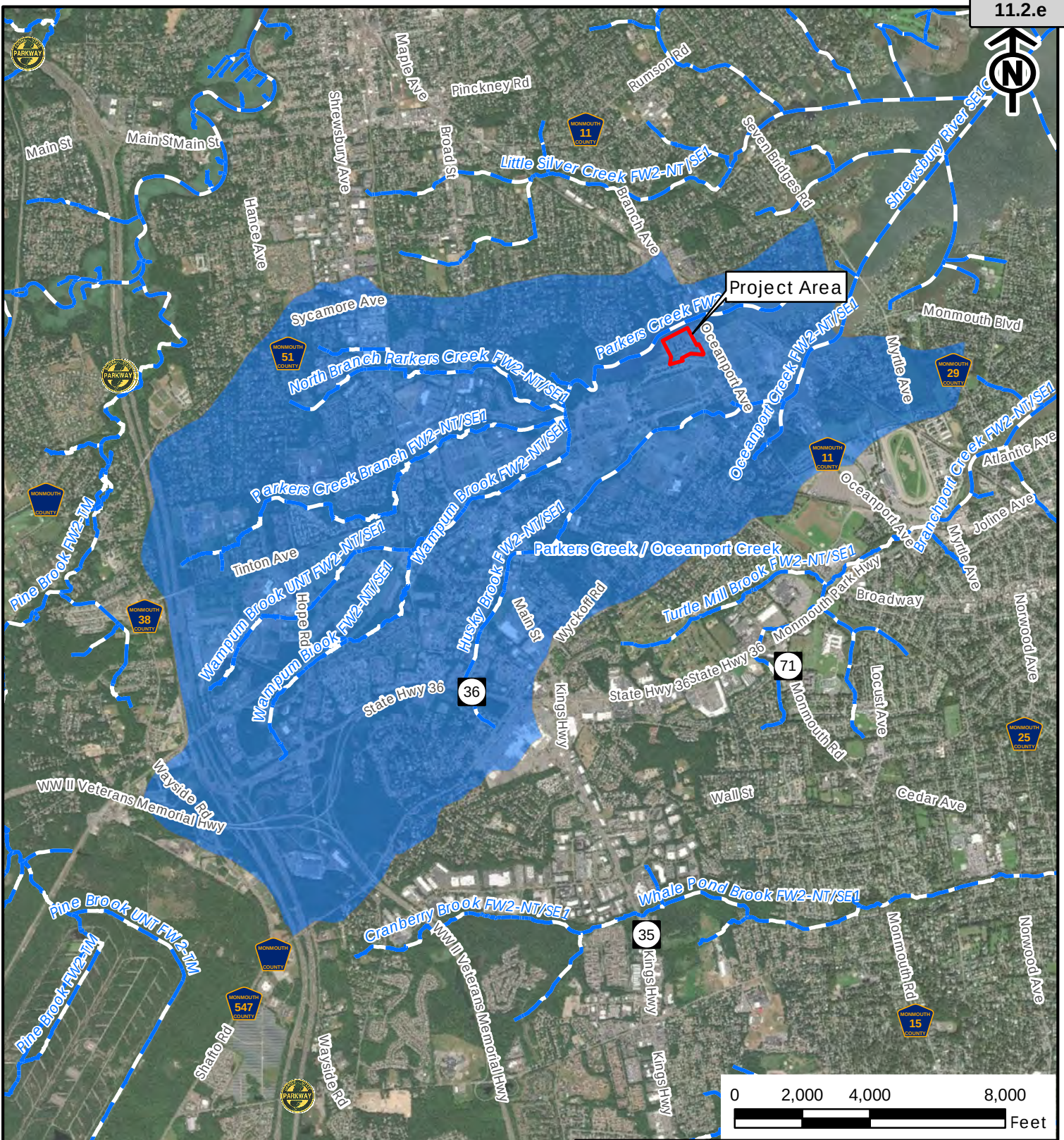


 Project Area

 Soil Designations

 Surface Water/Streams

Packet Pg. 154



LEGEND

- Project Area
- Parkers Creek / Oceanport Creek
- Surface Water/Streams

Source: World Imagery Online Service, ESRI. The information on this map is based on a compilation of publicly available New Jersey Department of Environmental Protection (NJDEP) Geographic Information System (GIS) geospatial data and visual reconnaissance of the vicinity. No verification or approval by NJDEP of the information presented is implied. No verification by a professional land surveyor has been performed.

SOMERSET DEVELOPMENT, LLC

WATERSHED MAP

Fort Monmouth
Block 110, Portion of Lot 1
Borough of Oceanport, Monmouth County, New Jersey

SCALE: 1" = 4000'

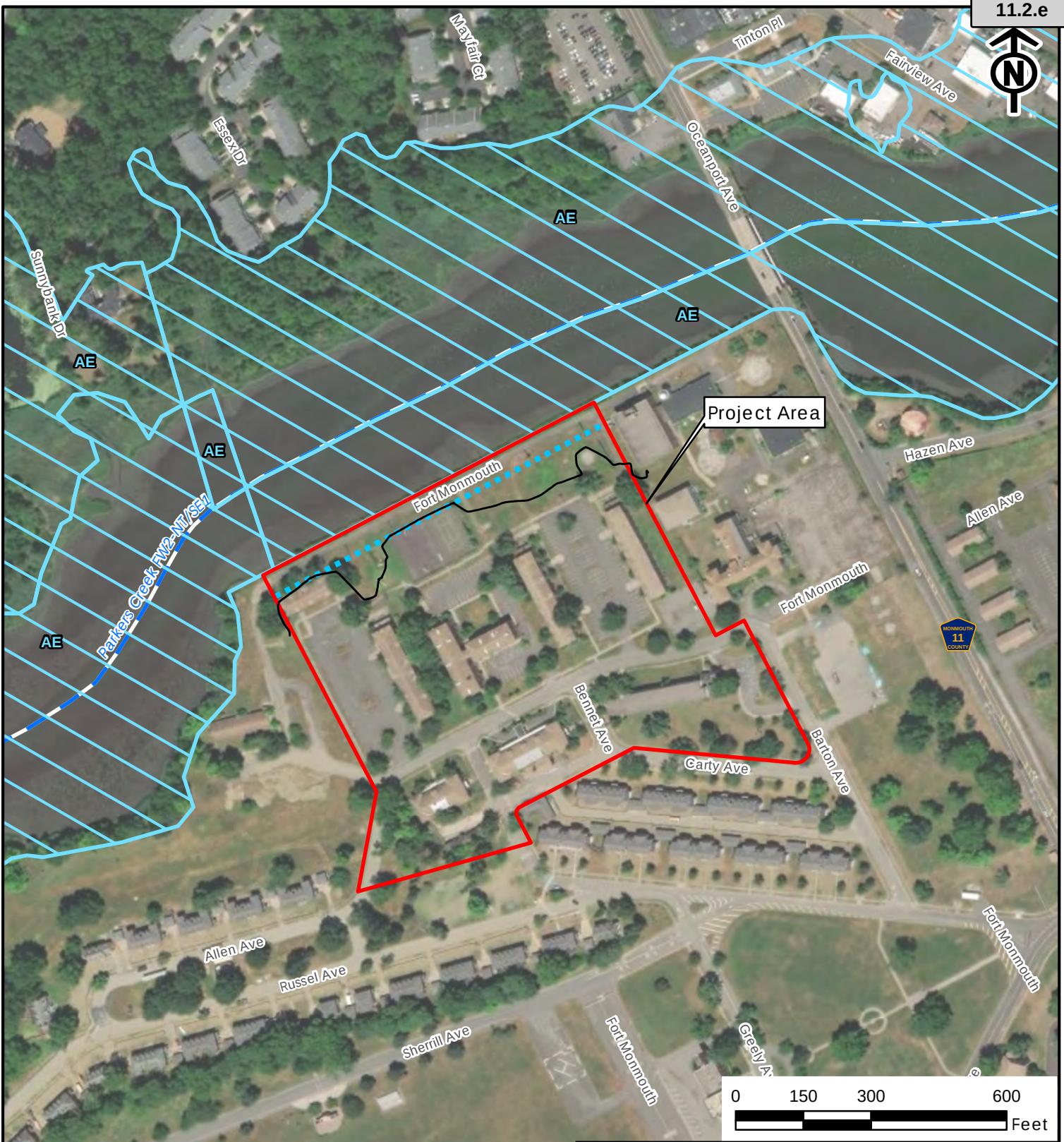
DATE: July 2020



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FIGURE 6

Packet Pg. 155



LEGEND

- Project Area
 - 50' Riparian Buffer
 - 100-Year Floodplain
 - 8' Contour
 - Surface Water/Streams
- NOTE: The eight foot contour is verified by a professional land surveyor.
Control Point Associates, Inc. 9/6/18.

Source: World Imagery Online Service, ESRI. The information on this map is based on a compilation of publicly available New Jersey Department of Environmental Protection (NJDEP) and FEMA Geographic Information System (GIS) geospatial data and visual reconnaissance of the vicinity. No verification or approval by NJDEP or FEMA of the information presented is implied. No verification by a professional land surveyor has been performed.

SOMERSET DEVELOPMENT, LLC

FEMA FLOODPLAIN

Fort Monmouth
Block 110, Portion of Lot 1
Borough of Oceanport, Monmouth County, New Jersey

SCALE: 1" = 300'

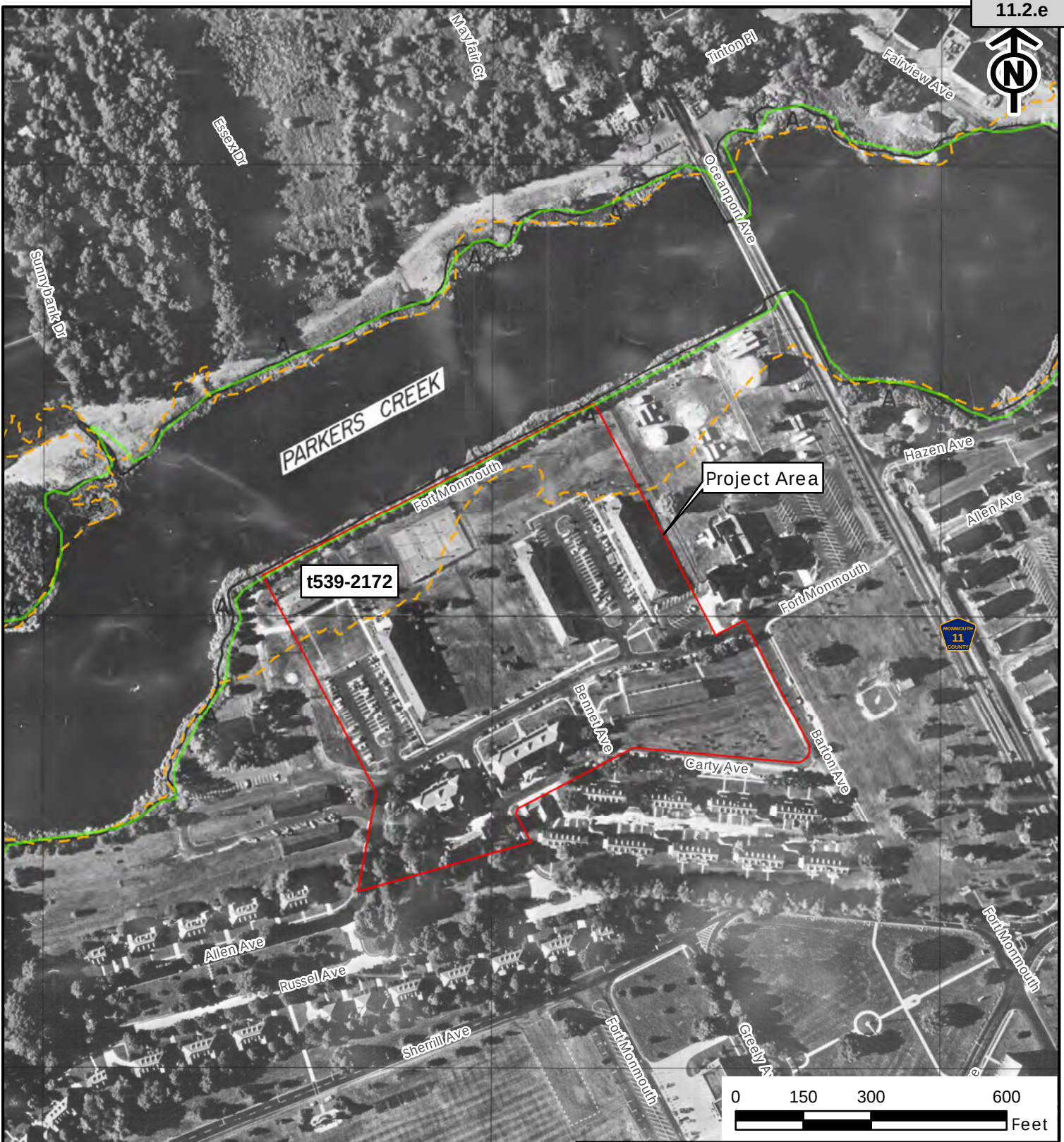
DATE: July 2020



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FIGURE 7

Packet Pg. 156



LEGEND

- Project Area
- Upper Wetland Boundary
- Claimed Tidelands

Source: NJDEP 1970 Wetlands Basemap, ESRI. The information on this map is based on a compilation of publicly available New Jersey Department of Environmental Protection (NJDEP) Geographic Information System (GIS) geospatial data and visual reconnaissance of the vicinity. No verification or approval by NJDEP of the information presented is implied. No verification by a professional land surveyor has been performed.

SOMERSET DEVELOPMENT, LLC

1970 NJDEP WETLANDS MAP

Fort Monmouth
Block 110, Portion of Lot 1
Borough of Oceanport, Monmouth County, New Jersey

SCALE: 1" = 300'

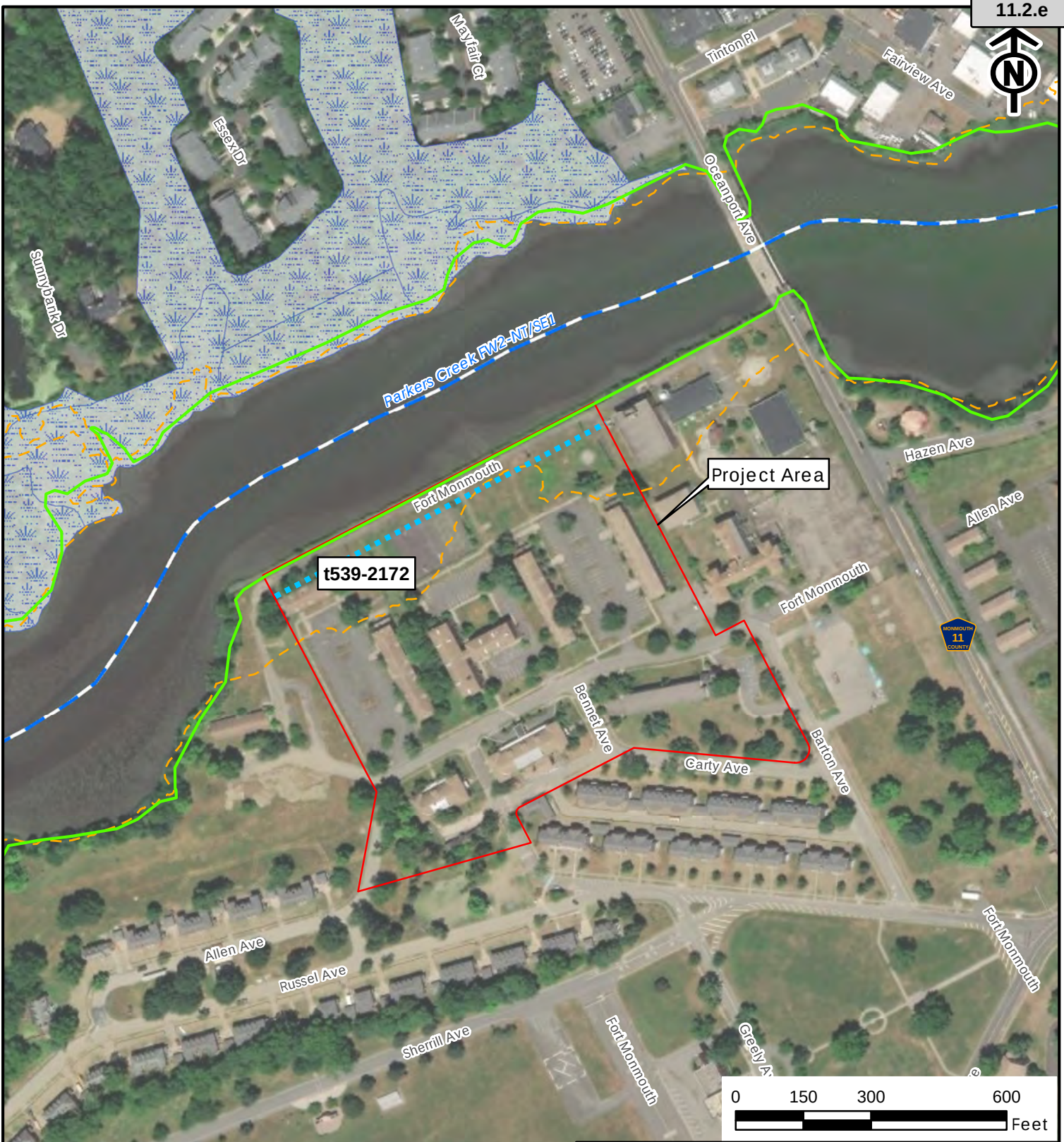
DATE: July 2020



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FIGURE 8

Packet Pg. 157



LEGEND

- | | | | |
|--|---------------------|--|------------------------|
| | Project Area | | Upper Wetland Boundary |
| | 2012 NJDEP Wetlands | | Claimed Tidelands |
| | 50' Wetland Buffer | | Surface Water/Streams |

Source: World Imagery Online Service, ESRI. The information on this map is based on a compilation of publicly available New Jersey Department of Environmental Protection (NJDEP) Geographic Information System (GIS) geospatial data and visual reconnaissance of the vicinity. No verification or approval by NJDEP of the information presented is implied. No verification by a professional land surveyor has been performed.

SOMERSET DEVELOPMENT, LLC

2012 NJDEP WETLANDS MAP

Fort Monmouth
Block 110, Portion of Lot 1
Borough of Oceanport, Monmouth County, New Jersey

SCALE: 1" = 300'

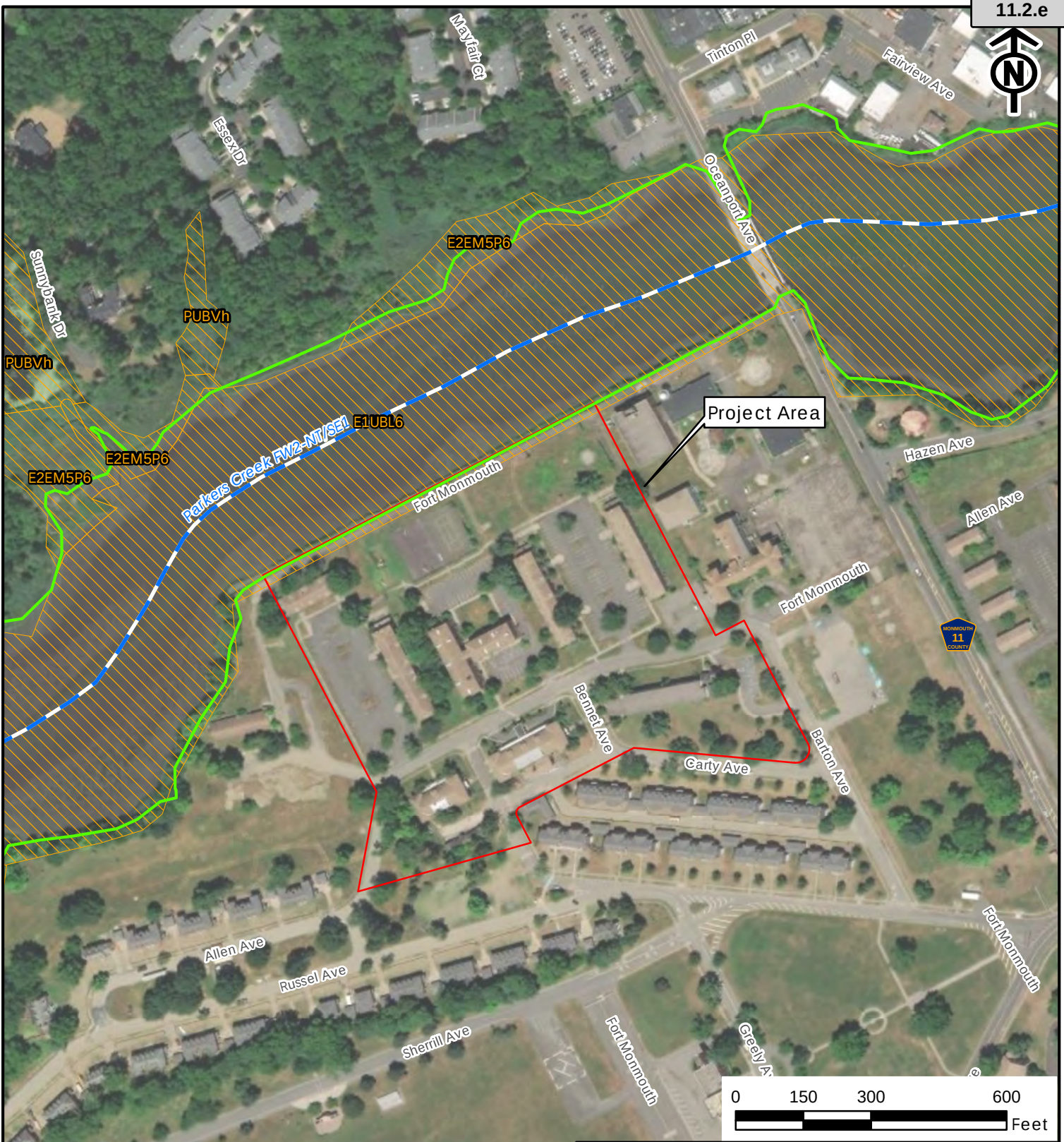
DATE: July 2020



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FIGURE 9

Packet Pg. 158



LEGEND

- Project Area
- NWI Wetlands
- Upper Wetland Boundary
- Surface Water/Streams

Source: NJDEP 1970 Wetlands Basemap, ESRI. The information on this map is based on a compilation of publicly available New Jersey Department of Environmental Protection (NJDEP) Geographic Information System (GIS) geospatial data and visual reconnaissance of the vicinity. No verification or approval by NJDEP of the information presented is implied. No verification by a professional land surveyor has been performed.

SOMERSET DEVELOPMENT, LLC

NWI WETLANDS MAP

Fort Monmouth
Block 110, Portion of Lot 1
Borough of Oceanport, Monmouth County, New Jersey

SCALE: 1" = 300'

DATE: July 2020



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FIGURE 10

Packet Pg. 159



LEGEND

- Project Area
- Photograph Location

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PHOTOGRAPH LOCATION MAP

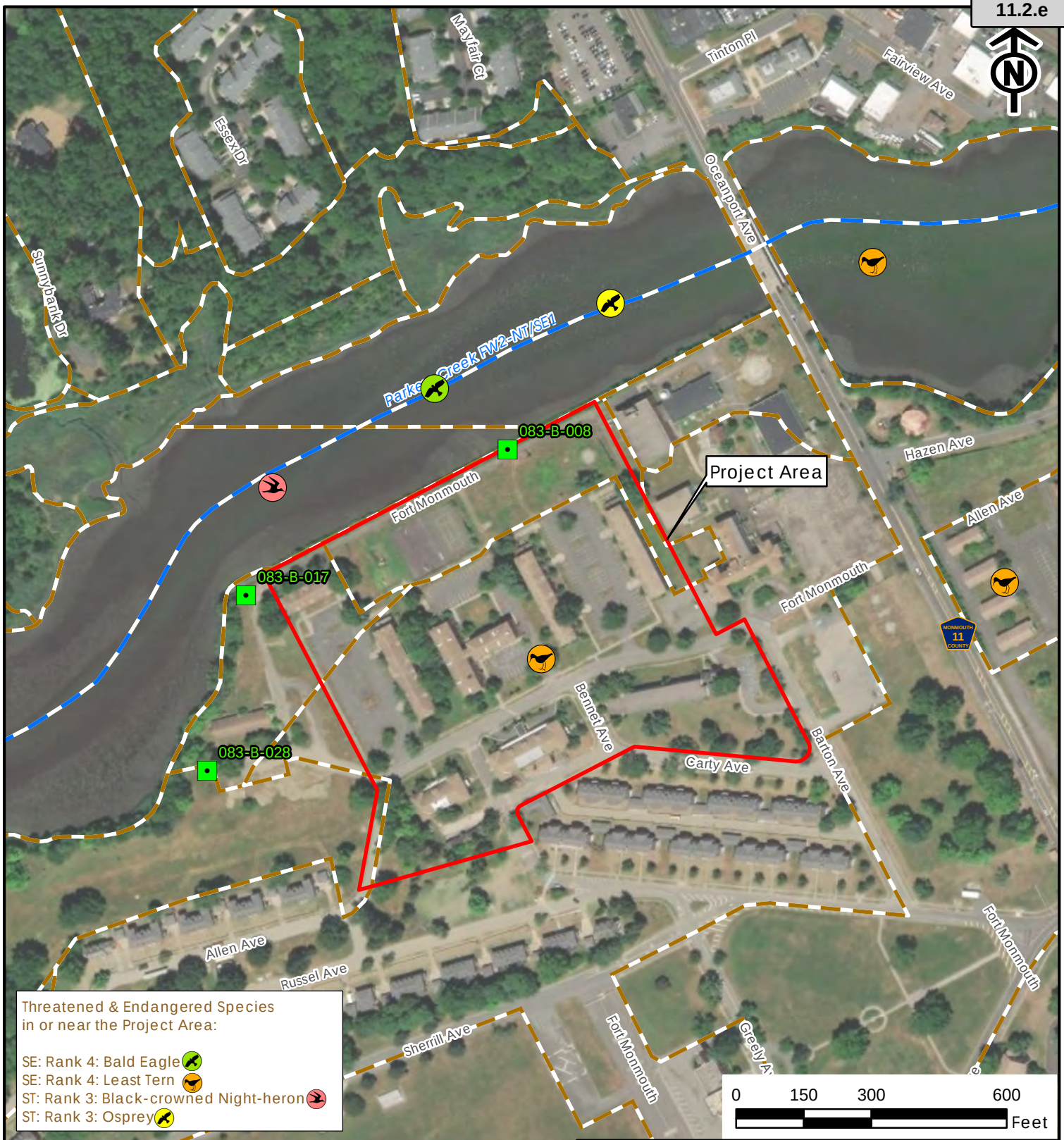
Fort Monmouth
Block 110, Lot 1
Borough of Oceanport, Monmouth County, New Jersey

SCALE: 1" = 300'

DATE: July 2020



FIGURE 11
Packet Pg. 160



LEGEND

- Project Area
- Threatened & Endangered Species
- Osprey Nesting Platforms
- Surface Water/Streams

Source: World Imagery Online Service, ESRI. The information on this map is based on a compilation of publicly available New Jersey Department of Environmental Protection (NJDEP) Geographic Information System (GIS) geospatial data and visual reconnaissance of the vicinity. No verification or approval by NJDEP of the information presented is implied. No verification by a professional land surveyor has been performed.

SOMERSET DEVELOPMENT, LLC

THREATENED/ENDANGERED SPECIES MAP

Fort Monmouth
Block 110, Portion of Lot 1
Borough of Oceanport, Monmouth County, New Jersey

SCALE: 1" = 300'

DATE: July 2020



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FIGURE 12
Packet Pg. 161

Attachment A: NJDEP Tideland Grant Map 539-2172



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BOROUGH OF LITTLE SILVER



CONVEYANCE INDEX		
	GRANT TO JOHN HENSTEN, 1/30/56, LIBER W-3, PG 199, CONSIDERATION \$1000	(9)
	GRANT TO JOHN HENSTEN, 3/4/58, LIBER R-4, PG 150, CONSIDERATION \$1000	
	TRACT ONE OF GRANT TO NEW YORK & LONG BRANCH R.R. CO. 6/26/1886, LIBER 1, PG 76, CONSIDERATION \$1000, FOUR TRACTS GRANT THE BODIUM OF THE SILVER, 7/2/1903, LIBER 4, PG 46, CONSIDERATION \$454 73	
	GRANT TO FRANK HENSTEN, 3/14/60, LIBER P-4, PG 22, CONSIDERATION \$218 09	
	LICENSE - FILE 1323 - 09 - 0004 I, T0109002	
6A	LICENSE - FILE 1338 - 09 - 0022 I, T01090001	
	GRANT TO GEORGE C BRAY, ET UX, 10/14/63, LIBER Y-4, PG 173, ANNUAL RENTAL \$250	
	CONVERTED TO A GRANT TO JAMES ROBINSON, ET UX 9/29/67, LIBER Y-4, PG 380, ANNUAL RENTAL \$300	
	GRANT TO ARTHUR AND JEAN HOTALING, 10/14/63, LIBER X-4, PG 124, CONSIDERATION \$450 00, FILE GI-117	
	10 YR LEASE TO M RAYMOND McGOWAN, ET UX, 10/24/63, LIBER F-4, PG 104, ANNUAL RENTAL \$250, CONSIDERATION \$4000	(9)
	CONVERTED TO A GRANT 9/29/67, LIBER Y-4, PG 191, CONSIDERATION \$4000, FILE GI-118	
	GRANT TO ROBERT COOK, 9/25/22, LIBER T-5, PG 233, CONSIDERATION \$1515 30	
	GRANT TO WILLIAM VAN PELT, 12/20/23, LIBER F-1, PG 187, CONSIDERATION \$446 00	
	GRANT TO WILLIAM VAN PELT, 12/20/23, LIBER F-1, PG 187, CONSIDERATION \$1200	
	EXTENSION GRANT TO LENA LAURINO, 4/18/60, LIBER K-4, PG 35, CONSIDERATION \$250	
	EXTENSION GRANT TO DAVID J. DIAMOND, 4/4/64, LIBER N-4, PG 107, CONSIDERATION \$250	
	GRANT TO ROBERT R. AND NORMA E. MCKEE, 6/16/60, LIBER N-4, PG 230, CONSIDERATION \$408 85	
	GRANT TO ELEANOR R. HARKS, 4/14/60, LIBER J-4, PG 100, CONSIDERATION \$400 00	
	EXTENSION GRANT TO LOUIS H. HARKS, 4/18/60, LIBER K-4, PG 1, CONSIDERATION \$492 88	
	GRANT TO JEROLD H. MAYER, 9/21/31, LIBER Y-1, PG 306, CONSIDERATION \$400 00	
	15 YR LEASE TO LOUIS J. AND MARY P. DELLERA, 4/17/61, LIBER P-4, PG 296, ANNUAL RENTAL \$235, CONSIDERATION \$747 60	

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL
PROTECTION
BUREAU OF TIDELANDS MANAGEMENT
MAP SHOWING CONVEYANCES ON
PARKERS AND OCEANPORT CREEKS
BOROUGH OF SHREWSBURY, OCEANPORT AND
LITTLE SILVER - MONMOUTH COUNTY

The areas, boundaries and dimensions shown on this plan are derived from record tideland grants, quitclaim deeds, leases, licenses, easements and judgments quieting title. This map should be used for reference purposes only. The individual instrument should be consulted to ascertain the accurate legal description and the significance of all substantive terms and conditions.

(20)	ANNUAL LICENSE TO COUNTY OF MONMOUTH, 5/4/73, ANNUAL FEE \$150.00, FILE 72-214, REISSUED AS 5YR LICENSE, 5/4/76 AT \$180.00/YR - EXPIRED	(31)	STATEMENT OF NO INTEREST TO ANNA COOK, 7/11/07, LIBER M-10 PG.144 etc., LOT 6, BLOCK 109, FILE#006 - 06E-1
(21)	5YR LICENSE TO COUNTY OF MONMOUTH, 5/10/75, ANNUAL FEE \$180.00, FILE 76-387, REISSUED AS 5YR LICENSE TO COUNTY OF MONMOUTH, 1/13/77, LIBER N-6, PG 193, CONSIDERATION \$3,000.00, FILE 76-387	(32)	LICENSE - FILE:1323-10-0005-1, TD1100001
(22)	ONE FEE LICENSE TO NEW JERSEY - AMERICAN WATER CO./12/27/89, FILE #1-891000, FILE 88-04862-7	(33)	LICENSE - FILE:1336-10-0004-1, TD1140001
(23)	FILE #97-0228-2, 01/24/97, One Fee License to GRU Telecom Services, Inc.	(34)	GRANT- FILE:1345-09-0002, TDO 09001, LIBER 8-11, PG.136 etc.
(24)	FILE #97-0362-T, One Fee License to GRU Telecom Services, Inc./2/29/98, FILE #1-981000, FILE 88-04862-7	(35)	LICENSE - FILE:1336-10-0005-1, TD1100001
(25)	LICENSE - FILE:1323-04-0005-1, TD1100001	(36)	LICENSE - FILE:1336-14-0001-1, TD1140001
(26)	LICENSE - FILE:1323-08-0004-1, TD1100001		
(27)	STATEMENT OF NO INTEREST, 7/20/01, TO EVAN L. GOLDSTEIN & LILY YUAN LIN, LIBER 8-5, PG 76, CONS \$250.00, FILE #0-0335, BLOCK 83, LOT 123		
(28)	LICENSE - FILE:1323-02-0013-1,TD1100002		
(29)	MARINA LICENSE - FILE:1338-10-0004-1, TD1100003		
(30)	STATEMENT OF NO INTEREST TO THE TOWNSHIP OF GAMMAG & MAYNETH GAMMAG, 10/27/08, LIBER L-10, PG.76 etc., LOT 6, BLOCK 120, FILE #0-0335, BLOCK 83, LOT 123		

SCALE : 1" = 200'

ATLAS SHEET NO. 539-2172

Attachment B: Site Photographs

www.dewberry.com



Photograph 1: Northeastern view of Parkers Creek, bulkhead, and a coastal wetland fringe adjacent to the bulkhead.



Photograph 2: Southwestern view of Parkers Creek, bulkhead and narrow coastal fringe of vegetation adjacent to the bulkhead on the project site. Osprey nesting platform 083-B-008 is visible in center of photograph.



Photograph 3: Eastern view of building 363



Photograph 4: View facing south from Parkers Creek, toward former playground equipment and residential buildings.



Photograph 5: Northern view of building 364, with Parkers Creek in background



Photograph 6: Southwestern view of Signal Avenue and buildings 270 and 271 on left side of road, building 365 on right



Photograph 7: Southern view of the parking area for building 363 (foreground) and Signal Avenue and building 271



Photograph 8: Northern view of Signal Avenue and buildings 365 and 362



Photograph 9: View facing north of buildings 361 (right) and 362 (left).



Photograph 10: Northern view of Parkers Creek at the terminus of Lockwood Avenue. Osprey nesting platform 083-B-017 and fringe of *Phragmites* wetlands along the shoreline of the creek is visible.



Photograph 11: View of Parkers Creek, wetlands and a single family home on the northern side of the creek.



Photograph 12: Western view of Parkers Creek and fringe of *Phragmites* along the bulkhead, at the terminus of Lockwood Avenue.

Attachment C: Agency Correspondence

www.dewberry.com



State of New Jersey

MAIL CODE 501-04

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF PARKS & FORESTRY

NEW JERSEY FOREST SERVICE

OFFICE OF NATURAL LANDS MANAGEMENT

P.O. BOX 420

TRENTON, NJ 08625-0420

Tel. (609) 984-1339 Fax (609) 984-0427

PHILIP D. MURPHY

Governor

SHEILA Y. OLIVER

Lt. Governor

CATHERINE R. McCABE

Commissioner

September 19, 2019

Steven Finch
Dewberry Engineers, Inc.
600 Parsippany Road, Suite 301
Parsippany, NJ 07054

Re: Fort Monmouth - Somerset
Block(s) - 110, Lot(s) - 1
Oceanport Borough, Monmouth County

Dear Mr. Finch:

Thank you for your data request regarding rare species information for the above referenced project site.

Searches of the Natural Heritage Database and the Landscape Project (Version 3.3) are based on a representation of the boundaries of your project site in our Geographic Information System (GIS). We make every effort to accurately transfer your project bounds from the topographic map(s) submitted with the Natural Heritage Data Request Form into our Geographic Information System. We do not typically verify that your project bounds are accurate, or check them against other sources.

We have checked the Landscape Project habitat mapping and the Biotics Database for occurrences of any rare wildlife species or wildlife habitat on the referenced site. The Natural Heritage Database was searched for occurrences of rare plant species or ecological communities that may be on the project site. Please refer to Table 1 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented on site. A detailed report is provided for each category coded as 'Yes' in Table 1.

We have also checked the Landscape Project habitat mapping and Biotics Database for occurrences of rare wildlife species or wildlife habitat in the immediate vicinity (within ¼ mile) of the referenced site. Additionally, the Natural Heritage Database was checked for occurrences of rare plant species or ecological communities within ¼ mile of the site. Please refer to Table 2 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented within the immediate vicinity of the site. Detailed reports are provided for all categories coded as 'Yes' in Table 2. These reports may include species that have also been documented on the project site.

The Natural Heritage Program reviews its data periodically to identify priority sites for natural diversity in the State. Included as priority sites are some of the State's best habitats for rare and endangered species and ecological communities. Please refer to Tables 1 and 2 (attached) to determine if any priority sites are located on or in the immediate vicinity of the site.

A list of rare plant species and ecological communities that have been documented from the county (or counties), referenced above, can be downloaded from <http://www.state.nj.us/dep/parksandforests/natural/heritage/countylist.html>. If suitable habitat is present at the project site, the species in that list have potential to be present.

Status and rank codes used in the tables and lists are defined in EXPLANATION OF CODES USED IN NATURAL HERITAGE REPORTS, which can be downloaded from http://www.state.nj.us/dep/parksandforests/natural/heritage/nhpcodes_2010.pdf.

Beginning May 9, 2017, the Natural Heritage Program reports for wildlife species will utilize data from Landscape Project Version 3.3. If you have questions concerning the wildlife records or wildlife species mentioned in this response, we

NHP File No. 19-4007338-17595

recommend that you visit the interactive web application at the following URL, <https://njdep.maps.arcgis.com/apps/webappviewer/index.html?id=0e6a44098c524ed99bf739953cb4d4c7>, or contact the Division of Fish and Wildlife, Endangered and Nongame Species Program at (609) 292-9400.

For additional information regarding any Federally listed plant or animal species, please contact the U.S. Fish & Wildlife Service, New Jersey Field Office at <http://www.fws.gov/northeast/njfieldoffice/endangered/consultation.html>.

PLEASE SEE 'CAUTIONS AND RESTRICTIONS ON NHP DATA', which can be downloaded from <http://www.state.nj.us/dep/parksandforests/natural/heritage/newcaution2008.pdf>.

Thank you for consulting the Natural Heritage Program. The attached invoice details the payment due for processing this data request. Feel free to contact us again regarding any future data requests.

Sincerely,



Robert J. Cartica
Administrator

c: NHP File No. 19-4007338-17595

Mail Code 501-04 Department of Environmental Protection New Jersey Forest Service Office of Natural Lands Management P.O. Box 420 Trenton, New Jersey 08625-0420 Tel. (609) 984-1339 Fax. (609) 984-1427		<i>Invoice</i>	
		Date	Invoice #
		9/19/2019	17595
Bill to: Dewberry Engineers, Inc. 600 Parsippany Road, Suite 301 Parsippany, NJ 07054		Make check payable to: DEP - Office of Natural Lands Management <u>Forward with a copy of this statement to:</u> Mail Code 501-04 Office of Natural Lands Management P.O. Box 420 Trenton, New Jersey 08625-0420	
Quantity (hrs.)	Description	Rate (per hr.)	Amount
1	Natural Heritage Database search for locational information of rare species and ecological communities. Project: 19-4007338-17595	\$ 70.00	\$ 70.00
Steven Finch Project Name: Fort Monmouth - Somerset		Total	\$ 70.00

Table 1: On Site Data Request Search Results (6 Possible Reports)

<u>Report Name</u>	<u>Included</u>	<u>Number of Pages</u>
1. Possibly on Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	No	0 pages included
2. Natural Heritage Priority Sites On Site	No	0 pages included
3. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.3 Species Based Patches	Yes	1 page(s) included
4. Vernal Pool Habitat on the Project Site Based on Search of Landscape Project 3.3	No	0 pages included
5. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.3 Stream Habitat File	No	0 pages included
6. Other Animal Species On the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	No	0 pages included

**Rare Wildlife Species or Wildlife Habitat on the
Project Site Based on Search of
Landscape Project 3.3 Species Based Patches**

Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank
<i>Aves</i>								
	Bald Eagle	Haliaeetus leucocephalus	Foraging	4	NA	State Endangered	G5	S1B,S2N
	Black-crowned Night-heron	Nycticorax nycticorax	Foraging	3	NA	State Threatened	G5	S2B,S3N
	Common Tern	Sterna hirundo	Foraging	2	NA	Special Concern	G5	S3B,S4N
	Least Tern	Sternula antillarum	Foraging	4	NA	State Endangered	G4	S1B,S1N
	Osprey	Pandion haliaetus	Foraging	3	NA	State Threatened	G5	S2B,S4N
	Osprey	Pandion haliaetus	Nest	3	NA	State Threatened	G5	S2B,S4N

Table 2: Vicinity Data Request Search Results (6 possible reports)

<u>Report Name</u>	<u>Included</u>	<u>Number of Pages</u>
1. Immediate Vicinity of the Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	No	0 pages included
2. Natural Heritage Priority Sites within the Immediate Vicinity	No	0 pages included
3. Rare Wildlife Species or Wildlife Habitat Within the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Species Based Patches	Yes	1 page(s) included
4. Vernal Pool Habitat In the Immediate Vicinity of Project Site Based on Search of Landscape Project 3.3	Yes	1 page(s) included
5. Rare Wildlife Species or Wildlife Habitat In the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Stream Habitat File	No	0 pages included
6. Other Animal Species In the Immediate Vicinity of the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	No	0 pages included

**Rare Wildlife Species or Wildlife Habitat Within the
Immediate Vicinity of the Project Site Based on Search of
Landscape Project 3.3 Species Based Patches**

Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank
Aves								
	Bald Eagle	Haliaeetus leucocephalus	Foraging	4	NA	State Endangered	G5	S1B,S2N
	Black-crowned Night-heron	Nycticorax nycticorax	Foraging	3	NA	State Threatened	G5	S2B,S3N
	Common Tern	Sterna hirundo	Foraging	2	NA	Special Concern	G5	S3B,S4N
	Least Tern	Sternula antillarum	Foraging	4	NA	State Endangered	G4	S1B,S1N
	Osprey	Pandion haliaetus	Foraging	3	NA	State Threatened	G5	S2B,S4N
	Osprey	Pandion haliaetus	Nest	3	NA	State Threatened	G5	S2B,S4N

**Vernal Pool Habitat
In the Immediate Vicinity of
Project Site Based on Search of
Landscape Project 3.3**

Vernal Pool Habitat Type	Vernal Pool Habitat ID
Potential vernal habitat area	1613
Total number of records:	1



United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Jersey Ecological Services Field Office
4 E. Jimmie Leeds Road, Suite 4

Galloway, NJ 08205

Phone: (609) 646-9310 Fax: (609) 646-0352

<http://www.fws.gov/northeast/njfieldoffice/Endangered/consultation.html>



In Reply Refer To:
Consultation Code: 05E2NJ00-2020-SLI-0328
Event Code: 05E2NJ00-2020-E-00568
Project Name: Fort Monmouth Lodging Tract

December 05, 2019

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species that may occur in your proposed action area and/or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under Section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*)

If the enclosed list indicates that any listed species may be present in your action area, please visit the New Jersey Field Office consultation web page as the next step in evaluating potential project impacts: <http://www.fws.gov/northeast/njfieldoffice/Endangered/consultation.html>

On the New Jersey Field Office consultation web page you will find:

- habitat descriptions, survey protocols, and recommended best management practices for listed species;
- recommended procedures for submitting information to this office; and
- links to other Federal and State agencies, the Section 7 Consultation Handbook, the Service's wind energy guidelines, communication tower recommendations, the National Bald Eagle Management Guidelines, and other resources and recommendations for protecting wildlife resources.

The enclosed list may change as new information about listed species becomes available. As per Federal regulations at 50 CFR 402.12(e), the enclosed list is only valid for 90 days. Please return to the ECOS-IPaC website at regular intervals during project planning and implementation to obtain an updated species list. When using ECOS-IPaC, be careful about drawing the boundary of your Project Location. Remember that your action area under the ESA is not limited to just the footprint of the project. The action area also includes all areas that may be indirectly affected

through impacts such as noise, visual disturbance, erosion, sedimentation, hydrologic change, chemical exposure, reduced availability or access to food resources, barriers to movement, increased human intrusions or access, and all areas affected by reasonably foreseeable future that would not occur without ("but for") the project that is currently being proposed.

We appreciate your concern for threatened and endangered species. The Service encourages Federal and non-Federal project proponents to consider listed, proposed, and candidate species early in the planning process. Feel free to contact this office if you would like more information or assistance evaluating potential project impacts to federally listed species or other wildlife resources. Please include the Consultation Tracking Number in the header of this letter with any correspondence about your project.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New Jersey Ecological Services Field Office

4 E. Jimmie Leeds Road, Suite 4

Galloway, NJ 08205

(609) 646-9310

Project Summary

Consultation Code: 05E2NJ00-2020-SLI-0328

Event Code: 05E2NJ00-2020-E-00568

Project Name: Fort Monmouth Lodging Tract

Project Type: DEVELOPMENT

Project Description: Proposed Residential Development

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/40.31955492564508N74.03836899173369W>



Counties: Monmouth, NJ

Endangered Species Act Species

There is a total of 0 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birds and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Oystercatcher <i>Haematopus palliatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8935	Breeds Apr 15 to Aug 31
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Aug 31

NAME	BREEDING SEASON
Black Skimmer <i>Rynchops niger</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5234	Breeds May 20 to Sep 15
Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler <i>Cardellina canadensis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Clapper Rail <i>Rallus crepitans</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 10 to Oct 31
Dunlin <i>Calidris alpina arctica</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Least Tern <i>Sterna antillarum</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 20 to Sep 10
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Prairie Warbler <i>Dendroica discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Purple Sandpiper <i>Calidris maritima</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Red-throated Loon <i>Gavia stellata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere

NAME	BREEDING SEASON
Ruddy Turnstone <i>Arenaria interpres morinella</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Seaside Sparrow <i>Ammodramus maritimus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 20
Semipalmated Sandpiper <i>Calidris pusilla</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Snowy Owl <i>Bubo scandiacus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Whimbrel <i>Numenius phaeopus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9483	Breeds elsewhere
Willet <i>Tringa semipalmata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 5
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ “Proper Interpretation and Use of Your Migratory Bird Report” before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

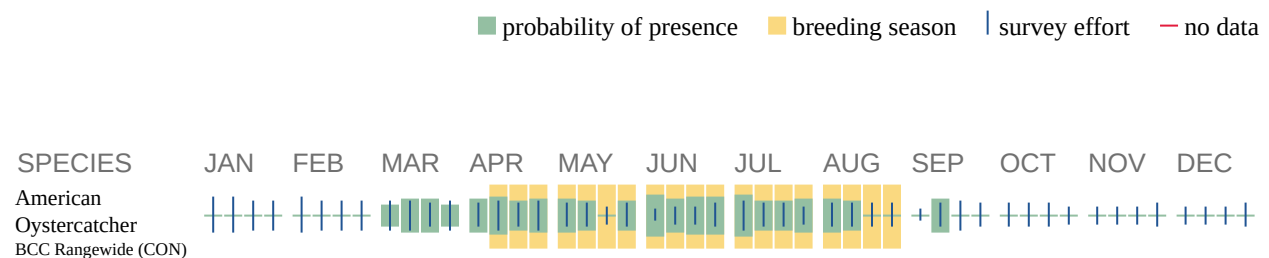
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

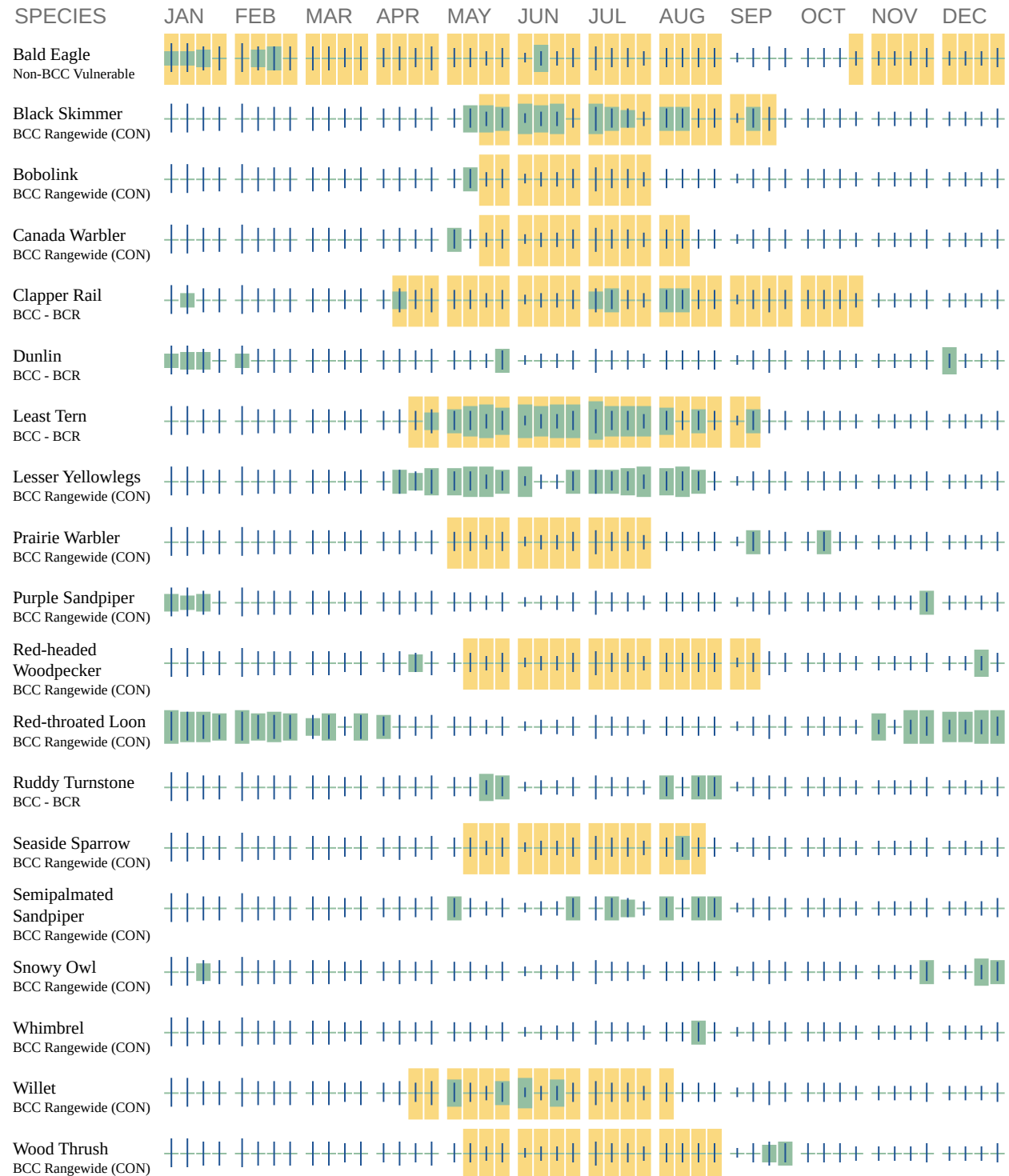
No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>

- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and

how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

ESTUARINE AND MARINE DEEPWATER

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A horizontal bar composed of three colored segments: green, orange, and blue.

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