

**SHORELINE DRIVE GATEWAY  
FEASIBILITY STUDY  
Portsmouth and Middletown, Rhode Island**



JUNE 2007

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# Shoreline Drive Gateways Feasibility Study Portsmouth and Middletown, Rhode Island

JUNE 2007

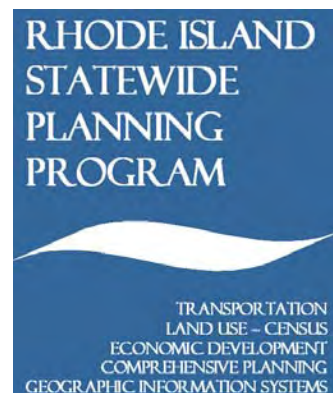
Prepared for:

**Aquidneck Island Planning Commission**  
321 East Main Road  
Portsmouth, RI 02871

Prepared by:

**Pare Corporation**  
8 Blackstone Valley Place  
Lincoln, RI 02865

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Rhode Island Statewide Planning Program  
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Administration*



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## TABLE OF CONTENTS

<u>SECTION</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
1	OVERVIEW	
	Introduction	1
	Figure 1: Locus Map	2
	Figure 2: Portsmouth Gateway Area	3
	Figure 3: Middletown Gateway Area	4
	Public Meetings and Community Input	5
2	EXISTING CONDITIONS	9
	South Gateway: Middletown	9
	North Gateway: Portsmouth	11
3	DATA COLLECTION	14
	Findings	15
4	TRAFFIC SAFETY ANALYSIS	19
5	DESIGN CONSIDERATIONS	21
	South Gateway: Middletown	21
	North Gateway: Portsmouth	23
6	RIGHT OF WAY REQUIREMENTS	25
	Shoreline Drive	25
	Stringham Road	26
	Simonpietri Drive	27
	Fleet Access Road	27
7	CAPACITY ANALYSIS	28
	Graph 1: Shoreline Drive Level of Service with Peak Hour Diversion of Traffic from West Main Road	29
8	ALTERNATIVES	
	South Gateway: Middletown	30
	South Gateway Concept Plan	31
	North Gateway: Portsmouth	33
	North Gateway Alternative 1: Upper “T” Concept Plan	34
	North Gateway: Alternative 2: Upper Roundabout Concept Plan	36
	North Gateway Alternative 3: Mid Slope “T” Concept Plan	39
	North Gateway Alternative 4: Lower Roundabout Concept Plan	41



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9	RECOMMENDATIONS	42
	South Gateway: Middletown	42
	North Gateway: Portsmouth	43
	Conclusion	44

**APPENDICES**

Appendix A	Traffic Data
Appendix B	Crash Data
Appendix C	Opinion of Probable Cost
Appendix D	Preliminary Design – North Gateway



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## OVERVIEW

### Introduction

The Town of Portsmouth and the Aquidneck Island Planning Commission (AIPC) have retained Pare Corporation (PARE) to prepare a Feasibility Study for the potential opening of Defense Highway (Burma Road) for public use between Coddington Highway in Middletown and West Main Road (Route 114)/Stringham Road in Portsmouth. This project investigates the connections at the north and south ends.

Creation of a gateway at the south end, from Coddington Highway through Naval Station Newport to the Gate 17 Access Road via Simonpietri Drive would improve access to the Navy's new North Gate from the Newport Bridge and provide access to Defense Highway, also referred to as Shoreline Drive. The northern gateway investigates intersection improvements on Stringham Road at Shoreline Drive.

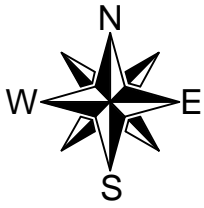
It is anticipated that any improvements would result in the following:

- Improve the use of Shoreline Drive as a scenic route
- Provide a viable bypass for congested West Main Road (Route 114)
- Improve access to existing and proposed Melville development
- Provide easy access to the new North Gate at the Navy

The project area is identified on the Locus Map, Figure 1. Maps of gateways are presented in Figures 2 and 3.

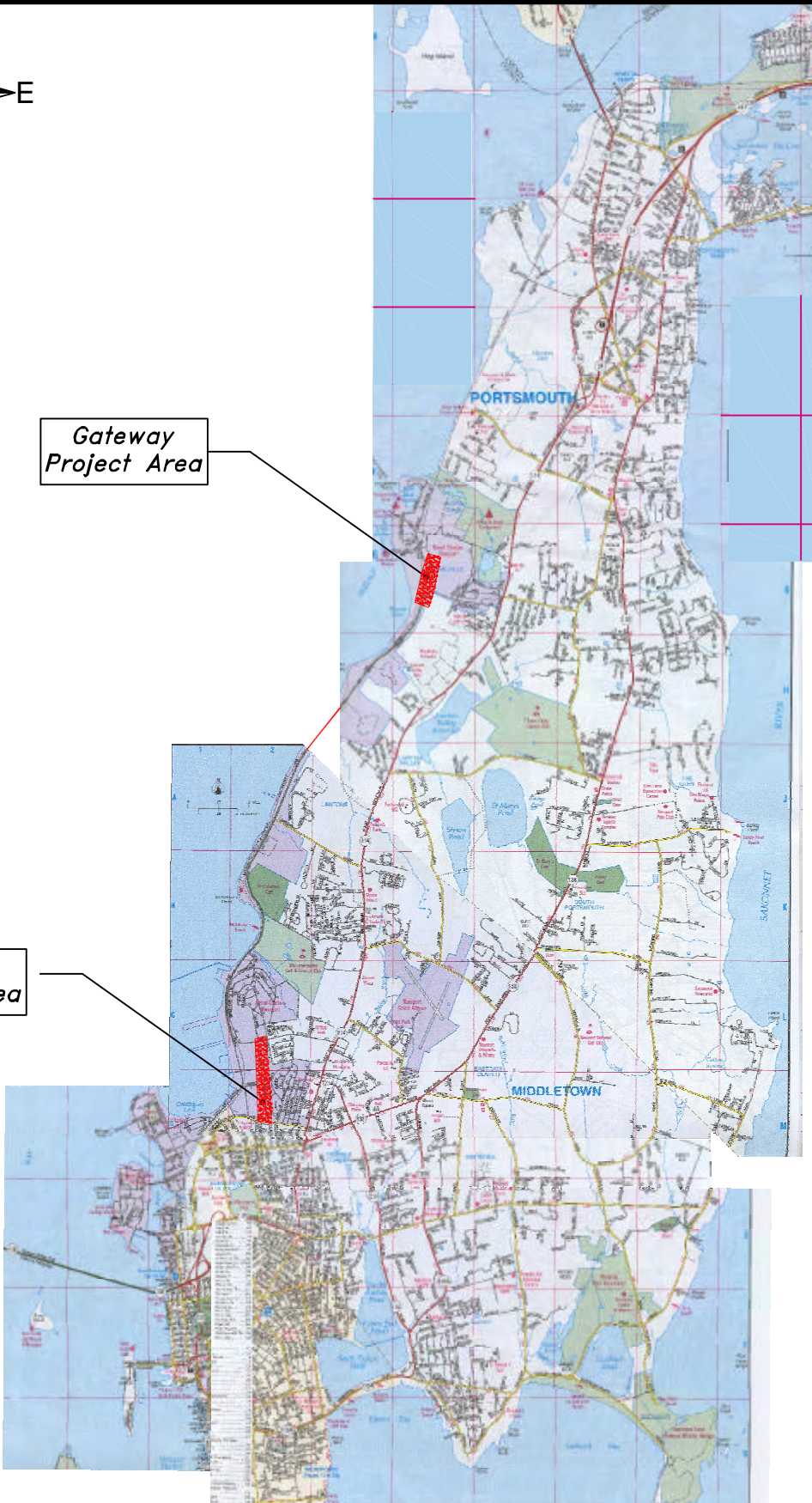
The opening of a public roadway between Coddington Highway in Middletown and West Main Road (Route 114)/Stringham Road in Portsmouth is one of many improvements proposed as part of the *West Side Master Plan*. The *West Side Master Plan* was prepared as an initiative of the Aquidneck Island Planning Commission, addressing the short and long term planning issues of the West Side of Aquidneck Island. The West Side of Aquidneck Island comprises the shore and land that line Narragansett Bay, beginning with the City of Newport on the southern end and continuing north to the Towns of Middletown and Portsmouth. The issues addressed in the *Master Plan* involve all three municipalities and includes transportation strategies, as well as land use, economic development, and utilities.





Gateway  
Project Area

Gateway  
Project Area



PROJECT NO. 06218.00

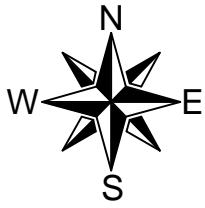
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FIGURE 1

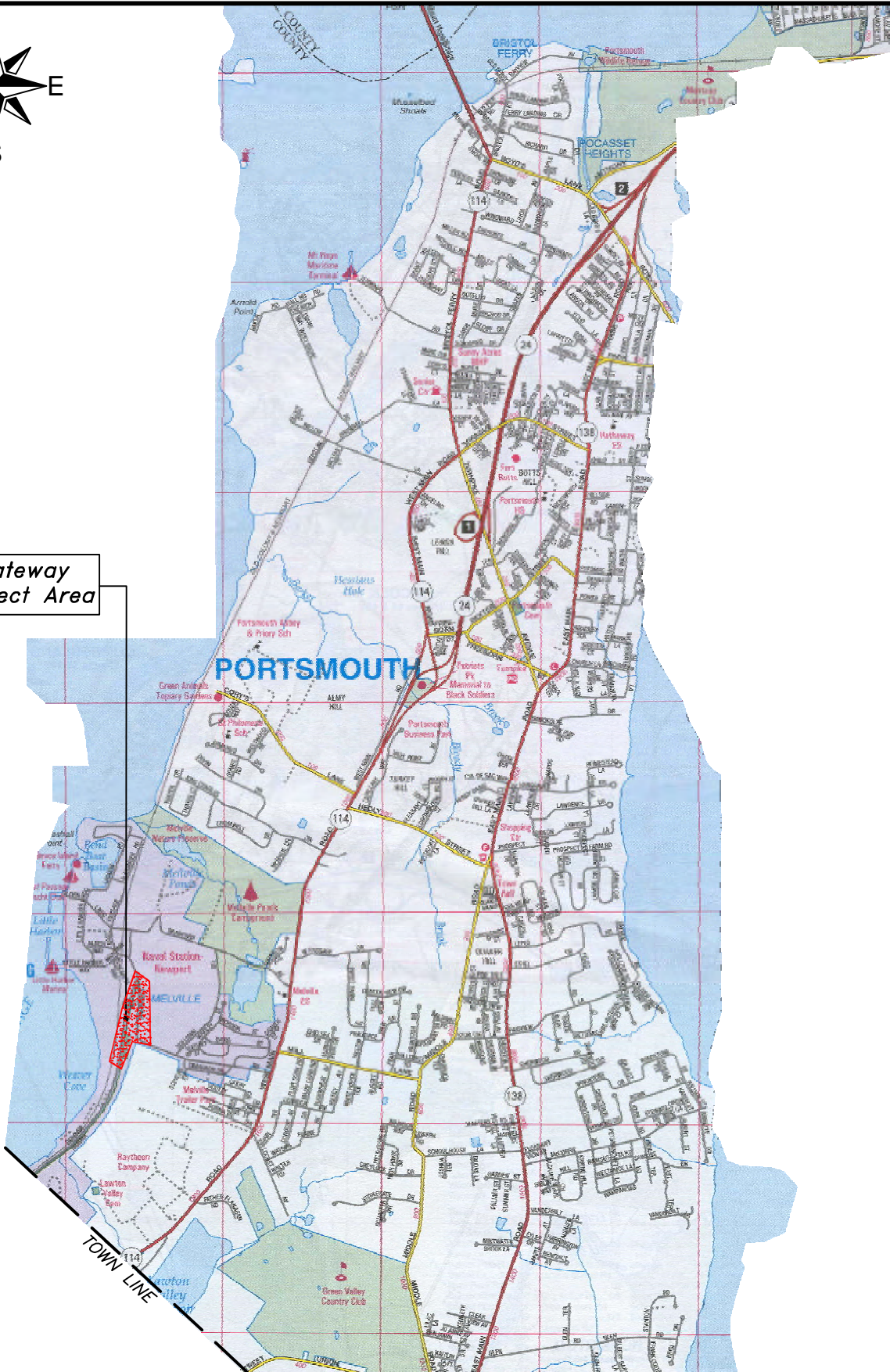
# OVERALL GATEWAY PROJECT AREA PORTSMOUTH / MIDDLETOWN, RHODE ISLAND



**PARE CORPORATION**  
ENGINEERS - SCIENTISTS - PLANNERS  
8 BLACKSTONE VALLEY PLACE  
LINCOLN, RI 02865  
401-334-4100



Gateway  
Project Area



PROJECT NO. 06218.00

DATE: JANUARY, 2007

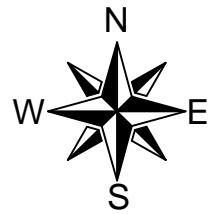
FIGURE 2

# GATEWAY PROJECT AREA

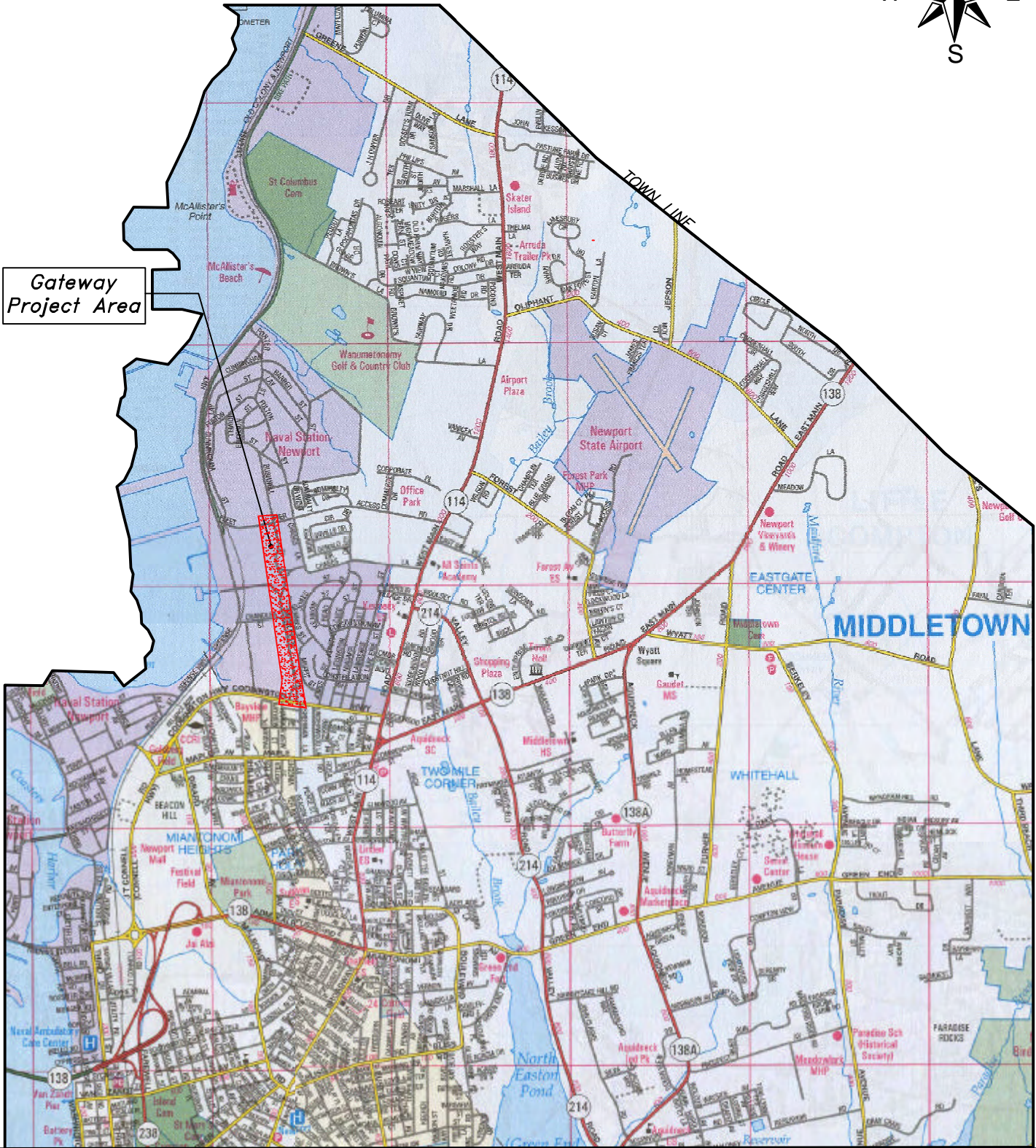
PORTSMOUTH, RHODE ISLAND



**PARE CORPORATION**  
ENGINEERS - SCIENTISTS - PLANNERS  
8 BLACKSTONE VALLEY PLACE  
LINCOLN, RI 02865  
401-334-4100



Gateway Project Area



PROJECT NO. 06218.00 DATE: JANUARY, 2007

FIGURE 3

# GATEWAY PROJECT AREA

MIDDLETOWN, RHODE ISLAND



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ENGINEERS - SCIENTISTS - PLANNERS  
8 BLACKSTONE VALLEY PLACE  
LINCOLN, RI 02865  
401-334-4100

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Simonpietri Drive, Defense Highway (Burma Road) and Stringham Road rights-of-way and roadways are currently owned by the Navy as part of larger U.S. Government holdings. This feasibility study will begin to address issues related to transfer of this alignment to state or local control. The information in this report may be used to help develop an agreement between the Navy and state/local transportation agencies.

This feasibility study provides a conceptual layout for the two Gateway project areas: Simonpietri Drive in Middletown and the Stringham Road/Defense Highway (Burma Road) intersection in Portsmouth. Also included with this study is the description of the existing conditions in the Gateway areas. Site constraints were documented through an inventory of existing conditions, property ownership, utilities, review of Navy conditions, utility and topography mapping, Coastal Resources Management Council (CRMC) and Rhode Island Department of Environmental Management (RIDEM) jurisdictional areas, and existing Navy topographical mapping. Additionally, this study addresses important issues for pedestrian connections and bicycle access in the Gateway areas.

Although concepts presented in the *West Side Master Plan* and *West Side Transportation Guide Plan* were evaluated as part of this analysis, additional alternatives have been advanced for consideration of feasibility, based on public input, site evaluation, and information from Naval Station Newport (NSN) and Naval Undersea Warfare Center (NUWC) Public Works Departments.

### **Public Meetings and Community Input**

The West Side Task Force worked with the project team and AIPC staff to provide input regarding potential alignments at a series of three meetings in the fall of 2006 and spring of 2007. The task force included Peter Healy from the Rhode Island Department of Transportation (RIDOT) and Walter Slocomb from the Rhode Island Statewide Planning Program. Committee members included property owners and town planners from both Portsmouth and Middletown.

Issues for consideration in later design phases discussed at the final steering committee meeting on June 6, 2007 included the following:

- Continued concern was expressed regarding truck usage of Shoreline Drive, recognizing that this north south route will avoid 12 signalized intersections on West Main Road. With presumed use of federal funds for construction, the roadway must be open to all



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vehicles, including trucks. It was further recognized that the northern gateway must be used by trucks to access marine trades and marinas in Melville.

- Discussion followed regarding the need to post Simonpietri Drive at the southern gateway to limit the transport of hazardous materials, if requested by the US Navy in accordance with any Anti Terrorism Force Protection (ATFP) requirements.

Several meetings or teleconferences were held with Navy staff during the project to collect information on project issues, development demand, and utilities:

- Keith Stokes, Executive Director, Newport County Chamber of Commerce on September 16, 2007
- Gerry Montani and Jim Sprague of NSN Department of Public Works on December 7, 2006
- David Sanders of NUWC on December 15, 2006

This information has been used to develop and refine project plans. Coordination was also initiated with the O'Neill Properties Group regarding plans at the Hood Site in Melville.

Three public meetings were held during the course of the study. The first meeting was held to listen to concerns and issues that the public may have regarding upgrade of Defense Highway as an alternative route on the island. Key feedback from the October 2006 public meeting included the following:

- Although several participants were concerned about limiting truck volumes on Shoreline Drive, it is not possible to utilize federal funding for roadway improvements while prohibiting truck traffic.
- Multi modal considerations were requested by several attendees. A multiuse path and connections to the island shuttle in Melville are important.
- Audience members felt safety is not a current concern at the Stringham Road/Defense Highway hairpin turn.
- Traffic volumes on West Main Road are adversely affecting local businesses. There is a very important need to relieve traffic volumes on West Main Road by diverting traffic to Shoreline Drive/Defense Highway.
- Overlook Condo Association members are concerned about clearing of vegetation and increase in traffic on Defense Highway.
- Traffic diversion calculations were a concern. How do we know how many will divert?



- 
- Enforcement/Jurisdictional issues are a concern that needs to be resolved as the project advances. Both the Town and the Navy respond to traffic accidents along Defense Highway.
  - The objective of this project is to reduce traffic volumes on West Main Road and not to control land development.
  - Lack of parking in Newport is a concern. There is a concern that this link may encourage more day trips since road congestion may decrease.
  - Suggestion: Take ownership and don't post it as alternate route. Locals will use as secret route.
  - Utility issues due to extensive Navy utilities must be addressed.
  - Hood Marina – 4500 new jobs. Will this strain the capacity?

The second public meeting was held on March 29, 2007 to present the range of alternatives developed for the North and South Gateways, and to receive feedback. Key discussion points included the following:

- Summer traffic volumes should be investigated as part of the traffic diversion. There was concern that if more vehicles are added onto Shoreline Drive using "average daily traffic" estimates, we're not addressing the peak tourist seasons.
- Utility upgrades/replacements must be looked at, especially for the Navy. Conflicts with tank farm oil lines and asbestos-insulated pipes are a concern.
- The lower roundabout may be within the Superfund zone.
- Concern was expressed regarding the number and size of trucks accessing the North Gate and Gate 2 via Defense Highway.
- Some suggested that toll financing be considered for Shoreline Drive.
- With East and West Main Roads over capacity, it will be important to consider how to increase use of the existing Defense Highway/Burma Road through public promotion.
- Gateway concepts should support rail use, especially at Melville.
- Simonpietri connector will be great for NUWC and other commuters - focus on this first.
- The Stringham curve upslope has black ice in winter. This was a safety issue this past winter for Portsmouth Police cruisers.

Shoreline Drive Feasibility Study findings were presented at a third public workshop on June 27, 2007.



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- Recommendations were presented for a lower roundabout at the North Gateway to provide an improved intersection for Shoreline Drive, Stringham Road, and access to Melville marine development.
  - South Gateway preliminary considerations were presented for an alignment along Simonpietri Drive through Naval Station Newport. Issues included the importance of maintaining emergency access, hardening or relocating facilities in accordance with Anti Terrorism Force Protection requirements, and providing adequate assurances that no costs would be borne by the Navy for public access improvements.



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## EXISTING ROADWAY CONDITIONS

Roadways of particular interest in the study area include Coddington Highway, Simonpietri Drive, and Defense Highway (Burma Road) in Middletown and West Main Road (Route 114), Stringham Road, and Defense Highway (Burma Road) in Portsmouth.

Functional classification of roadways group streets and highways according to the character of service they are intended to provide. The two major considerations in classifying highway and street networks functionally are access and mobility. The conflict between serving through movements and providing access to a dispersed pattern of trip origins and destinations necessitates the differences and gradations in the various functional types. The 2005-2015 Highway Functional Classification List published in June 2003 by the State of Rhode Island Statewide Planning Program classifies Coddington Highway and West Main Road (Route 114) as Urban Principal Arterials. The Urban Principal Arterial serves the major centers of activity of urbanized areas, the highest traffic volume corridors, the longest trip desires, and carries a high proportion of the total urban area travel although it constitutes a relatively small percentage of the total roadway network. It carries most of the trips entering and exiting the urban area, as well as most of the through movements bypassing the central city. The Principal Arterial functional class is generally comprised of all fully and partially controlled access facilities.

Stringham Road and Burma Road were classified on the 2005-2015 Highway Functional Classification List as Urban Collectors. The Urban Collector provides both land access service and traffic circulation within residential neighborhoods, commercial, and industrial areas. The Collector collects traffic from local streets and channels it into the arterial system.

Simonpietri Drive is unclassified, as it is not currently a public roadway.

### **South Gateway: Middletown**

The intersection of Simonpietri Drive with Coddington Highway forms a three-legged unsignalized intersection. Coddington Highway runs in an east/west direction and Simonpietri Drive runs in a north/south direction. Coddington Highway has two 12-foot lanes in each direction separated by a solid double yellow line. Coddington Highway is a state owned and maintained roadway. Simonpietri Drive is a Navy owned and maintained roadway, extending north from Gate 10 of NSN within the secure perimeter of the Naval Station. The roadway is not



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publicly used, as vehicles entering at Gate 10 must pass through security to proceed on Simonpietri Drive. The entrance to and exit from the Naval Station form two separate curb cuts, with the entrance located approximately 100 feet east of the exit. The entrance to NSN on Simonpietri Drive is approximately 45 feet wide, with no pavement markings. The exit from the Naval Station is approximately 30 feet wide with one designated left-turn lane and one designated right-turn lane. Exiting traffic is stop-controlled at the intersection.

Three intersections are located along Simonpietri Drive between Gate 10 and the termination of Simonpietri Drive at Gate 11. Each side street extends west from Simonpietri Drive into NSN. The first intersection, Simonpietri Drive and Commercial Drive, is located approximately 360 feet south of Coddington Highway. Commercial Drive is stop-controlled at the intersection. The second intersection, Simonpietri Drive and Chandler Street, is located approximately 800 feet south of Coddington Highway. This intersection is stop-controlled on both Simonpietri Drive and on Chandler Street. The third intersection, Simonpietri Drive and Anderson Avenue, is located approximately 1100 feet south of Coddington Highway.



*Simonpietri Drive Southbound*

Simonpietri Drive has one 14-foot lane in each direction separated by a solid yellow line. Beginning at Commercial Drive and extending north, the southbound side of the roadway includes a 5-foot wide bituminous sidewalk. Granite curbing is present on both sides of the roadway. Overhead cobrahead style lighting runs along the eastern side of the roadway and utility poles and wires run along the western side of the roadway. Simonpietri Drive is bordered

on the eastern side by a residential development owned by the Navy and on the western side by NSN.

Several buildings are located along Simonpietri Drive, including Building 76, located on the western side of Simonpietri Drive, and Building 10, located just north of the intersection of Simonpietri Drive with Anderson Avenue. Building 10, the former NSN fire station, is scheduled

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for demolition upon the completion of the new emergency response building, Building 1373, in 2007. Building 11, a NUWC administration building, is located north of Building 10 on the eastern side of Simonpietri Drive. Two bulk fuel oil storage tanks are currently under construction on the western side of the roadway. These are scheduled for completion in the fall of 2007.

Simonpietri Drive terminates at Gate 11 creating a four-legged signalized intersection with the Fleet Pier Access Road and Bushnell Street. Simonpietri Drive and Bushnell Street, which provides access to NUWC, run in a north/south direction and the Fleet Pier Access Road runs in an east/west direction. Simonpietri Drive at this intersection is secure, and motorists must pass through a security checkpoint prior to entering NSN. Simonpietri Drive is approximately 20 feet wide with one lane in each direction separated by a solid yellow line. The Fleet Pier Access Road east of Simonpietri Drive is approximately 25 feet wide with one lane in each direction. West of Simonpietri Drive, the roadway width is approximately 22 feet. On both portions of the roadway, a faded solid yellow line separates directional traffic. Bushnell Street is approximately 22 feet wide with one lane of traffic northbound and southbound.

#### **North Gateway: Portsmouth**

The intersection of Stringham Road and West Main Road (Route 114) forms a four-legged signalized intersection. Directly across from Stringham Road, the fourth leg of the intersection is formed by a Dunkin Donuts driveway. West Main Road (Route 114) runs in a north/south direction and Stringham Road runs in an east/west direction. Stringham Road at the intersection has one 11-foot designated left turn lane, one 12-foot through and right turn lane, and a two-foot shoulder eastbound, with an 11-foot lane and an 8-foot shoulder westbound. The northbound approach to the intersection on West Main Road (Route 114) has one 12-foot designated left turn lane, an 11-foot through lane, and a 12-foot through and right turn lane northbound with



*Stringham Road at West Main Road (Route 114)*

two 11-foot travel lanes southbound. The southbound approach on West Main Road (Route 114) has one 12-foot designated left turn lane, two 11-foot through lanes, and one 12-foot designated



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right turn lane southbound with an 11-foot and a 12-foot travel lane northbound. The westbound approach to the intersection, the Dunkin Donuts Driveway, has one 11-foot designated left turn lane and one 11-foot through and right turn lane westbound with a 12-foot lane eastbound.

Stringham Road within the project area generally has one lane and a variable shoulder in each direction. Eleven driveways abut Stringham Road east of Sullivan Drive (Gate 51 of Naval Station Newport) and three driveways abut Stringham Road between Sullivan Drive and Defense Highway (Burma Road). Stringham Road provides direct access to the Melville Navy Family Housing Development. Several local collector streets from neighborhoods, including Worden Street, Stevens Street, Sullivan Drive, and Alexander Road intersect with Stringham Road.

Between West Main Road (Route 114) and Cimarron Drive, lane widths on Stringham Road vary between 10 and 12 feet, with shoulder widths between 2 and 8 feet. A solid double yellow line separates directional traffic and shoulders are marked with solid white lines. A 30-foot parking area is provided adjacent to mailboxes on the southern side of the roadway east of Cimarron Drive. Pavement markings end on the roadway at Cimarron Drive. From Cimarron Drive west, Stringham Road width varies between 22 feet and 30 feet.

Concrete curb and concrete sidewalk are installed on the northern side of Stringham Road between West Main Road (Route 114) and Cimarron Drive. On the southern side of the roadway, concrete curb runs from West Main Road (Route 114) west to approximately the fourth driveway opening. Between this point and the western intersection with Cimarron Drive, no curbing is installed on Stringham Road. From Cimarron Drive west to Defense Highway



*Stringham Road Eastbound west of Sullivan Drive*

(Burma Road), concrete curb and bituminous sidewalk are installed on the southern side of the roadway. Utility poles run along the southern side of the roadway between West Main Road (Route 114) and Defense Highway (Burma Road). The posted speed limit on Stringham Road is 30 miles per hour up to the Sullivan Drive intersection, where it decreases to 25 miles per hour.



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West of Sullivan Drive, sideslopes on Stringham Road become severe. Abutting the farmland west of the residential developments, there is a 10% downslope followed by a sharp 200-foot radius curve. Stringham Road then continues northerly along a more level grade to the intersection with Defense Highway (Burma Road). Guardrail is installed along the roadway at various locations.

The intersection of Stringham Road and Defense Highway (Burma Road) forms a skewed three-legged unsignalized intersection. Defense Highway (Burma Road) runs in a north/south direction and Stringham Road runs in an east/west direction. Defense Highway (Burma Road) intersects Stringham Road at a severe angle, resulting in awkward turning movements at the intersection. The major turning movement is to and from the east approach of Stringham Road and Defense Highway (Burma Road). This movement requires a turn of nearly 345 degrees and includes a grade change of approximately 10 feet.



*Stringham Road at Defense Highway (Burma Road)*

Stringham Road in the area of the intersection is approximately 22 feet wide with no pavement markings or signage. Both sides of the roadway are lined with trees and bushes, with steep slopes to the east and west. Defense Highway (Burma Road) at the intersection has one 11-foot lane and 4-foot shoulder in each direction separated by a solid double yellow line. Defense Highway (Burma Road) is stop sign controlled at the intersection.

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## DATA COLLECTION

PARE utilized existing mapping provided by the AIPC and the Navy and mapping available as part of the West Side Master Plan for the development of the base plans. The generation of the base plans at this conceptual design stage allowed for an identification of potential design issues. Mapping provided to PARE by the Navy in December 2006 included general conditions plans, electrical plans, stormwater plans, sewer plans, steam plans, and water plans as available in the areas of Simonpietri Drive and Stringham Road. Mapping provided to PARE by the AIPC included the following:

- Aerial photography
- Navy road and utility information
- Property ownership information
- RIGIS maps and data for Aquidneck Island
- USGS maps
- RIDOT plans
- Plans available from developers in the area

Navy topography obtained consisted of 5-foot contours. This was supplemented in the Melville area with 2-foot contour topographic base mapping obtained from the O'Neill Properties Group for the Hood Site.

Traffic accident data was requested and received from RIDOT in December 2006. Data was provided for the intersections of Coddington Highway with Simonpietri Drive/Sherman Lane in Middletown and West Main Road (Route 114) with Stringham Road in Portsmouth for the calendar years 2003 through 2005.

Traffic volume data was requested and received from RIDOT in November 2006. Traffic data is presented in Appendix A. Average annual daily traffic (AADT) volumes and, where available, hourly count data was provided for the following locations:

- Route 138 from the Sakonnet River Bridge to Newport
- Route 114 (West Main Road) from the Mount Hope Bridge to Coddington Highway
- Coddington Highway/J.T. Connell Highway from Route 114 to the Newport Bridge



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In addition to the data collected, the following resources were utilized in the development of this study:

- *West Side Master Plan*
- *West Side Transportation Guide Plan*
- Rhode Island Statewide Planning Program Technical Paper 155, *Highway Functional Classification 2005-2015*
- *Transportation 2025: Long Range Transportation Plan, 2004*
- Demographic and employment information for Aquidneck Island from web sites for the Rhode Island Economic Development Corporation (RIEDC) and the Rhode Island Statewide Planning Program
- Recent Rhode Island Statewide Planning Technical Paper 157, *Rhode Island Statewide Travel Demand Model Update, 2007*

## **Findings**

### ***Tank Farm 2***

The North Gateway, including the area identified as a potential alignment for the relocation of the intersection of Stringham Road and Defense Highway, is not located within known Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites. Neither the Navy's Site 02 (Melville North Landfill) nor Study Area 10 (Tank Farm 2) extend to proposed project alignments. The landfill has been remediated and is part of the O'Neill Properties Group Hood Site. The Defense Logistics Agency (DLA) ceased tank farm operations in 1998. The cleanup of oil contamination and the closure of the storage tanks is the responsibility of DLA. NSN oversees the cleanup process and the property lease agreement. The DLA contractor has completed the cleaning and closure of the tanks at all the tank farms. DLA is currently awaiting RIDEM closure certificates for the tanks.

The western end of Stringham Road is downgradient of Tank Farm 2. Although proposed alignments are not within Tank Farm 2, further site analysis is required to determine if oil-contaminated soil or groundwater is present on areas potentially disturbed for construction. This analysis should also consider the alignment of decommissioned fuel and asbestos-insulated steam lines in the vicinity.



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### ***North Gate Truck Routes***

The new North Gate has been designated as the truck inspection and security access gate for the Naval Station. Southbound trucks would be routed from West Main Road to Green Lane and then Defense Highway to North Gate. Northbound trucks from the Newport Bridge would continue to access North Gate via Coddington Highway, West Main Road, and the Fleet Access Road. By opening Simonpietri Drive to public access, the truck route to the North Gate would be shorted by nearly a mile from points to the south.

### ***Navy Roadways***

The Navy owns Stringham Road, Greene Lane, as well as Defense Highway and provides all maintenance, including plowing. According to Mr. Gerry Montani, NSN Public Works Department, if increased vehicle use is anticipated on Stringham Road, the safety of residents of the Melville and GMH military housing along this road must be considered. Design speed for the road must be examined carefully.

### ***NUWC***

Staff at NUWC campus includes 2,600 civilian employees and 3,000 contract employees, both onsite and remote. Approximately one third of contract employees are on site at any given time. Based on anecdotal information, approximately two-thirds of on-site NUWC staff enter through Gate 23, across from Chase Lane from West Main Road/Simonpietri Drive and approximately one third enter through Lower Gate and typically travel on Defense Highway. NUWC will be opening a new north gate (Gate 32) in the future. Currently a lower gate provides access to NUWC.

### ***Navy Utilities***

Naval Station Newport is responsible for all utility service to NSN (including the Melville area) and NUWC. Underground utilities at Simonpietri Drive include crossings for water, sewer, and steam lines in the vicinity of Building 10. Electrical service and leaching catch basins are additional underground utilities on Simonpietri Drive. Ornamental lighting is provided along this roadway.

Known utility lines in the vicinity of Stringham Road and Defense Highway include the following:

- Abandoned water lines are located in Tank Farms 1 & 2



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- Defense Highway and Stringham Road include a 12” water line from Greene Lane and a 10” line from Lawton Valley through Raytheon. The 10” gravity fed line has recently been removed from service.
  - Jet Fuel lines under Weaver Cove wetland / Defense Highway have been capped or removed.
  - Sewer lines extend under both Stringham Road and Defense Highway. The line from Stringham Road extends cross-country straight down hill from the upper turn to a point south of the “hairpin” intersection
  - Street lighting is provided on wooden poles with cobra head fixtures. Aerial electrical service is provided.

It is prudent to anticipate encountering undocumented utility lines, especially at the Stringham Road end of the project. Further subsurface investigation during later design stages is required to document subsurface lines associated with operation of the tank farms as part of the Defense Fuel Supply Point for all of New England.

### ***GMH Melville Housing***

GMH currently operates former Navy housing developments along Stringham Road. On the north side of the road, eleven houses have driveways onto Stringham Road and there is a pullout for the common mailbox area. GMH has plans to reduce the total number of housing units in the Melville Housing Area and may consider eliminating several with driveway access to Stringham Road. GMH has recently built a new housing development on Cimarron Drive, east of Stringham Road. None of these houses have driveways to Stringham Road. Vehicles have also been observed parking on Stringham Road near the residential properties.

### ***Economic Development***

The following information on businesses with an interest in Shoreline Drive was obtained from Keith Stokes, Executive Director of the Newport County Chamber of Commerce. Information of potential traffic generators was also discussed.

- Raytheon: This defense contractor is primarily concerned about improving access to/from Route 24 and is not specifically interested in access to Shoreline Drive/Defense Highway for other than emergency access or to access the decommissioned wastewater treatment plan. Improved signage to and from Route 24 would be of value to Raytheon.



- Melville Backyard: Portsmouth Marine Partners LLC, a consortium of marine industries, has proposed expansion of storage space and marine services on a 34-acre parcel recently transferred from the Navy to RIEDC.
- Easton Yachts: This boat brokerage anticipated further large boat storage in Melville.
- Weaver Cove (O'Neill Properties Group): Phased development anticipated. Awaiting further submissions/discussions. This development is alternatively referred to as Newport Club, the Hood Site, and Weaver Cove.
- Tank Farms 1 and 2: Potential mixed-use development could include new and expanded marine services. Weaver Cove project could drive demand for development here.
- New Jobs in Area: 300 to 500 new jobs in marine trades, Raytheon, and Navy.
  - Transfer of 300 FTU for Officer Candidate School
  - Anticipate 610 FTU increase at Newport under BRAC
  - All alternatives should incorporate multimodal options.

***O'Neill Properties Group***

O'Neill Properties Group (OPG) has proposed a to build a high-end marina village in Melville. The project is alternatively referred to as Weaver Cove, The Newport Club, and Hood Site. The project entails construction of a 44-acre condo village and a 1,495-slip marina with retail shops, restaurants, condos and townhouses. Although most development is proposed along the shore of Weaver Cove south of Melville, development is also proposed on the parcel of land immediately



east of (and up the slope from) Defense Highway. Both Defense Highway and the Newport Secondary rail line separate this upland development from the waterfront. The attached illustrative rendering was received from the O'Neill Properties Group in April 2007.



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## TRAFFIC SAFETY ANALYSIS

Crash data was provided by the RIDOT Electronic Accident Reporting System (EARS) for the intersections of Coddington Highway with Simonpietri Drive/Sherman Lane in Middletown and West Main Road (Route 114) with Stringham Road in Portsmouth for the calendar years 2003 through 2005. Crash data for Stringham Road between West Main Road (Route 114) and Defense Highway (Burma Road) for the most recent three-year period available was also requested from the Portsmouth Police Department. Tables summarizing all crash data and collision diagrams for each intersection are provided in Appendix B.

### *Stringham Road*

Between January 2003 and January 2007, a total of 63 crashes occurred at the intersection of West Main Road (Route 114) and Stringham Road. Thirty-seven crashes were rear-end crashes, 12 were angle crashes, five were sideswipes in the same direction, five were broadsides, two were sideswipes in the opposite direction, and two involved a vehicle running off the road. Twelve crashes resulted in injuries and there were no fatalities. Seven crashes occurred during wet pavement conditions, and three reports indicated snow or slush on the roadway.

There are a high number of crashes, primarily rear-end, at this intersection. Most of the crashes occur on West Main Road (Route 114). Rear end crashes are typical of a signalized intersection and could be the result of driver inattention to stopped or slowing traffic. Many of the angle crashes reported at this intersection occurred within the intersection and were the result of conflicts between opposing movements. Revising the traffic signal timing to ensure that it meets current standards for red and yellow clearance intervals could decrease the number of crashes at the intersection.

Twelve crashes were reported on Stringham Road between West Main Road (Route 114) and Defense Highway (Burma Road) between 2003 and 2006. One broadside crash was reported at the intersection of Stringham Road and Worden Street in 2005. This crash occurred in dry weather conditions and did not result in any injuries or fatalities. Two crashes were reported at the intersection of Stringham Road and Stevens Road, one in 2004 and one in 2006. One crash was a rear end, and one involved the driver losing control of the vehicle. The loss of control crash occurred in icy roadway conditions. Neither crash resulted in injuries or fatalities. Two



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crashes were reported at the intersection of Stringham Road and Sullivan Road in 2006. One crash involved a motorist collision with a deer, and one crash involved the motorist driving off the roadway. These crashes resulted in one injury and zero fatalities.

Six crashes were reported at the intersection of Stringham Road with Defense Highway (Burma Road) between 2004 and 2006. Four crashes were reported in 2004 and two were reported in 2005. Three crashes were loss of control crashes, resulting in one injury. Two of the three occurred in snow or icy roadway conditions. Two crashes reported were angle crashes, resulting in one injury. One crash reported at the intersection was a sideswipe in the same direction. This crash occurred on wet pavement. None of the crashes reported at the intersection resulted in a fatality.

***Simonpietri Drive***

Ten crashes were reported at the intersection of Coddington Highway and Simonpietri Drive/Sherman Lane between 2003 and July 2005. Four crashes were rear ends, 2 were broadsides, two were sideswipes in the same direction, and two were angle crashes. One crash resulted in an injury and there were no fatalities. Three crashes occurred during wet pavement conditions, and two reports indicated that there was snow or slush on the roadway.



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## DESIGN CONSIDERATIONS

Simonpietri Drive, Defense Highway (Burma Road), and Stringham Road are all currently owned by the Navy as part of larger U.S. Government holdings. An agreement must be reached with the Navy regarding the use of Government property, both for the public opening of Simonpietri Drive and for the relocation of the Stringham Road/Defense Highway (Burma Road) intersection. Separate agreements could be reached for roadway projects at the north and south ends of the project. If the property near the Stringham Road/Defense Highway (Burma Road) intersection were to be transferred from Federal ownership, it must be determined if the right of way would be state owned or owned by the Town of Portsmouth. Agreements must also be reached regarding which agency would be the lead in highway design activities and which design standards must be met. For this concept study, Federal, State, and local design standards were reviewed and the most stringent were used. Location-specific concerns are discussed below. It is understood that the US Navy will not be participating in the funding for roadway improvements and therefore military construction (MILCON) standards will not be met.

### **South Gateway: Middletown**

The opening of Simonpietri Drive north to the Fleet Pier Access Road to the public has several design considerations that must be accounted for in the selection of the potential and preferred design alternative(s). Perhaps the most important factor in the opening of Simonpietri Drive to the general public is the maintenance of the secure perimeter for NSN. The current secure perimeter is generally located east of Simonpietri Drive. Anti-Terrorism Force Protection (ATFP) regulations require a setback of 45 meters (148 feet) from any building to the secure perimeter. In addition, parked cars and dumpsters require a setback of 75 feet. This secure perimeter is marked with a seven-foot high security fence with three strands of barbed wire at the top. This secure perimeter would be required at the setback line on both sides of Simonpietri Drive. Any manholes, catch basins, etc. located within the roadway must also be secured under ATFP requirements.

The relocation of the secure perimeter to the east and west sides of Simonpietri Drive would be required to open this road to the general public. This would have several implications. Fire and police staff located at the new Building 1373 is responsible for emergency response to all of NSN and NUWC. Currently access to the Coasters Harbor Island area is via the Building 1 parking lot entrance to Simonpietri Drive and Chandler Street. To minimize response time and provide secure



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operating conditions, emergency vehicles from Building 1373 should be able to remain within the secure perimeter to respond to emergency calls throughout the base. Opening the existing Simonpietri Drive to the general public will require that the internal base roadways be constructed within the secure perimeter to assure continued timely emergency response within all areas of the



*Emergency response vehicle on Simonpietri Drive,  
Building 11 in background*

base.

NUWC's Building 11, located east of Simonpietri Drive and separate from the NUWC secure perimeter, would be separated from the NSN secure perimeter if Simonpietri Drive were to be opened to the public. A secure perimeter would be required around this facility or relocation of the building would be necessary. To maintain a secure perimeter, a new gate would be required

to provide access to both Building 11 and to two residences (NB1 and NB2).

Several Naval Station Newport facilities will require hardening or relocation to meet ATRF requirements. Building 76 will require hardening and recently constructed fuel tanks and a fueling station will require relocation if these facilities cannot be adequately hardened. Hardening of Building 11 would be required if this 45,000 square foot single story wood frame building is continued to be occupied by Navy personnel.

Access to Naval Station Newport's Building 1 (Public Works Department) would also be precluded by relocating the secure perimeter. Any internal circulation proposed to assure emergency access from Building 1373 should also provide internal access to Buildings 1 and 1A. With opening of the new North Gate in 2007, existing Simonpietri Drive Gates 10 at Coddington Highway and Gate 11 at the Fleet Pier Access Road will be closed. Entrance to the new North Gate, located west of Simonpietri Drive on the Fleet Pier Access Road, is signalized. As proposed, the Simonpietri Drive signal would be removed with the opening of the North Gate. Retaining both signals could cause queuing and delay, especially when code levels are increased. The functionality, capacity and safety of access to NUWC (including the new Gate 32) and Naval

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Station Newport North Gate will require further study and observation before Shoreline Drive / Simonpietri Drive can be promoted to the public.

### **North Gateway: Portsmouth**

Several issues must be considered at the northern gateway. A concern to be considered with the potential relocation of the Stringham Road/Defense Highway (Burma Road) intersection is the location of Navy utilities. Plans obtained from the Navy show the location of utility lines within the area of the intersection. Additional information, however, is needed to the south and along the Newport Secondary right-of-way to determine if roadway relocation will require utility relocation. In addition, the land located in the potential relocation area is currently privately owned and would need to be acquired prior to any roadway improvements. Steep grades and shale outcrops/subsurface conditions must also be considered in the development of alternatives. Former tank farms, located upgradient of the northern gateway may result in environmental site degradation that would be important for any alignment that results in extensive grading or subsurface disturbance.

The North Gateway also presents opportunities to improve access not only to the existing marine industries and marinas in Melville, but also improves development opportunities proposed in “the Backyard” by Portsmouth Marine Partners LLC and the O’Neill Properties Group at the Hood Site. Melville has been the traditional access point to Prudence Island (although ferry service docks in Bristol). Melville is important for emergency access to and from the island as the Portsmouth Fire Department’s emergency launch is docked at the marina. Any future population increase on the island would depend more heavily on Melville to dock private boats.

*Implementing the Aquidneck Island West Side Master Plan, Promoting Growth Centers*, was prepared for the Aquidneck Island Planning Commission with US Environmental Protection Agency smart growth funding. This 2006 plan presented guidance for Marina Village District: A Town Center Mixed-Use District in Melville. One of the smart growth focuses includes mixed uses, pedestrian oriented development which encourages walkable communities.

Control of access to the relocated roadways is important to assure optimal safety and capacity. Although future ownership of the roadways is undetermined, it is critical that the Town of Portsmouth, the Aquidneck Island Planning Commission, and RIDOT advocate for access



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controls that balance land use and transportation objectives. The following could be considered for access management:

- Limit distances between curb cuts to 500 feet
- Require that adjacent properties combine curb cuts
- Require that internal vehicular and pedestrian circulation be provided between adjacent properties
- Require that adjacent properties consider shared parking agreements

Development regulations along new roadways should also require that Transportation Demand Management strategies such as carpooling, vanpooling, flexible shift hours, be implemented by businesses to help reduce fuel consumption and limit vehicle volume.



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## RIGHT OF WAY REQUIREMENTS

### Shoreline Drive

The right-of way acquired for the proposed Shoreline Drive should be adequate to accommodate not only vehicular traffic, but also bicyclists and pedestrians.

A two-lane roadway with one travel lane, one bike lane, and sidewalk in each direction would require the following right-of-way:

- 2 Travel Lanes – 24 feet (2 at 12 feet each)
- 2 Shoulders – 8 feet (2 at 4 feet each). Note that a design exception would be required from RIDOT for shoulders less than 8 feet in width. Further analysis would be required to determine the adequacy of these shoulders for bicycle travel.
- 2 Sidewalks – 10 feet (2 at 5 feet each).

Based on this roadway cross section, the total ROW required is 42 feet, while the total ROW desired is 50 feet. The additional ROW would allow for wider sidewalk or bike lanes and landscaped buffers along the roadway.

A two-lane roadway with one travel lane, a shoulder, and sidewalk on one side and a shared-use path adjacent to the other would require the following right-of-way:

- 2 Travel Lanes – 24 feet (2 at 12 feet each)
- 2 Shoulders – 4 feet (2 at 2 feet each. 8 feet each recommended – Design Exception required)
- 1 Sidewalk – 5 feet (1 at 5 feet)
- Separation of Path and Road – 5 feet
- Shared Use Path – 10 feet (1 at 10 feet)

Based on this roadway cross section, the minimum ROW required is 52 feet, while the total ROW desired is 60 feet for additional landscaping or wider shoulders.

To accommodate any future roadway widening (or addition of multimodal lanes) on Shoreline Drive, a wider right-of-way would be required. By acquiring a wider right-of-way at this time,



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future costs would be avoided and the state and / or towns would have greater control over roadway access and adjacent development.

A four-lane roadway with two travel lanes, one bike lane, and sidewalk in each direction would require the following right-of-way:

- 4 Travel Lanes – 48 feet (4 at 12 feet each)
- 2 Shoulders – 8 feet (2 at 4 feet each, Design Exception required)
- 2 Sidewalks – 10 feet (2 at 5 feet each)

Based on this roadway cross section, the minimum ROW required is 66 feet, while the total ROW desired is 75 feet. The additional ROW would allow for wider sidewalk or bike lanes and landscaped buffers along the roadway.

A four-lane roadway with two travel lanes, a shoulder, and sidewalk in each direction with a shared-use path adjacent to one side of the roadway would require the following right-of-way:

- 4 Travel Lanes – 48 feet (4 at 12 feet each)
- 2 Shoulders – 4 feet (2 at 2 feet, 8 feet each recommended – Design Exception required)
- 1 Sidewalk – 5 feet (1 at 5 feet)
- Separation of Path and Road – 5 feet
- Shared Use Path – 10 feet (1 at 10 feet)

Based on this roadway cross section, the minimum ROW required is 76 feet, while the total ROW desired is 80 feet. The additional ROW would allow for a wider shoulder, sidewalk in each direction or a separation between the shared-use path and the roadway.

### **Stringham Road**

The existing width of Stringham Road appears adequate for proposed cross sections requiring a 60 right-of-way. Based on the above descriptions, Stringham Road could accommodate a two-lane roadway with one travel lane, one bike lane, and sidewalk in each direction or a two-lane roadway with one travel lane, a shoulder, and sidewalk in each direction. Including a 75 to 80 foot right-of-way in any master plans for the area would help accommodate future development. As development impacts in the Melville area increase and Navy housing needs change, abandonment of the housing along Stringham Road could be further investigated.



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### **Simonpietri Drive**

Similar to Stringham Road, the existing Simonpietri Drive alignment appears adequate to accommodate a 60-foot right-of-way. A 60-foot right-of-way is sufficient for a two-lane roadway including one 12-foot travel lane, one 4-foot shoulder (for possible bicycle use), a 10-foot separation to accommodate the existing mature street trees along the west side of the road, and an 8-foot sidewalk on the west side or one travel lane, a shoulder, and sidewalk in each direction with a shared-use path adjacent to one side of the roadway.

### **Fleet Pier Access Road**

The existing alignment of the Fleet Pier Access Road appears adequate to accommodate uses possible on a 50-foot right-of-way and potentially those available with a 75-foot right-of way, however, an 80-foot right-of-way would be constrained along the Fleet Pier Access Road between the ball fields and Building 1, west of Gate 11. a 75-foot right-of-way could accommodate a four-lane roadway with two travel lanes, one bike lane, and sidewalk in each direction.



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## CAPACITY ANALYSIS

Analysis was conducted for various roadway segments to determine the potential impacts due to the diverted traffic flows from West Main Road (Route 114) and Coddington Highway to Shoreline Drive. This analysis uses the best available data and methodologies. The methodology available for roadway capacity is more suitable to high-speed roadways with speeds in excess of 45 miles per hour. Additionally, the number of access points, including side streets and driveways, along the corridor significantly impacts capacity of a corridor.

Capacity analyses were performed based on available traffic data and the existing conditions in the study area during the p.m. peak hour. This peak hour is considered to be the hour with the highest traffic volumes. Capacity analysis assigns roadways a level of service (LOS) between A and F based on the free-flow speed of the roadway and the density of the roadway, measured in the number of vehicles per mile per lane. LOS A is characterized by stable, steady traffic flow, while LOS F is characterized by highly unstable, variable traffic flow.

During the p.m. peak hour, West Main Road (Route 114) currently operates at LOS D northbound and LOS B southbound between the North and South Gateways. In the vicinity of Coddington Highway, West Main Road (Route 114) operates at LOS B in both directions. Analysis indicates that Shoreline Drive operates at LOS C during this same period.

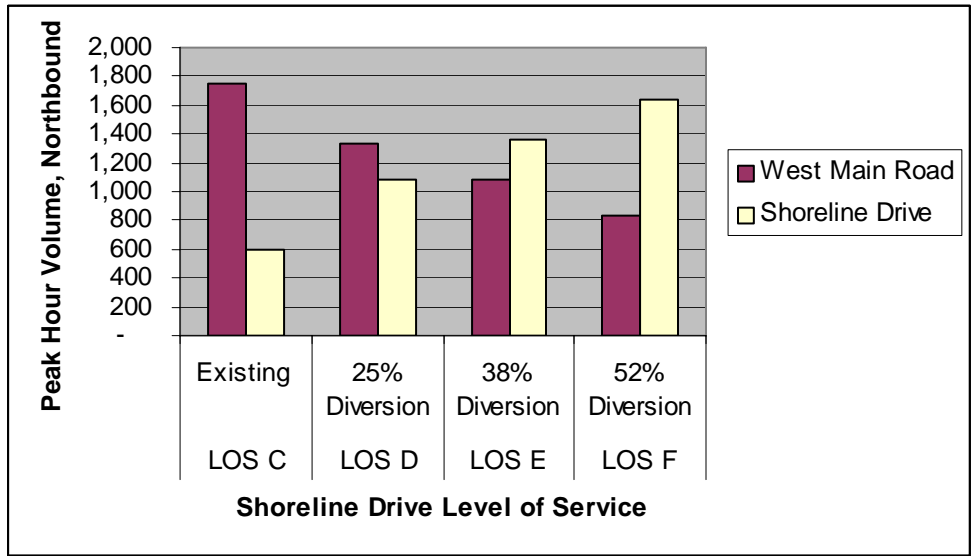
A roadway with a single lane in one direction, such as that proposed on Shoreline Drive, can carry approximately 1200 vehicles per hour at LOS C, 1550 vehicles per hour at LOS D, and 1900 vehicles per hour at LOS E. Based on the capacity analysis results, Shoreline Drive could accommodate approximately 1% of West Main Road (Route 114) traffic (40 vehicles) before it changes from LOS C to LOS D, and 22% of West Main Road (Route 114) traffic (770 vehicles) before it would reach LOS E. Almost 50% of the traffic (1670 vehicles) on West Main Road (Route 114) could divert to Shoreline Drive before it would reach LOS F. Graph 1 illustrates the effect of diversion of peak hour (northbound) traffic from West Main Road to Shoreline Drive.

Although Shoreline Drive has the potential capacity to accommodate significant percentages of existing West Main Road (Route 114) traffic, the proposed development of the Hood Property east of Stringham Road may affect the number of motorists likely to utilize this conversion. The addition of a significant traffic generator, such as a large mixed-use development, will increase the



number of vehicles on Shoreline Drive and Stringham Road, creating the potential for a bottleneck at the intersection. In addition, the number of access points to the proposed development on Shoreline Drive and potentially on Stringham Road could impact free flow speeds along the roadway, thus impacting roadway LOS.

**Graph 1: Shoreline Drive Level of Service with Peak Hour Diversion of Traffic from West Main Road**



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## ALTERNATIVES

### South Gateway: Middletown

Several concepts were considered during preliminary project phases to provide a vehicular connection between Coddington Highway and the Fleet Pier Access Road, through the Navy base. An alternative with a connection via Chase's Lane through the Navy housing facility was dropped from consideration based on residential acquisition requirements and potential traffic impacts on this residential neighborhood.

A more attractive alternative investigated extends Simonpietri Drive to the north, through the location of Building 10 (to be demolished upon completion of Building 1373 in 2007), and to the west of existing Building 11 to the intersection with the Fleet Pier Access Road, as indicated in the graphic on the following page. Proposed concept is presented at the end of this section. This alternative would require that necessary ATFP setbacks be maintained. This alignment would include the installation of a roundabout at the Coddington Highway intersection and reinstatement of a signalized intersection at the Fleet Pier Access Road.

The proposed South Gateway alignment generally utilizes the existing Simonpietri Drive roadway between Coddington Highway and the Fleet Pier Access Road. A 4,700-linear foot roadway would be reconstructed between these two points, including relocation of a 400-foot segment through the Building 10 site. Sewer, water and steam lines cross Simonpietri Drive in the vicinity of Building 10. Further information is required to determine if these lines will require relocation during construction of this 400-foot segment of roadway. Manhole covers must be secure under ATFP.

Underground utilities along the remainder of Simonpietri would be unaffected. Underground electrical service generally parallels the roadway to the south. A series of leaching catch basins currently handles stormwater flow along the majority of Simonpietri Drive. It is likely that this system will require upgrade.

Several Naval Station Newport facilities will require hardening or relocation to meet ATFP requirements. Building 76 will require hardening and recently constructed fuel tanks and a fueling station will require relocation if these facilities cannot be adequately hardened.

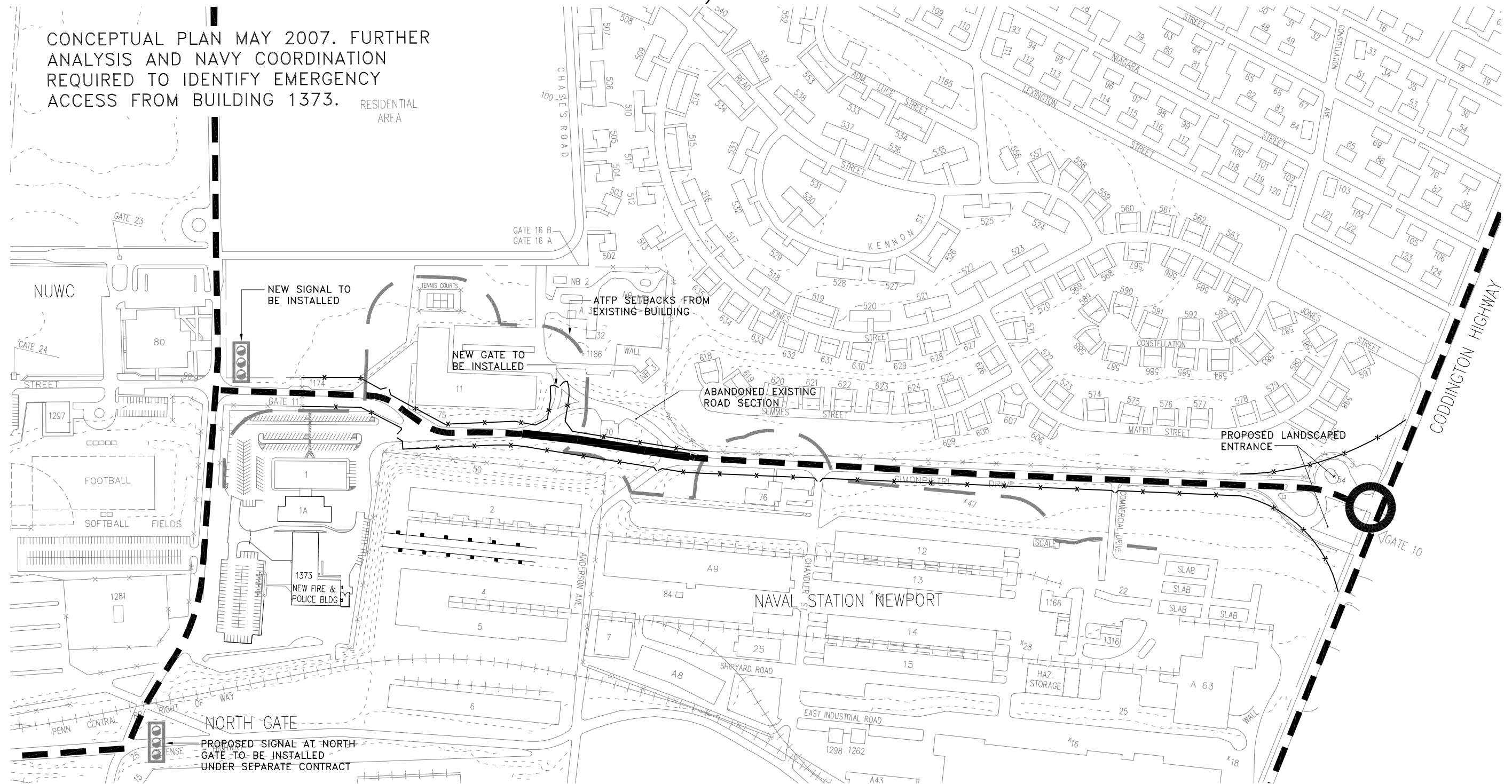


# Shoreline Drive South Gateway

## Simonpietri Drive

### Middletown, Rhode Island

CONCEPTUAL PLAN MAY 2007. FURTHER ANALYSIS AND NAVY COORDINATION REQUIRED TO IDENTIFY EMERGENCY ACCESS FROM BUILDING 1373.

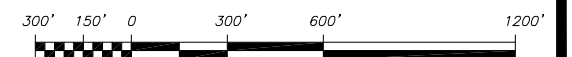


## Proposed Concept

### LEGEND

- EXISTING ROAD TO REMAIN
- NEW ROAD
- x-x- SECURITY FENCE

Graphic Scale



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Hardening of Building 11 would be required if this 45,000 square foot single story wood frame building is continued to be occupied by Navy personnel. Security fencing will be required to secure the perimeter on both sides of the roadway.

Relocating the secure perimeter will significantly impact emergency access and response time on the base. To avoid requiring that emergency vehicles exit the secure perimeter and reenter through another secure gate to access the base, an internal roadway must be constructed. Any internal circulation proposed to assure emergency access from Building 1373 would also provide internal access to Buildings 1 and 1A. Several concepts should be considered during later design stages to assure that emergency access and internal base circulation are maintained. Concepts could include construction of a frontage road along Simonpietri Drive from the entrance to the Building 1 parking lot south to a point south of Chandler Street. Another would include construction of a roadway between the rear of Building 1373 and Anderson Avenue. This would require relocation of Building 3, a NUWC warehouse, and construction of a roadway with a 5% grade. Further coordination with Naval Station Newport personnel is required to determine the most functional alignment for internal access.

It is recognized that building demolition / relocation and hardening costs could significantly increase project costs beyond costs typically associated with roadway construction. Any project to open Simonpietri Drive to the public must include all ATRP aspects to assure that no project costs are borne by the Navy.

It is proposed that the existing cross section of Simonpietri Drive be maintained with one 12-foot travel lane and 4-foot shoulder in each direction with an 8-foot bituminous sidewalk on the southbound side of the roadway. The sidewalk should be separated from the roadway to assure that the mature line of street trees be retained. In addition, it is recommended that granite curb be installed along the edges of the roadway. Although existing cobra head lighting would not be adversely affected, replacement of these fixtures with an ornamental style could be considered as part of landscape design efforts to create an attractive gateway to the Navy. Gateway landscaping could also extend to the Coddington Highway entrance.

With this alternative, roadway improvements will be required at the Coddington Highway intersection. It is recommended that a roundabout be installed at this intersection. A roundabout would aid left-turning vehicles from Simonpietri Drive in entering the traffic stream with minimal



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conflict. It would also help minimize queues on each approach, allowing northbound traffic entering Simonpietri Drive to continue moving, rather than stopping to wait for a break in traffic to turn. The maximum diameter recommended for the roundabout is 130 feet, which is the maximum recommended diameter for an urban double lane roundabout. Roundabouts also provide areas for attractive landscaping. The roundabout location should avoid impacting the mobile home park located south of Coddington Highway. A roundabout would serve to calm traffic along Coddington Highway, a four-lane roadway with a posted speed of 25 MPH.

It is premature to project South Gateway costs for an alignment through Naval Station Newport based on the level of future coordination required with the Navy. Preliminary concept costs indicate that an alignment meeting ATRP requirements may be in the range of \$20 to 25 million

### **North Gateway: Portsmouth**

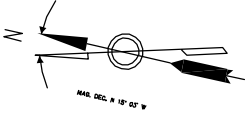
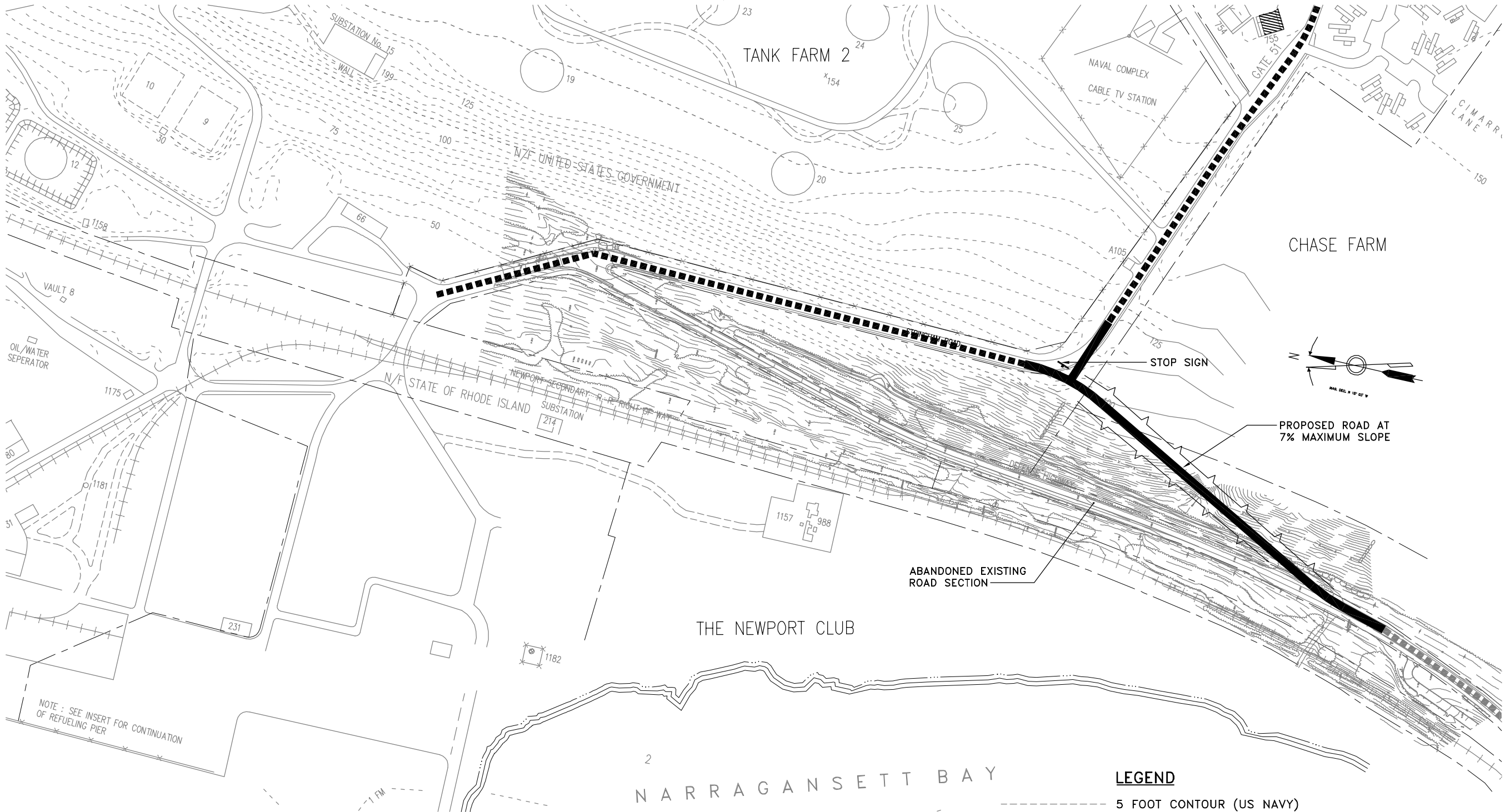
Four alternatives were investigated for the intersection of Stringham Road with Shoreline Drive. Alternatives 1 through 4 are presented at the end of this section. Alternative 1 relocates the intersection to the south at the existing upper bend in Stringham Road. This alternative would provide an improved “T” intersection while also potentially opening a portion of the existing Defense Highway (Burma Road) for private development. Alternative 2 investigated the potential for the installation of a roundabout at the intersection and improvement of the upper bend in Stringham Road. With this alternative, the reconstructed intersection would be located west of the existing intersection, and the bend in the road would be flattened and shifted slightly north. Alternative 3 examined realigning the existing intersection slightly to create a “T” intersection and an improvement of the upper bend in Stringham Road. Similar to the roundabout, this alternative requires a slight shift of the intersection and a flattening of the bend in the road. Alternative 4 analyzed the feasibility of moving the intersection to the west, creating a new intersection at a four-legged roundabout and eliminating the “hairpin” intersection. This alternative would also improve the upper bend in Stringham Road by flattening the curve and shifting it slightly north. This alternative would provide an improved Stringham Road, both at the upper bend in the road and at the intersection, while also potentially opening a portion of the existing Defense Highway (Burma Road) for private development. The feasibility of each alternative is discussed below.

### ***Alternative 1: Upper “T”***

Alternative 1: Upper “T” concept plan is presented on the following page. The realignment of the



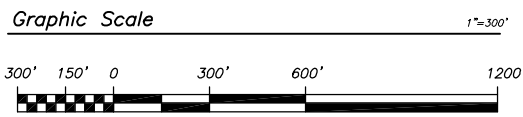
# Shoreline Drive North Gateway Stringham Road Portsmouth, Rhode Island



PROPOSED ROAD AT 7% MAXIMUM SLOPE

**LEGEND**

- 5 FOOT CONTOUR (US NAVY)
- 2 FOOT CONTOUR (O'NEILL PROPERTIES GROUP)
- EXISTING ROAD TO REMAIN
- NEW ROAD
- RETAINING WALL



## Alternative 1 Upper "T"

**NOTE:**  
GRAPHIC FOR CONCEPTUAL PURPOSES ONLY.  
PROPERTY LINES APPROXIMATE.

NOTE: SEE INSERT FOR CONTINUATION  
OF REFUELING PIER

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existing Defense Highway (Burma Road) to intersect Stringham Road at the upper bend in the roadway would allow for an improved intersection. The alignment of Stringham Road east of the bend was maintained to create the proposed intersection. The location of the proposed intersection of Stringham Road and Shoreline Drive on the outside of a horizontal curve will allow for adequate sight distance in both directions. The land surrounding the proposed alignment of Alternative 1 is currently privately owned and would need to be acquired prior to the implementation of any roadway improvements.

Based on the American Association of State Highway and Transportation Officials (AASHTO) publication *A Policy on the Guide to the Geometric Design of Highways and Streets, 2004*, the maximum roadway slope for truck traffic is 7%. A steeper slope may limit the possibility for trucks to travel on the roadway. Steep roadway slopes cause trucks to travel at slow speeds, which may affect travel time and LOS on the roadway. Although the proposed slope of Shoreline Drive meets the maximum requirement, a 7% slope may discourage truck traffic from utilizing the roadway. It should be noted that the new North Gate will be the access for all truck traffic to NSN. Although most truck traffic will utilize Greene Lane to the North Gate, some truck traffic could utilize Stringham Road to access the North Gate.

This alternative would significantly reduce the travel necessary for westbound vehicles on Stringham Road to reach Shoreline Drive, the former Defense Highway (Burma Road). The existing alignment of Stringham Road leading to Defense Highway (Burma Road) is approximately 3,900 linear feet, while the relocated intersection leading to the proposed Shoreline Drive is approximately 1,240 linear feet. The proposed alternative is approximately 2,660 linear feet shorter than the existing condition.

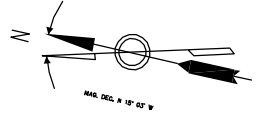
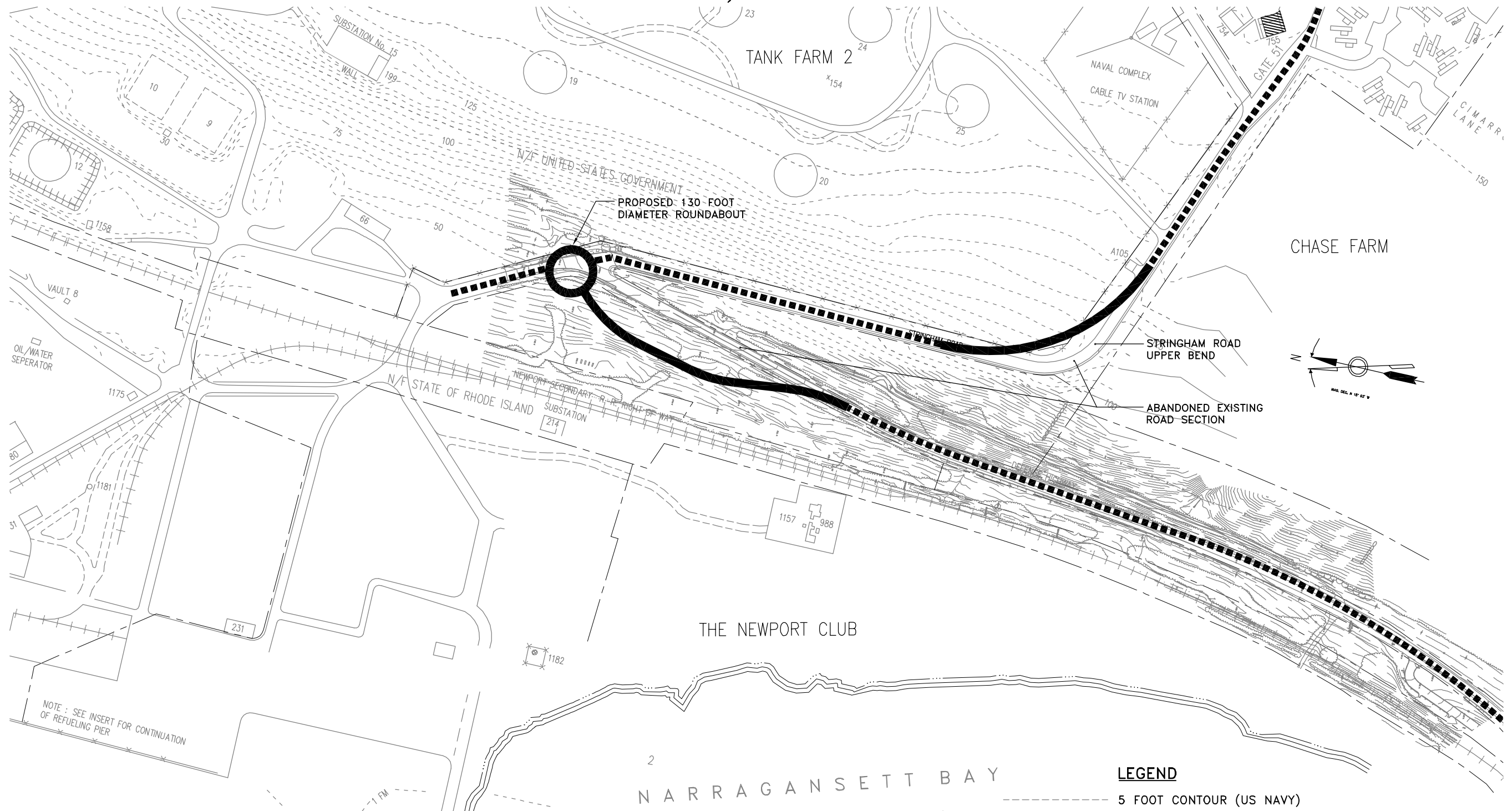
An opinion of probable construction cost for Alternative 1 ranges from \$2.0 to 2.5 million including miscellaneous costs and contingencies. Appendix C provides a more detailed cost breakdown for each alternative.

#### ***Alternative 2: Mid-Slope Roundabout***

The second alternative investigated involves the realignment of Defense Highway (Burma Road) to create a roundabout at the proposed intersection of Shoreline Drive with Stringham Road, as indicated in the graphic on the following page. The proposed intersection is located just north of the existing intersection, and provides more gradual slopes than Alternative 1. This alternative



# Shoreline Drive North Gateway Stringham Road Portsmouth, Rhode Island



## Alternative 2 Mid-slope Roundabout

**LEGEND**

- 5 FOOT CONTOUR (US NAVY)
- 2 FOOT CONTOUR (O'NEILL PROPERTIES GROUP)
- EXISTING ROAD TO REMAIN
- NEW ROAD
- RETAINING WALL

**Graphic Scale** 1"=300'

300' 150' 0 300' 600' 1200'

**NOTE:**  
GRAPHIC FOR CONCEPTUAL PURPOSES ONLY.  
PROPERTY LINES APPROXIMATE.



NOTE: SEE INSERT FOR CONTINUATION  
OF REFUELING PIER

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also involves the flattening of the upper bend in Stringham Road, which would shift the roadway slightly north. This proposed alignment would not significantly impact the length of roadway required to reach Stringham Road from Shoreline Drive.

The flattening of the upper bend in Stringham Road was investigated in an attempt to minimize the severity of the turn in the road and potentially improve safety along the roadway. The proposed alignment was investigated for a design speed of 40 miles per hour with an anticipated superelevation of 4%. Based on these criteria and AASHTO design requirements, the minimum radius curve that can be used is 533 feet. The proposed alignment is shown with a 540-foot radius curve. The existing curve radius is approximately 200 feet.

According to *Roundabouts: An Informational Guide*, published by the United States Department of Transportation and the Federal Highway Administration, installing a roundabout at an intersection that may otherwise be two-way stop controlled will lower overall intersection delays. The roundabout will ease congestion on the minor street caused by demand greater than capacity and it will ease queues on the major street caused by stopped left turning vehicles. In addition, the roundabout at this location may be beneficial for the oversized boat traffic expected in the area.

The roundabout alternative at the intersection of Stringham Road and Shoreline Drive is a single-lane roundabout, proposed to be approximately 130 feet in diameter. A 130-foot roundabout is the maximum recommended for a single lane roundabout.

The proposed connection of Shoreline Drive to Stringham Road was initially investigated utilizing zero percent superelevation with a 475-foot radius curve. However, this large radius curve utilized a significant amount of buildable land west of the existing Defense Highway (Burma Road). In an attempt to minimize this impact, the proposed Shoreline Drive was redesigned utilizing a series of two tangents and two radii. The radii of the curves proposed along the main portion of Shoreline Drive are 371 feet, the minimum radius required for a 4% superelevation at a design speed of 35 miles per hour. The connection of the proposed portion of Shoreline Drive to the existing roadway was designed utilizing a 475-foot radius to eliminate the need for superelevation.

Although this alternative would provide an improved intersection at Stringham Road and Shoreline Drive, several drawbacks were considered. With the proposed alignment of Shoreline Drive, the



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developable land west of the roadway would be split, minimizing the amount of land available for development. In addition, the construction of a roundabout on a roadway with significant approach slopes is not desirable. It is preferred to construct a roundabout where approaches are relatively flat, allowing drivers full view of the roundabout when approaching from all directions. Construction of a roundabout where driver sightlines are compromised will violate driver expectancy, and could impact the safety and operation of the roundabout.

An opinion of probable construction cost for Alternative 2 ranges from \$1.0 to 1.2 million including miscellaneous costs and contingencies. Appendix C provides a more detailed cost breakdown for each alternative.

***Alternative 3: Mid-Slope “T”***

The third alternative investigated involves the realignment of Defense Highway (Burma Road) to create a standard “T” intersection with Stringham Road, as indicated in the graphic on the following page. The proposed intersection of Stringham Road with Shoreline Drive is located just north of the existing intersection. This intersection could require a traffic signal with future development in the Melville Area. This alternative also involves the flattening of the upper bend in Stringham Road, which would shift the roadway slightly north. This proposed alignment would not significantly impact the length of roadway required to reach Stringham Road from Shoreline Drive.

The proposed connection of Defense Highway (Burma Road) to Stringham Road for Alternative 3 is the same as that proposed for Alternative 2. Additionally, the proposed flattening of the bend in Stringham Road is the same as that discussed under Alternative 2.

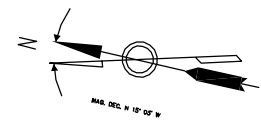
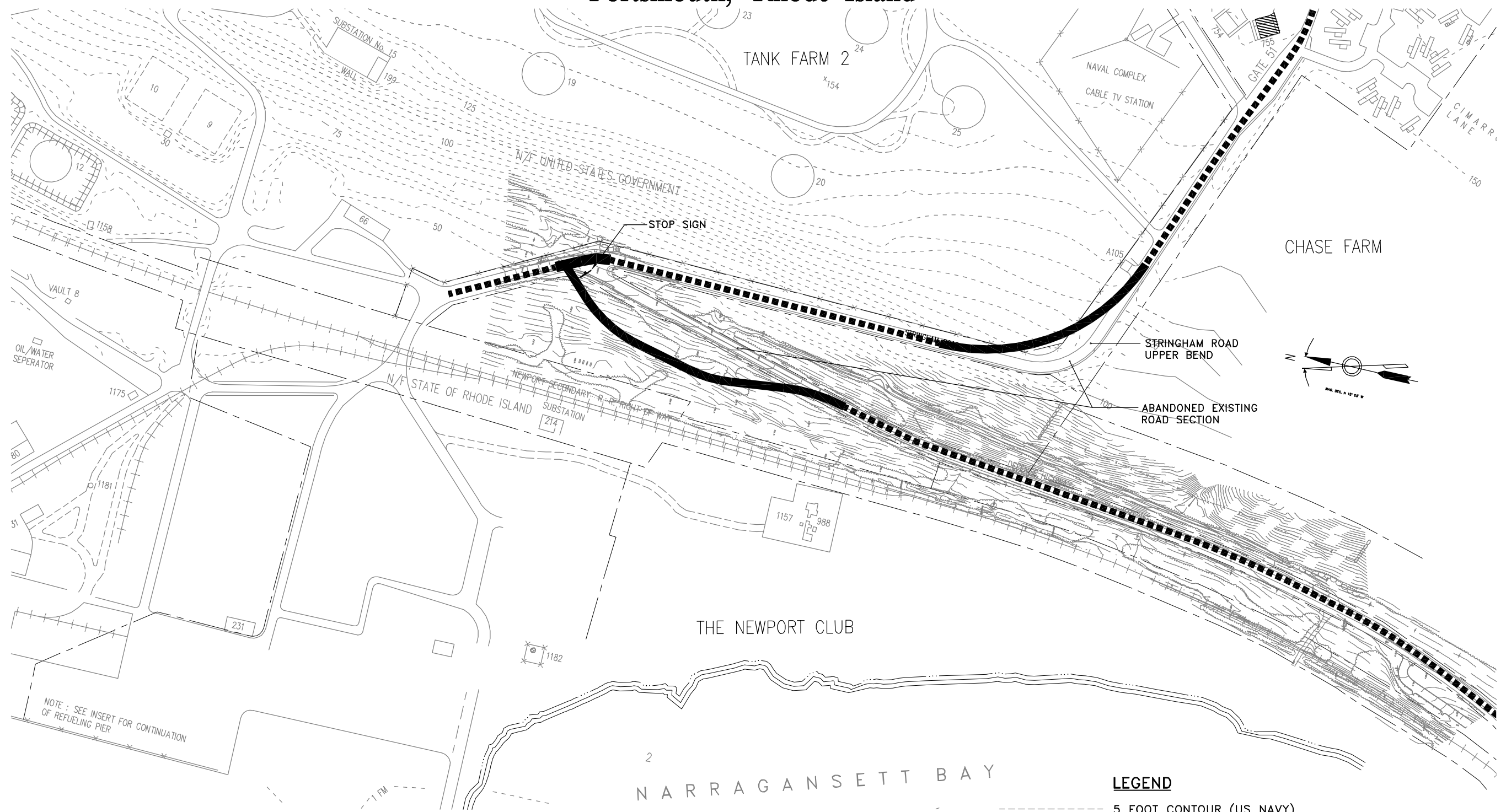
An opinion of probable construction cost for Alternative 3 ranges from \$850,000 to \$1.0 million including miscellaneous costs and contingencies. Appendix C provides a more detailed cost breakdown for each alternative.

***Alternative 4: Lower Roundabout***

The fourth alternative for the proposed connection of Shoreline Drive to Stringham Road involves realigning Defense Highway (Burma Road) to the west, along the existing railroad alignment. While this alternative impacts private property to the west of the existing Defense Highway (Burma Road), it may be possible to initiate a land swap with the property owner



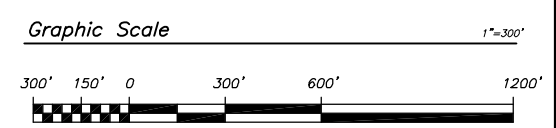
# Shoreline Drive North Gateway Stringham Road Portsmouth, Rhode Island



## Alternative 3 Mid-slope "T"

### LEGEND

- 5 FOOT CONTOUR (US NAVY)
- 2 FOOT CONTOUR (O'NEILL PROPERTIES GROUP)
- EXISTING ROAD TO REMAIN
- NEW ROAD
- RETAINING WALL



**NOTE:**  
GRAPHIC FOR CONCEPTUAL PURPOSES ONLY.  
PROPERTY LINES APPROXIMATE.

NOTE: SEE INSERT FOR CONTINUATION  
OF REFUELING PIER

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receiving the original right-of-way in return for acquisition of the new right-of-way, moving potential development in the area further from the railroad tracks. Additionally, similar to Alternatives 2 and 3, this alternative involves the flattening of the upper bend in Stringham Road, which would shift the roadway slightly north. The Alternative 4 “Lower Roundabout concept plan is presented on the following page.

This alternative involves the construction of a roundabout at the proposed intersection. This roundabout would be constructed at an existing uncontrolled three-legged intersection and would provide the opportunity for a fourth leg following development of the adjacent private property (access to future development on Tank Farm 2). In addition, the location of the roundabout at this point, as opposed to the location of Alternative 2, would allow for flatter grades leading up to and through the roundabout. Again, the recommended diameter is 130 feet, the maximum recommended for a single lane roundabout. This roundabout would provide an opportunity to create a landscaped gateway to Melville and proposed private development. This Alternative was developed utilizing large radius curves in an attempt to minimize the severity of the turns in the roadway and not require superelevation.

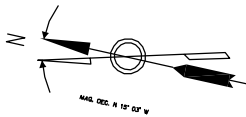
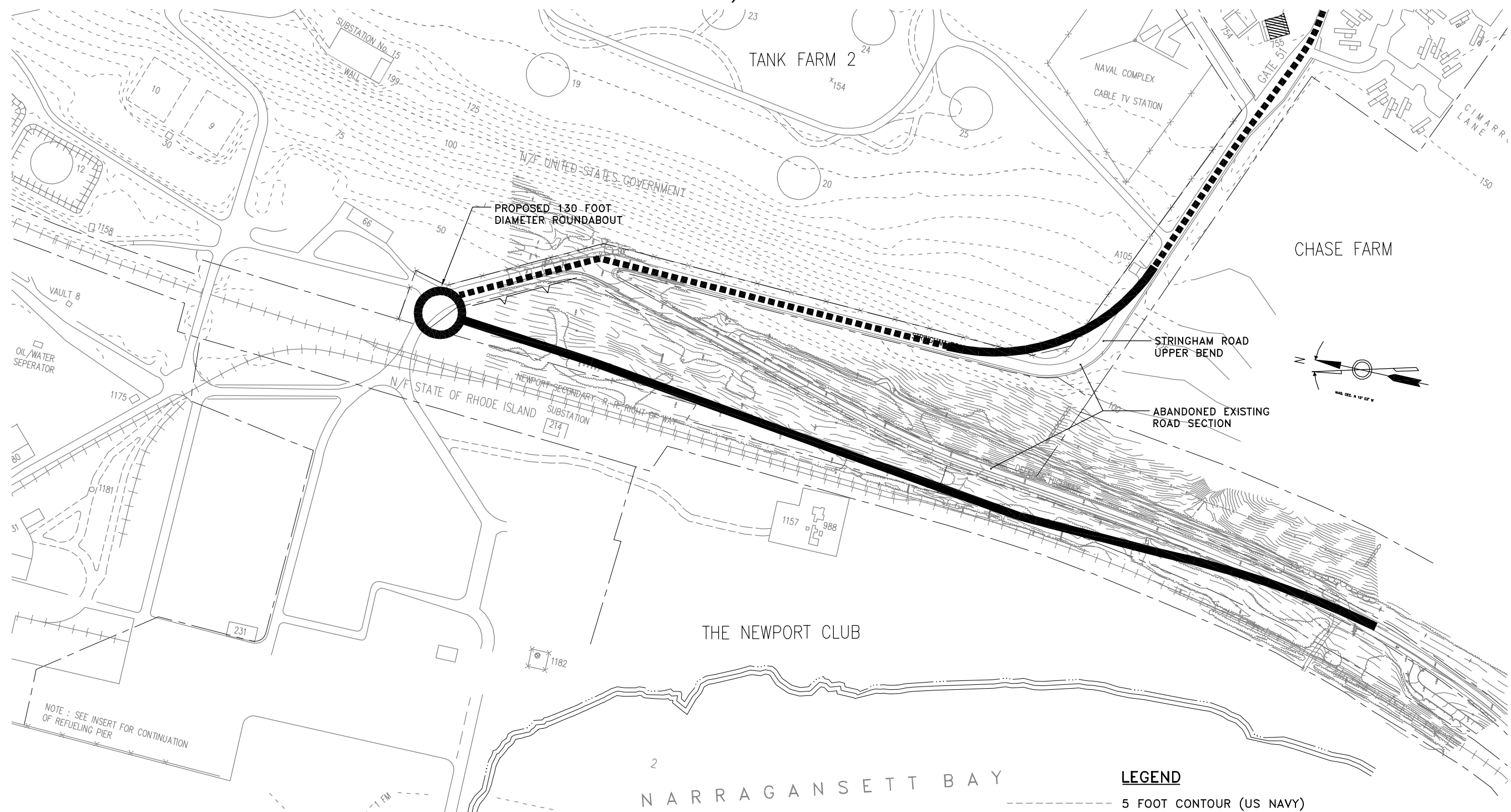
An opinion of probable construction cost for Alternative 4 ranges from \$2.7 to 3.3 million including miscellaneous costs and contingencies. Appendix C provides a more detailed cost breakdown for each alternative.

Based on preliminary conversations with representatives of O’Neill Properties Group, the lower roundabout location would work well with the hillside housing proposed at the Hood Site. Further coordination is required to address right-of-way requirements and access to this roadway.

A lower roundabout alignment, paralleling the Newport Secondary would combine rail, multiuse trail, and roadway in a single multimodal corridor. The roundabout would also provide direct access to a future Melville shuttle or transit station. This alignment would therefore support the goals of many on Aquidneck Island to support multimodal transportation.



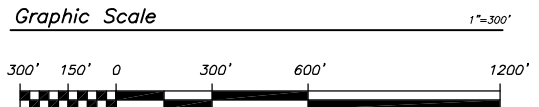
# Shoreline Drive North Gateway Stringham Road Portsmouth, Rhode Island



## Alternative 4 Lower Roundabout

### LEGEND

- 5 FOOT CONTOUR (US NAVY)
- 2 FOOT CONTOUR (O'NEILL PROPERTIES GROUP)
- EXISTING ROAD TO REMAIN
- NEW ROAD
- RETAINING WALL



**NOTE:**  
GRAPHIC FOR CONCEPTUAL PURPOSES ONLY.  
PROPERTY LINES APPROXIMATE.

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## RECOMMENDATIONS

The conceptual plans created for the potential opening of Simonpietri Drive and realignment of Stringham Road were created with the best available information. Prior to final design for the selected alternatives, the completion of a detailed survey and geotechnical investigation would be required. More importantly, an agreement must be reached with the Navy regarding use of Government property, both for the extension of Simonpietri Drive and for relocation of the Stringham Road/Defense Highway (Burma Road) intersection. Separate agreements could be reached for roadway projects at the north and south ends of the project, for phased implementation. If the property near the Stringham Road/Defense Highway (Burma Road) intersection were to be transferred from Federal ownership, it must be determined if the right of way would be state owned or owned by the Town of Portsmouth. Agreements must also be reached regarding which agency would be the lead in highway design activities and which design standards must be met. Location specific recommendations are provided below.

### **South Gateway: Middletown**

Although a conceptual alignment for Simonpietri Drive includes a roundabout at the intersection of Coddington Highway and generally follows the existing roadway alignment, further coordination is required with Naval Station Newport prior to selection of a recommended alternative. The conceptual alignment includes reconstruction of 3,880 linear feet of Simonpietri Drive, including a new 400-foot roadway through the Building 10 site (former fire station). Building 10 is scheduled to be demolished before the end of 2007.

Security mitigation costs may be significant and far exceed roadway construction costs. Buildings 11, 76, and new fuel tanks and fueling facility would require hardening as sufficient ATFP setback cannot be achieved. If ATFP requirements cannot be met, the two buildings and fuel facilities would require relocation. This alternative would also require the installation of security fence at the edges of the secure perimeter along the roadway. The additional fence and gates will significantly impact emergency access and response time on the base. The Navy has indicated that it would be unacceptable for emergency vehicles to exit the secure perimeter and reenter through another secure gate to access the northern part of the base. Emergency vehicle access must be further investigated prior to the opening of Simonpietri Drive to public use.



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Based on uncertainties for construction of an internal emergency access road and the need to relocate or harden several buildings and other facilities, an opinion of probable cost has not been generated. Based on preliminary information and discussions with the Navy, it is likely that the cost will range between \$20 and 30 million. Any costs associated with the implementation of this project for public access, including public roadway improvements, ATFP requirements, building demolition, new building construction, or emergency internal access road construction, are not expected to be funded by the Navy.

### **North Gateway: Portsmouth**

The preferred alternative for the North Gateway / Stringham Road intersection is Alternative 4, the Lower Roundabout. The other three North Gateway alternatives considered do not provide the benefits offered by the Lower Roundabout. The preferred alternative provides an opportunity for an attractive gateway located in proximity to the existing Melville marine trade district, proposed marina and condominium development by O'Neill Properties Group, and to future redevelopment of the Navy tank farms. The lower roundabout enhances the multimodal corridor formed with the Newport Secondary rail line, the proposed multipurpose trail, and Shoreline Drive. This alignment will provide convenient access to future rail shuttle service at the Melville station, thereby facilitating its use.

The Lower Roundabout alternative involves the flattening of the bend in Stringham Road, shifting the roadway slightly north, and the construction of an approximate 130' diameter roundabout at the proposed intersection of Stringham Road and Defense Highway (Burma Road). The location of the roundabout at this point would allow for flatter grades leading up to and through the roundabout in comparison with Alternative 2, the Mid-Slope Roundabout. The Lower Roundabout will eliminate the hairpin turn at the existing intersection while improving access to Stringham Road for future development in the area. The opinion of probable cost for construction of the North Gateway ranges from \$2.7 to 3.3 million to remove 3,000 linear feet of pavement, grade and construct retaining walls, construct new roadway on 650 feet of Stringham Road and 3,230 linear feet of Shoreline Drive, construct a roundabout, and provide landscaping. This opinion of cost includes a 30 percent contingency, a standard practice at the feasibility stage, to include utilities, site remediation, and other unknowns at this stage. This fee does not include right of way acquisition. Design and permitting costs generally range from 10 to 15 percent of construction.



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## **Conclusion**

Construction of the North Gateway appear feasible, based on preliminary information available. A public alignment via Simonpietri Drive at the South Gateway, requires further coordination with the Navy to resolve ATFP and emergency access issues.

Although it is not possible to specifically quantify the volume of traffic to be diverted from West Main Road (Route 114) to Stringham Road-Shoreline Drive (Defense Highway)-Fleet Pier Access Road-Simonpietri Drive, it is important to recognize that addition of an attractive, scenic north-south roadway with minimal traffic controls and few curb cuts from adjacent development, will provide an important reliever for the two Aquidneck Island arterials, East and West Main Roads.

This project will also create welcoming gateways to two important areas for both Island communities and the state as a whole. As one of the top ten employers in the State of Rhode Island, US Government operations at Naval Station Newport and NUWC are vital and important components of the state and local economy. It is important to improve traffic access to this major economic driver and to provide an important entrance or gateway to the Navy base from Coddington Highway. A northern gateway at Melville presents an opportunity to highlight multimodal transportation opportunities as well as to celebrate marine services and recreational opportunities at this important location.

Issues must be resolved regarding future ownership and/or maintenance responsibilities for these roadway segments. It may be attractive for the US Government to excess property at the North Gateway in Melville to the State of Rhode Island or the Town of Portsmouth. At the South Gateway, it may be more prudent for the Navy to retain ownership of the Simonpietri Drive alignment and develop a Memorandum of Agreement with the Rhode Island Department of Transportation or the Rhode Island Economic Development Corporation to build and maintain the public access roadway. Jurisdictional requirements for police patrols and emergency response must also be developed for these roadway segments.

At the North Gateway, it is important that the State or the Town of Portsmouth address the need for access management, both through the RIDOT Physical Alteration Permit and the Town of Portsmouth zoning code. This is important to assure that Shoreline Drive remain a scenic roadway with minimal curb cuts, and not become another commercial corridor such as West



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Main Road. It is also important that the Town of Portsmouth or RIDOT explore potential public/private partnerships with developers for North Gateway construction.

This feasibility study is one of the first steps to support implementation of the *West Side Master Plan* and to provide information needed to secure future project funding for creation of Shoreline Drive.



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## Appendix A

### *Traffic Data*



## **Traffic Data Received from Rhode Island Department of Transportation**

The following data represents vehicle count information gathered from RIDOT continuous count stations in Portsmouth and Middletown.

The data listed in the spreadsheets lists both Average Daily Traffic (ADT) and Average Annual Daily Traffic (AADT). The roadway on which the count station is positioned is listed in the first column, and the segment of roadway is listed in the second column. The date of the count and station number are provided in the third and fourth columns, respectively. The ADT is presented in the fifth column, measured in vehicles per day. This volume is a 24-hour measure of traffic on the roadway. The AADT is presented in the sixth column. This value is the total volume of vehicle traffic in both directions on the roadway for a year divided by 365 days.

The Basic Volume Reports present ADT for various roadways along particular sections of the roadway.

Roadway	Segment	Date	StationNo	Adt	AADT
STHW 24	BTW STHW 114 & TURNPIKE AV	1999	2700540241	9025	8700
STHW 24	SOUTH OF RMS TO ANTHONY RD	1999	2700450240	42483	42700
STHW 24	500' N OF ANTHONY RD	1979	2700021380	12137	12100

Roadway	Segment	Date	StationNo	Adt	AADT
STHW 114 MT HOPE BR	MT HOPE BRIDGE	2004	2700051140	28485	28500
STHW 114 BRISTOL FERRY	BTW BOYD'S LN & SPRAGUE ST	2004	2700571140	14008	12800
STHW 114 W MAIN RD	N OF CODDINGTON HW	2003	1900521140	34203	31000
STHW 114 W MAIN RD	1/4 MI S BRISTOL FERRY RD	2003	2700041140	8820	8800
STHW 114 W MAIN RD	1/4 MI S BRISTOL FERRY RD	2002	2700041140	8676	8700
STHW 114 W MAIN RD	1/4 MI S BRISTOL FERRY RD	2001	2700041140	9000	9000
STHW 114 W MAIN RD	S OF PORTSMOUTH T/L	2000	1900021140	23720	22400
STHW 114 W MAIN RD	1/4 MI S BRISTOL FERRY RD	2000	2700041140	8820	8800
STHW 114 W MAIN RD	BTW ALMEDA TE & UNION ST	2000	2700250030	23767	22500

Roadway	Segment	Date	StationNo	Adt	AADT
STHW 138 E MAIN RD	HEDLEY & FAIRVIEW LN	2004	2700410000	25935	23800
STHW 138 E MAIN RD	FREEBORN & HEDLEY ST	2004	2700400000	27976	25600
STHW 138 E MAIN RD	BTW SPRAGUE & DEXTER ST	2004	2700391380	13526	12400
STHW 138 E MAIN RD	SOUTH OF BOYD LN	2004	2700381380	8917	8200
STHW 138 E MAIN RD	.6 MI NORTH OF MCCORRIE LANE	2006	2700310090	19399	17600
STHW 138 E MAIN RD	BTW SANDY PT RD & BRAMAN LN	2004	2700300090	25114	23000
STHW 138 ADM KALBFUS	BTW CONNELL HW & 3RD ST	2000	2100330010	12664	14100
STHW 138 E MAIN RD	BTW VALLEY RD & AQUIDNECK	2000	1900411380	18628	16700
STHW 138 E MAIN RD	S OF PORTSMOUTH	2003	1900011380	23602	23600

Roadway	Segment	Date	StationNo	Adt	AADT
CONNELL HW	NORTH OF ADM KALBFUS RD	2004	2100010000	17089	17100

**.MIDDLETOWN, STHW 138 E MAIN RD BTW VALLEY & AQUIDNECK AVE**

*Average Hourly Traffic (AHT) By Hour Of Day, Day Of Week, And Month*

1900411380

*Thursday, December 07, 2006*

	<u>Sun</u>	<u>Mon</u>	<u>Tue</u>	<u>Wed</u>	<u>Thu</u>	<u>Fri</u>	<u>Sat</u>	<u>AHT</u>
12-1 AM	*	*	*	97 *	71 *	83 *	*	83
1-2	*	*	*	53 *	52 *	44 *	*	49
2-3	*	*	*	29 *	21 *	23 *	*	24
3-4	*	*	*	28 *	25 *	22 *	*	25
4-5	*	*	*	45 *	57 *	44 *	*	48
5-6	*	*	*	172 *	137 *	152 *	*	153
6-7	*	*	*	613 *	607 *	608 *	*	609
7-8	*	*	*	1,178 *	1,188 *	1,172 *	*	1,179
8-9	*	*	*	1,333 *	1,307 *	1,258 *	*	1,299
9-10	*	*	*	1,250 *	1,241 *	*	*	1,245
10-11	*	*	1,306 *	1,350 *	1,404 *	*	*	1,353
11-12	*	*	1,392 *	1,518 *	1,578 *	*	*	1,496
12-1 PM	*	*	676 *	1,526 *	1,674 *	*	*	1,292
1-2	*	*	534 *	1,403 *	1,532 *	*	*	1,156
2-3	*	*	438 *	1,380 *	1,456 *	*	*	1,091
3-4	*	*	487 *	1,560 *	1,605 *	*	*	1,217
4-5	*	*	583 *	1,723 *	1,676 *	*	*	1,327
5-6	*	*	799 *	1,670 *	1,621 *	*	*	1,363
6-7	*	*	1,104 *	1,166 *	1,177 *	*	*	1,149
7-8	*	*	1,008 *	969 *	969 *	*	*	982
8-9	*	*	781 *	509 *	778 *	*	*	689
9-10	*	*	453 *	337 *	453 *	*	*	414
10-11	*	*	271 *	265 *	179 *	*	*	238
11-12	*	*	138 *	179 *	124 *	*	*	147
ADT	*	*	9,970 *	20,353 *	20,932 *	3,406 *	*	18,628

**For 2000 - AADT 16700**

# Basic Volume Report: 1900521140

**Station ID : 1900521140**

Info Line 1 : STHW 114 W MAIN RD  
 Info Line 2 : NORTH OF CODDINGTON HWY

GPS Lat/Lon :  
 DB File : 1900521140.DB

Last Connected Device Type : Phoenix  
 Version Number : 2.39  
 Serial Number : 83812

Number of Lanes : 1  
 Posted Speed Limit :

## Lane #1 Configuration

#	Dir. Information	Volume Mode	Volume Sensors	Divide By 2	Comment
1.		Normal	Axle	Yes	

## Lane #1 Basic Volume Data From: 00:00 - 06/22/2005 To: 23:59 - 06/23/2005

Date	DW	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
062205	W	258	183	67	55	127	392	1241	1799	1937	1812	1815	1910	2094	2026	1957	2225	2280	2248	1986	1599	1318	1133	749	526	31738
062305	T	263	216	68	57	148	416	1251	1843	1937	1827	1867	2007	2102	1995	2031	2173	2308	2291	2062	1709	1503	1145	814	508	32541
Month Total :		521	399	135	113	275	808	2492	3642	3874	3639	3682	3917	4196	4021	3988	4398	4588	4539	4048	3308	2821	2278	1563	1034	64279
Percent :		1%	1%	0%	0%	0%	1%	4%	6%	6%	6%	6%	6%	7%	6%	6%	7%	7%	7%	6%	5%	4%	4%	2%	2%	
ADT :		261	200	68	57	138	404	1246	1821	1937	1820	1841	1959	2098	2011	1994	2199	2294	2270	2024	1654	1411	1139	782	517	32145

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent	
DW Totals :	0	0	0	31738	32541	0	0	Weekday (Mon-Fri) :	64279	100%
# Days :	0.0	0.0	0.0	1.0	1.0	0.0	0.0	ADT :	32140	
ADT :	0	0	0	31738	32541	0	0	Weekend (Sat-Sun)	0	0%
Percent :	0%	0%	0%	49%	51%	0%	0%	ADT :	0	

# Basic Volume Summary: 1900521140

Grand Total For Data From: 00:00 - 06/22/2005 To: 23:59 - 06/23/2005

Total Count	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
Lane #1	521	399	135	113	275	808	2492	3642	3874	3639	3682	3917	4196	4021	3988	4398	4588	4539	4048	3308	2821	2278	1563	1034	64279
TOTAL	521	399	135	113	275	808	2492	3642	3874	3639	3682	3917	4196	4021	3988	4398	4588	4539	4048	3308	2821	2278	1563	1034	64279

Percents:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Lane #1	1%	1%	0%	0%	0%	1%	4%	6%	6%	6%	6%	6%	7%	6%	6%	7%	7%	7%	6%	5%	4%	4%	2%	2%
TOTAL	1%	1%	0%	0%	0%	1%	4%	6%	6%	6%	6%	6%	7%	6%	6%	7%	7%	7%	6%	5%	4%	4%	2%	2%

ADT:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
Lane #1	261	200	68	57	138	404	1246	1821	1937	1820	1841	1959	2098	2011	1994	2199	2294	2270	2024	1654	1411	1139	782	517	32145
TOTAL	261	200	68	57	138	404	1246	1821	1937	1820	1841	1959	2098	2011	1994	2199	2294	2270	2024	1654	1411	1139	782	517	32145

### LANE #1

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent	
DW Totals :	0	0	0	31738	32541	0	0	Weekday (Mon-Fri) :	64279	100%
# Days :	0.0	0.0	0.0	1.0	1.0	0.0	0.0	ADT :	32140	
ADT :	0	0	0	31738	32541	0	0	Weekend (Sat-Sun)	0	0%
Percent :	0%	0%	0%	49%	51%	0%	0%	ADT :	0	

### ALL LANES

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent	
DW Totals :	0	0	0	31738	32541	0	0	Weekday (Mon-Fri) :	64279	100%
# Days :	0.0	0.0	0.0	1.0	1.0	0.0	0.0	ADT :	32140	
ADT :	0	0	0	31738	32541	0	0	Weekend (Sat-Sun)	0	0%
Percent :	0%	0%	0%	49%	51%	0%	0%	ADT :	0	

# Basic Volume Report: 2100010000

Station ID : 2100010000

Info Line 1 : CONNELL HIGHWAY

Info Line 2 : NORTH OF ADM KALBFUS RD

GPS Lat/Lon :

DB File : DBFILE 070805 - 52.DB

Last Connected Device Type : Phoenix

Version Number : 2.39

Serial Number : 83816

Number of Lanes : 2

Posted Speed Limit :

## Lane #1 Configuration

#	Dir.	Information	Volume Mode	Volume Sensors	Divide By 2	Comment
---	------	-------------	-------------	----------------	-------------	---------

1.			Normal	Pres	No	
----	--	--	--------	------	----	--

## Lane #1 Basic Volume Data From: 12:00 - 07/18/2006 To: 09:59 - 07/21/2006

Date	DW	0000	0100	0200	0300	0400	0500	0600	0700	0900	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
071806	T													1122	1053	1129	1366	1593	1370	1057	831	673	488	333	178	11193
071906	W	135	71	36	42	72	281	905	1370	1349	1108	985	1180	1369	1176	1154	1429	1599	1384	1065	810	766	577	404	214	19481
072006	T	120	64	44	40	97	266	832	1383	1365	1159	1015	1097	1186	1077	1183	1380	1491	1394	1104	777	686	501	344	213	18818
072106	F	113	75	53	37	98	255	821	1253	1249																3954
Month Total :		368	210	133	119	267	802	2558	4006	3963	2267	2000	2277	3677	3306	3466	4175	4683	4148	3226	2418	2125	1566	1081	605	53446
Percent :		1%	0%	0%	0%	0%	2%	5%	7%	7%	4%	4%	4%	7%	6%	6%	8%	9%	8%	6%	5%	4%	3%	2%	1%	
ADT :		123	70	44	40	89	267	853	1335	1321	1134	1000	1139	1226	1102	1155	1392	1561	1383	1075	806	708	522	360	202	18907

	Sun	Mon	Tue	Wed	Thu	Fri	Sat		Total	Percent
DW Totals :	0	0	11193	19481	18818	3954	0	Weekday (Mon-Fri) :	53446	100%
# Days :	0.0	0.0	0.5	1.0	1.0	0.4	0.0	ADT :	18590	
ADT :	0	0	22386	19481	18818	10544	0	Weekend (Sat-Sun)	0	0%
Percent :	0%	0%	21%	36%	35%	7%	0%	ADT :	0	

# Basic Volume Summary: 2100010000

Grand Total For Data From: 12:00 - 07/18/2006 To: 09:59 - 07/21/2006

Total Count	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
Lane #1	368	210	133	119	267	802	2558	4006	3963	2267	2000	2277	3677	3306	3466	4175	4683	4148	3226	2418	2125	1566	1081	605	53446
TOTAL	368	210	133	119	267	802	2558	4006	3963	2267	2000	2277	3677	3306	3466	4175	4683	4148	3226	2418	2125	1566	1081	605	53446

Percents:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Lane #1	1%	0%	0%	0%	0%	2%	5%	7%	7%	4%	4%	4%	7%	6%	6%	8%	9%	8%	6%	5%	4%	3%	2%	1%
TOTAL	1%	0%	0%	0%	0%	2%	5%	7%	7%	4%	4%	4%	7%	6%	6%	8%	9%	8%	6%	5%	4%	3%	2%	1%

ADT:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
Lane #1	123	70	44	40	89	267	853	1335	1321	1134	1000	1139	1226	1102	1155	1392	1561	1383	1075	806	708	522	360	202	18907
TOTAL	123	70	44	40	89	267	853	1335	1321	1134	1000	1139	1226	1102	1155	1392	1561	1383	1075	806	708	522	360	202	18907

### LANE #1

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent	
DW Totals :	0	0	11193	19481	18818	3954	0	Weekday (Mon-Fri) :	53446	100%
# Days :	0.0	0.0	0.5	1.0	1.0	0.4	0.0	ADT :	18590	
ADT :	0	0	22386	19481	18818	10544	0	Weekend (Sat-Sun)	0	0%
Percent :	0%	0%	21%	36%	35%	7%	0%	ADT :	0	

### ALL LANES

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent	
DW Totals :	0	0	11193	19481	18818	3954	0	Weekday (Mon-Fri) :	53446	100%
# Days :	0.0	0.0	0.5	1.0	1.0	0.4	0.0	ADT :	18590	
ADT :	0	0	22386	19481	18818	10544	0	Weekend (Sat-Sun)	0	0%
Percent :	0%	0%	21%	36%	35%	7%	0%	ADT :	0	

Year 2003

Station 2700041140

**PORTSMOUTH, STHW 114 W MAIN RD  
1/4 Mi SOUTH OF BRISTOL FERRY RD**

*Summary*

*Monthly Average Daily Traffic (MADT) By Day Of Week And*

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Madt
January								
February								
March								
April	6,375	9,450	9,715	9,520	9,666	9,702	6,506	8,792
May	6,875	8,295	9,643	9,824	9,812	10,325	8,500	9,084
June	6,575	9,713	10,309	9,844	9,983	10,363	8,452	9,242
July	7,499	9,551	9,878	9,749	9,935	9,371	8,607	9,285
August	7,131	9,227	9,957	10,041	10,240	9,965	7,983	9,134
September	6,925	8,883	9,694	10,104	9,944	10,357	8,735	9,236
October	5,945	8,651	9,457	9,563	9,582	10,253	8,244	8,907
November	5,853	8,814	8,749	9,131	9,142	9,586	7,710	8,316
December	4,699	8,188	8,524	8,192	7,821	8,479	5,925	7,488

**PORTSMOUTH, STHW 114 W MAIN RD 1/4 Mi SOUTH OF BRISTOL FERRY RD**

*Average Hourly Traffic (AHT) By Hour Of Day, Day Of Week, And Month*

	<u>Sun</u>	<u>Mon</u>	<u>Tue</u>	<u>Wed</u>	<u>Thu</u>	<u>Fri</u>	<u>Sat</u>	<u>AHT</u>	<u>Thursday, December 07, 2006</u>
12-1 AM	125 *	52 *	66 *	58 *	61 *	68 *	116 *	78	<u>For 2003 - AADT 8,800</u> 2700041140
1-2	95 *	37 *	46 *	39 *	40 *	51 *	86 *	56	
2-3	46 *	21 *	34 *	23 *	25 *	28 *	43 *	31	
3-4	33 *	25 *	39 *	27 *	29 *	30 *	34 *	31	
4-5	31 *	50 *	62 *	50 *	54 *	51 *	44 *	49	
5-6	49 *	133 *	153 *	139 *	141 *	141 *	74 *	119	
6-7	101 *	483 *	522 *	515 *	514 *	479 *	156 *	397	
7-8	178 *	784 *	853 *	852 *	847 *	804 *	299 *	661	
8-9	230 *	661 *	722 *	731 *	720 *	685 *	390 *	593	
9-10	306 *	472 *	498 *	492 *	482 *	496 *	430 *	454	
10-11	368 *	445 *	466 *	461 *	457 *	497 *	498 *	456	
11-12	449 *	469 *	493 *	493 *	490 *	527 *	565 *	498	
12-1 PM	515 *	518 *	521 *	523 *	529 *	548 *	576 *	533	
1-2	521 *	499 *	509 *	510 *	513 *	549 *	568 *	524	
2-3	523 *	560 *	575 *	585 *	596 *	643 *	563 *	578	
3-4	522 *	712 *	745 *	748 *	738 *	765 *	582 *	688	
4-5	497 *	761 *	805 *	796 *	814 *	778 *	537 *	714	
5-6	457 *	713 *	750 *	751 *	763 *	714 *	500 *	665	
6-7	387 *	493 *	529 *	533 *	531 *	553 *	438 *	495	
7-8	315 *	335 *	359 *	364 *	371 *	397 *	350 *	356	
8-9	247 *	265 *	290 *	299 *	307 *	316 *	297 *	288	
9-10	193 *	212 *	227 *	245 *	254 *	286 *	271 *	241	
10-11	140 *	149 *	153 *	163 *	180 *	250 *	246 *	182	
11-12	100 *	109 *	110 *	113 *	118 *	184 *	196 *	133	
ADT	6,428 *	8,958 *	9,527 *	9,510 *	9,574 *	9,840 *	7,859 *	8,820	

# Basic Volume Report: 2700051140

**Station ID : 2700051140**

Info Line 1 : STHW 114 MT HOPE BRIDGE

Last Connected Device Type : Phoenix

Version Number : 2.39

Serial Number : 83802

DB File : 2700051140.DB

Number of Lanes : 2

Posted Speed Limit :

## Lane #1 Configuration

#	Dir.	Information	Volume Mode	Volume Sensors	Divide By 2	Comment
1.	N	NB			No	

## Lane #1 Basic Volume Data From: 00:00 - 07/18/2006 To: 23:59 - 07/20/2006

Date	DW	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
071806	T	70	43	19	21	46	112	356	494	599	429	434	387	498	490	621	842	1008	924	703	475	438	317	244	111	9681
071906	W	11	5	0	3	9	9	7	2	3	3	52	490	482	424	583	828	962	936	690	520	402	335	234	146	7136
072006	T	75	55	26	16	49	110	366	499	534	454	445	413	448	515	609	800	935	1016	666	445	375	327	230	147	9555
Month Total :		156	103	45	40	104	231	729	995	1136	886	931	1290	1428	1429	1813	2470	2905	2876	2059	1440	1215	979	708	404	26372
Percent :		1%	0%	0%	0%	0%	1%	3%	4%	4%	3%	4%	5%	5%	5%	7%	9%	11%	11%	8%	5%	5%	4%	3%	2%	
ADT :		52	34	15	13	35	77	243	332	379	285	310	430	476	476	604	823	968	959	686	480	405	326	236	135	8789

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent	
DW Totals :	0	0	9681	7136	9555	0	0	Weekday (Mon-Fri) :	26372	100%
# Days :	0.0	0.0	1.0	1.0	1.0	0.0	0.0	ADT :	8791	
ADT :	0	0	9681	7136	9555	0	0	Weekend (Sat-Sun)	0	0%
Percent :	0%	0%	37%	27%	36%	0%	0%	ADT :	0	

## Lane #2 Configuration

#	Dir.	Information	Volume Mode	Volume Sensors	Divide By 2	Comment
2.	S	SB			No	

### Lane #2 Basic Volume Data From: 00:00 - 07/18/2006 To: 23:59 - 07/20/2006

Date	DW	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
071806	T	44	25	18	30	67	183	624	930	753	514	493	461	463	445	494	659	670	611	448	332	369	292	184	87	9196
071906	W	49	26	11	30	59	174	519	776	622	403	422	442	421	434	504	721	719	603	458	348	368	290	197	100	8696
072006	T	56	31	11	26	66	198	610	864	717	478	491	435	431	412	461	707	704	599	468	298	341	273	207	103	8987
Month Total :		149	82	40	86	192	555	1753	2570	2092	1395	1406	1338	1315	1291	1459	2087	2093	1813	1374	978	1078	855	588	290	26879
Percent :		1%	0%	0%	0%	1%	2%	7%	10%	8%	5%	5%	5%	5%	5%	5%	8%	8%	7%	5%	4%	4%	3%	2%	1%	
ADT :		50	27	13	29	64	185	584	857	697	465	469	446	438	430	486	696	698	604	458	326	359	285	196	97	8959

	Sun	Mon	Tue	Wed	Thu	Fri	Sat		Total	Percent
DW Totals :	0	0	9196	8696	8987	0	0	Weekday (Mon-Fri) :	26879	100%
# Days :	0.0	0.0	1.0	1.0	1.0	0.0	0.0	ADT :	8960	
ADT :	0	0	9196	8696	8987	0	0	Weekend (Sat-Sun)	0	0%
Percent :	0%	0%	34%	32%	33%	0%	0%	ADT :	0	

# Basic Volume Summary: 2700051140

Grand Total For Data From: 00:00 - 07/18/2006 To: 23:59 - 07/20/2006

Total Count	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
Lane #1	156	103	45	40	104	231	729	995	1136	886	931	1290	1428	1429	1813	2470	2905	2876	2059	1440	1215	979	708	404	26372
Lane #2	149	82	40	86	192	555	1753	2570	2092	1395	1406	1338	1315	1291	1459	2087	2093	1813	1374	978	1078	855	588	290	26879
<b>TOTAL</b>	<b>305</b>	<b>185</b>	<b>85</b>	<b>126</b>	<b>296</b>	<b>786</b>	<b>2482</b>	<b>3565</b>	<b>3228</b>	<b>2281</b>	<b>2337</b>	<b>2628</b>	<b>2743</b>	<b>2720</b>	<b>3272</b>	<b>4557</b>	<b>4998</b>	<b>4689</b>	<b>3433</b>	<b>2418</b>	<b>2293</b>	<b>1834</b>	<b>1296</b>	<b>694</b>	<b>53251</b>

Percents:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Lane #1	1%	0%	0%	0%	0%	1%	3%	4%	4%	3%	4%	5%	5%	5%	7%	9%	11%	11%	8%	5%	5%	4%	3%	2%
Lane #2	1%	0%	0%	0%	1%	2%	7%	10%	8%	5%	5%	5%	5%	5%	8%	8%	7%	5%	4%	4%	3%	2%	1%	
<b>TOTAL</b>	<b>1%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>1%</b>	<b>1%</b>	<b>5%</b>	<b>7%</b>	<b>6%</b>	<b>4%</b>	<b>4%</b>	<b>5%</b>	<b>5%</b>	<b>5%</b>	<b>6%</b>	<b>9%</b>	<b>9%</b>	<b>9%</b>	<b>6%</b>	<b>5%</b>	<b>4%</b>	<b>3%</b>	<b>2%</b>	<b>1%</b>

ADT:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
Lane #1	52	34	15	13	35	77	243	332	379	295	310	430	476	476	604	823	968	959	686	480	405	326	236	135	8789
Lane #2	50	27	13	29	64	185	584	857	697	465	469	446	438	430	486	696	698	604	458	326	359	285	196	97	8959
<b>TOTAL</b>	<b>102</b>	<b>61</b>	<b>28</b>	<b>42</b>	<b>99</b>	<b>262</b>	<b>827</b>	<b>1189</b>	<b>1076</b>	<b>760</b>	<b>779</b>	<b>876</b>	<b>914</b>	<b>906</b>	<b>1090</b>	<b>1519</b>	<b>1666</b>	<b>1563</b>	<b>1144</b>	<b>806</b>	<b>764</b>	<b>611</b>	<b>432</b>	<b>232</b>	<b>17748</b>

### LANE #1

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent	
DW Totals :	0	0	9681	7136	9555	0	0	Weekday (Mon-Fri) :	26372	100%
# Days :	0.0	0.0	1.0	1.0	1.0	0.0	0.0	ADT :	8791	
ADT :	0	0	9681	7136	9555	0	0	Weekend (Sat-Sun) :	0	0%
Percent :	0%	0%	37%	27%	36%	0%	0%	ADT :	0	

### LANE #2

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent	
DW Totals :	0	0	9196	8696	8987	0	0	Weekday (Mon-Fri) :	26879	100%
# Days :	0.0	0.0	1.0	1.0	1.0	0.0	0.0	ADT :	8960	
ADT :	0	0	9196	8696	8987	0	0	Weekend (Sat-Sun) :	0	0%
Percent :	0%	0%	34%	32%	33%	0%	0%	ADT :	0	

### ALL LANES

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent	
DW Totals :	0	0	18877	15832	18542	0	0	Weekday (Mon-Fri) :	53251	100%
# Days :	0.0	0.0	1.0	1.0	1.0	0.0	0.0	ADT :	17750	
ADT :	0	0	18877	15832	18542	0	0	Weekend (Sat-Sun) :	0	0%
Percent :	0%	0%	35%	30%	35%	0%	0%	ADT :	0	

# Basic Volume Report: 2700400000

**Station ID : 2700400000**

Info Line 1 : EAST MAIN RD

Info Line 2 : BTW FREEBORN & HEDLEY

AADT : 25600

DB File : 2700400000.DB

Last Connected Device Type : Phoenix

Version Number : 2.39

Serial Number : 83738

Number of Lanes : 1

Posted Speed Limit :

## Lane #1 Configuration

#	Dir. Information	Volume Mode	Volume Sensors	Divide By 2	Comment
1.		Normal	Axle	Yes	

## Lane #1 Basic Volume Data From: 00:00 - 10/10/2006 To: 23:59 - 10/11/2006

Date	DW	0000	0100	0200	0300	0400	0500	0500	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
101006	T	66	44	22	28	47	232	1041	2051	1845	1504	1458	1419	1515	1577	1728	1966	2267	2128	1637	917	608	424	267	140	24931
101106	W	55	34	15	25	45	233	1053	2047	1820	1360	1379	1367	1483	1527	1699	2019	2331	2100	1532	1030	700	448	274	117	24693
Month Total :		121	78	37	53	92	465	2094	4098	3665	2864	2837	2786	2998	3104	3427	3985	4598	4228	3169	1947	1308	872	541	257	49624
Percent :		0%	0%	0%	0%	0%	1%	4%	8%	7%	6%	6%	6%	6%	6%	7%	8%	9%	9%	6%	4%	3%	2%	1%	1%	
ADT :		61	39	19	27	46	233	1047	2049	1833	1432	1419	1393	1499	1552	1714	1993	2299	2114	1585	974	654	436	271	129	24818

	Sun	Mon	Tue	Wea	Thu	Fri	Sat	Total	Percent
DW Totals :	0	0	24931	24693	0	0	0	49624	100%
# Days :	0.0	0.0	1.0	1.0	0.0	0.0	0.0	ADT :	24812
ADT :	0	0	24931	24693	0	0	0	Weekend (Sat-Sun)	0 0%
Percent :	0%	0%	50%	50%	0%	0%	0%	ADT :	0

## Lane #2 Configuration

#	Dir. Information	Volume Mode	Volume Sensors	Divide By 2	Comment
1.		Normal	Axle	Yes	

## Lane #2 Basic Volume Data From: 00:00 - 10/10/2006 To: 23:59 - 10/11/2006

Date	DW	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	
101006	T																									0	
101106	W																										0
Month Total :																											
Percent :																											
ADT :																											

	Sun	Mon	Tue	Wea	Thu	Fri	Sat		Total	Percent
DW Totals :	0	0	0	0	0	0	0	Weekday (Mon-Fri) :	0	0%
# Days :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ADT :	0	
ADT :	0	0	0	0	0	0	0	Weekend (Sat-Sun)	0	0%
Percent :	0%	0%	0%	0%	0%	0%	0%	ADT :	0	

# Basic Volume Summary: 2700400000

Grand Total For Data From: 00:00 - 10/10/2006 To: 23:59 - 10/11/2006

Total Count	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	
Lane #1	121	78	37	53	92	465	2094	4098	3655	2864	2837	2786	2998	3104	3427	3985	4598	4228	3169	1947	1308	872	541	257	49624	
Lane #2																										
TOTAL	121	78	37	53	92	465	2094	4098	3655	2864	2837	2786	2998	3104	3427	3985	4598	4228	3169	1947	1308	872	541	257	49624	
Percents:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300		
Lane #1	0%	0%	0%	0%	0%	1%	4%	8%	7%	6%	6%	6%	6%	6%	7%	8%	9%	9%	6%	4%	3%	2%	1%	1%		
Lane #2																										
TOTAL	0%	0%	0%	0%	0%	1%	4%	8%	7%	6%	6%	6%	6%	6%	7%	8%	9%	9%	6%	4%	3%	2%	1%	1%		
ADT:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	
Lane #1	61	39	19	27	46	233	1047	2049	1833	1432	1419	1393	1499	1552	1714	1993	2299	2114	1585	974	654	436	271	129	24818	
Lane #2																										0
TOTAL	61	39	19	27	46	233	1047	2049	1833	1432	1419	1393	1499	1552	1714	1993	2299	2114	1585	974	654	436	271	129	24818	

## LANE #1

	Sun	Mon	Tue	Wea	Thu	Fri	Sat	Total	Percent	
DW Totals :	0	0	24931	24693	0	0	0	Weekday (Mon-Fri) :	49624	100%
# Days :	0.0	0.0	1.0	1.0	0.0	0.0	0.0	ADT :	24812	
ADT :	0	0	24931	24693	0	0	0	Weekend (Sat-Sun)	0	0%
Percent :	0%	0%	50%	50%	0%	0%	0%	ADT :	0	

## LANE #2

	Sun	Mon	Tue	Wea	Thu	Fri	Sat	Total	Percent	
DW Totals :	0	0	0	0	0	0	0	Weekday (Mon-Fri) :	0	0%
# Days :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ADT :	0	
ADT :	0	0	0	0	0	0	0	Weekend (Sat-Sun)	0	0%
Percent :	0%	0%	0%	0%	0%	0%	0%	ADT :	0	

## ALL LANES

	Sun	Mon	Tue	Wea	Thu	Fri	Sat	Total	Percent	
DW Totals :	0	0	24931	24693	0	0	0	Weekday (Mon-Fri) :	49624	100%
# Days :	0.0	0.0	1.0	1.0	0.0	0.0	0.0	ADT :	24812	
ADT :	0	0	24931	24693	0	0	0	Weekend (Sat-Sun)	0	0%
Percent :	0%	0%	50%	50%	0%	0%	0%	ADT :	0	

# Basic Volume Report: 2700571140

Station ID : 2700571140

Info Line 1 : BRISTOL FERRY RD

Info Line 2 : BTW BOYD'S LN & SPRAGUE ST

AADT : 12800

DB File : 2700571140.DB

Last Connected Device Type : Phoenix

Version Number : 2.39

Serial Number : 83768

Number of Lanes : 1

Posted Speed Limit :

## Lane #1 Configuration

#	Dir.	Information	Volume Mode	Volume Sensors	Divide By 2	Comment
1.	0		Normal	Axle	Yes	

## Lane #1 Basic Volume Data From: 00:00 - 10/11/2006 To: 23:59 - 10/12/2006

Date	DW	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
101106	W	52	25	16	27	67	197	719	1172	1020	680	592	613	626	667	749	1013	1132	1062	746	458	406	280	169	88	12576
101206	T	58	32	14	24	69	170	694	1105	973	617	618	617	635	696	716	1067	1036	1060	705	466	411	271	168	102	12324
Month Total :		110	57	30	51	136	367	1413	2277	1993	1297	1210	1230	1261	1363	1465	2080	2168	2122	1451	924	817	551	337	190	24900
Percent :		0%	0%	0%	0%	1%	1%	6%	9%	8%	5%	5%	5%	5%	5%	6%	8%	9%	9%	6%	4%	3%	2%	1%	1%	
ADT :		55	29	15	26	68	184	707	1139	997	649	605	615	631	682	733	1040	1084	1061	726	462	409	276	169	95	12457

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent	
DW Totals :	0	0	0	12576	12324	0	0	Weekday (Mon-Fri) :	24900	100%
# Days :	0.0	0.0	0.0	1.0	1.0	0.0	0.0	ADT :	12450	
ADT :	0	0	0	12576	12324	0	0	Weekend (Sat-Sun)	0	0%
Percent :	0%	0%	0%	51%	49%	0%	0%	ADT :	0	

### Lane #2 Configuration

#	Dir.	Information	Volume Mode	Volume Sensors	Divide By 2	Comment
1.	0		Normal	Axle	Yes	

### Lane #2 Basic Volume Data From: 00:00 - 10/11/2006 To: 23:59 - 10/12/2006

Date	DW	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
101106	W																									0
101206	T																									0
Month Total :																									0	
Percent :																									0	
ADT :																									0	

	Sun	Mon	Tue	Wed	Thu	Fri	Sat		Total	Percent
DW Totals :	0	0	0	0	0	0	0	Weekday (Mon-Fri) :	0	0%
# Days :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ADT :	0	
ADT :	0	0	0	0	0	0	0	Weekend (Sat-Sun) :	0	0%
Percent :	0%	0%	0%	0%	0%	0%	0%	ADT :	0	

# Basic Volume Summary: 2700571140

Grand Total For Data From: 00:00 - 10/11/2006 To: 23:59 - 10/12/2006

Total Count	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	
Lane #1	110	57	30	51	135	367	1413	2277	1993	1297	1210	1230	1261	1363	1465	2080	2168	2122	1451	924	817	551	337	190	24900	
Lane #2																										
<b>TOTAL</b>	110	57	30	51	135	367	1413	2277	1993	1297	1210	1230	1261	1363	1465	2080	2168	2122	1451	924	817	551	337	190	24900	
<b>Percents:</b>	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300		
Lane #1	0%	0%	0%	0%	1%	1%	6%	9%	8%	5%	5%	5%	5%	5%	6%	8%	9%	9%	6%	4%	3%	2%	1%	1%		
Lane #2																										
<b>TOTAL</b>	0%	0%	0%	0%	1%	1%	6%	9%	8%	5%	5%	5%	5%	5%	6%	8%	9%	9%	6%	4%	3%	2%	1%	1%		
<b>ADT:</b>	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	
Lane #1	55	29	15	26	68	184	707	1139	997	649	605	615	631	682	733	1040	1084	1061	726	462	409	276	169	95	12457	
Lane #2																									0	
<b>TOTAL</b>	55	29	15	26	68	184	707	1139	997	649	605	615	631	682	733	1040	1084	1061	726	462	409	276	169	95	12457	

### LANE #1

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent	
DW Totals :	0	0	0	12576	12324	0	0	Weekday (Mon-Fri) :	24900	100%
# Days :	0.0	0.0	0.0	1.0	1.0	0.0	0.0	ADT :	12450	
ADT :	0	0	0	12576	12324	0	0	Weekend (Sat-Sun)	0	0%
Percent :	0%	0%	0%	51%	49%	0%	0%	ADT :	0	

### LANE #2

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent	
DW Totals :	0	0	0	0	0	0	0	Weekday (Mon-Fri) :	0	0%
# Days :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ADT :	0	
ADT :	0	0	0	0	0	0	0	Weekend (Sat-Sun)	0	0%
Percent :	0%	0%	0%	0%	0%	0%	0%	ADT :	0	

### ALL LANES

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent	
DW Totals :	0	0	0	12576	12324	0	0	Weekday (Mon-Fri) :	24900	100%
# Days :	0.0	0.0	0.0	1.0	1.0	0.0	0.0	ADT :	12450	
ADT :	0	0	0	12576	12324	0	0	Weekend (Sat-Sun)	0	0%
Percent :	0%	0%	0%	51%	49%	0%	0%	ADT :	0	

**Traffic Data Received from Naval Station Newport  
Department of Public Works**

**MEMORANDUM**

---

**TO:** Mr. Van Pavao  
Patel Construction

**DATE:** December 20, 2006

**PROJECT:** North Gate Signal and  
Intersection Improvements

**FROM:** Paul J. Bannon

**SUBJECT:** Signal Design Status/Considerations

---

**Introduction**

RAB Professional Engineers, Inc. has completed a traffic data collection program, field review and conceptual signal design as part of our efforts on the above referenced project. This memorandum is the initial documentation of traffic volume conditions and design considerations of the proposed signalization at the new North Gate intersection on Defense Highway.

The scope of the project based upon the RFP is to provide the appropriate roadway improvements along Defense Highway at its intersection with the new North Gate, to permit installation of a traffic signal that would control access to the North Gate and NUWC fleet parking area (Gate 25). The current design concept includes widening Defense Highway to provide a left turn lane on the westbound approach, and a right turn lane on the southbound/eastbound approach into the North Gate. The offset nature of the minor approaches along with the railroad track in the center, complicate the phasing scheme required at this location. Issues relating to truck access, cut-thru traffic, no right turns on red, and pre-emption requirements have been identified as key elements in the safety and operations of the proposed junction.

**Findings**

The first phase of the project, which established the basis of the intersection improvement design, included traffic data collection. This effort, completed in October, 2006, included automatic traffic recorder (ATR) and turning movement counts on Defense Highway in the project area. The ATR was placed approximately 300 feet north of the North Gate from October 26, 2006 through November 10, 2006. Turning movement counts were completed at the intersection of Defense Highway with Gate 11, whose traffic will be relocated to the new North Gate access. The NUWC fleet parking access driveway was also counted as this will be the easterly minor approach of the signalized offset intersection. Complete count information is attached for review.

The ATR data determined that this section of Defense Highway services approximately 6,700 vehicles per day. This daily volume translates into an AM Peak Hour volume of approximately 850 vehicles (150 NB/700 SB), occurring between 7:00 and 8:00 AM and 820 vehicles (670

would be more desirable as a large percentage of traffic entering NUWC would enter further to the north, and not have travel through the new intersection at all. These measures must be decided as we move forward with the design of the intersection improvements.

Recent discussions were also held with the Department of Transportation relative to the railroad line across Defense Highway at the intersection. The rail line (Newport Secondary) presently services the Newport Dinner Train, Old Colony and Newport Railway and Islander Shuttle. Coordination with these users through the Department of Transportation will be ongoing throughout the design, as equipment will be relocated and or replaced as needed to incorporate the railroad crossing into the new traffic signal. It is our understanding that this work will require a state permit from the Department of Transportation through their Physical Alteration Permit process. This application for state approval was not considered per the RFP scope of work.

### **Summary**

The information included in this memorandum provides a summary of traffic data collected, and the concerns that have been raised as part of the 35 percent project submission. As we move forward to the 65 percent documents, use of the NUWC entrance must be clarified due to the multiple operational and safety issues that have been identified. We are developing the design further per the alternative presented to the Navy at our December 14, 2006 meeting in order to meet our project schedule, understanding that the design of the intersection should not substantially change. The changes that would occur include changes external to the intersection through upgrading existing gates, or reopening closed gates to reduce anticipated vehicular and truck traffic at the junction. If these changes to traffic patterns do not occur, operational problems may arise during the peak daily traffic conditions at the intersection as defined.

Attachments

Traffic Count Data

Defense Highway

RAB Professional Engineers, Inc.  
 10 Ross Simons Drive  
 Cranston, Rhode Island 02920

Project: North Gate Signal  
 Town: Newport  
 Intersection: Defense Hwy at Gate 11  
 Weather: Sunny/Cool

File Name : defense highway at gate 11  
 Site Code : 00000001  
 Start Date : 10/25/2006  
 Page No : 1

Groups Printed- Unshifted

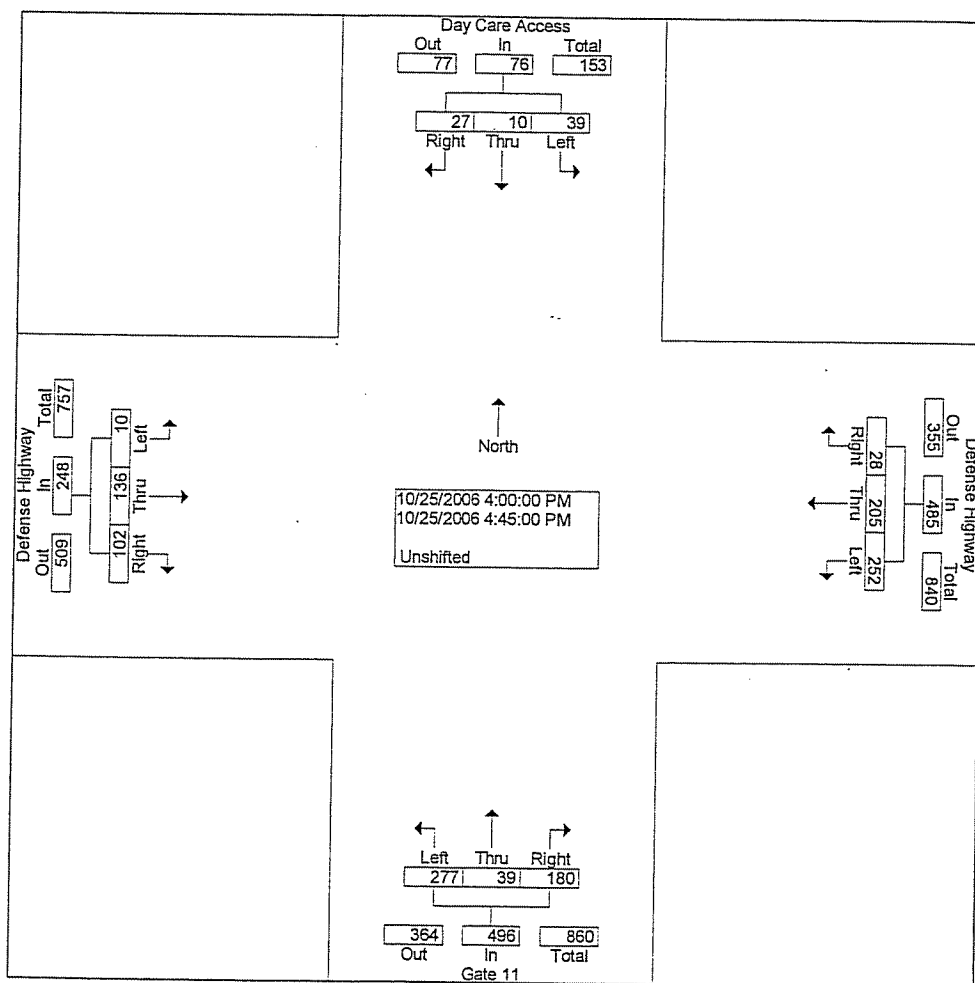
Start Time	Day Care Access Southbound				Defense Highway Westbound				Gate 11 Northbound				Defense Highway Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
06:00 AM	0	0	1	1	15	17	2	34	5	0	12	17	1	3	19	23	75
06:15 AM	0	1	0	1	38	18	0	56	8	1	19	28	1	6	28	35	120
06:30 AM	0	0	0	0	37	11	5	53	18	1	38	57	1	15	37	53	163
06:45 AM	1	7	2	10	44	18	3	65	21	2	41	64	3	20	65	88	227
Total	1	8	3	12	134	64	10	208	52	4	110	166	6	44	149	199	585
07:00 AM	6	9	2	17	33	21	8	62	19	6	50	75	9	6	80	95	249
07:15 AM	7	17	1	25	39	15	6	60	24	3	57	84	4	21	80	105	274
07:30 AM	0	3	2	5	36	30	5	71	28	5	37	70	2	16	71	89	235
07:45 AM	3	8	1	12	40	40	6	86	35	3	59	97	9	26	59	94	289
Total	16	37	6	59	148	106	25	279	106	17	203	326	24	69	290	383	1047
08:00 AM	7	7	0	14	32	34	8	74	29	6	64	99	7	29	49	85	272
08:15 AM	5	7	3	15	23	37	7	67	35	5	57	97	4	32	33	69	248
08:30 AM	8	2	1	11	16	30	11	57	27	8	57	92	4	32	34	70	230
08:45 AM	14	8	2	24	17	35	8	60	25	3	41	69	3	19	31	53	206
Total	34	24	6	64	88	136	34	258	116	22	219	357	18	112	147	277	956
09:00 AM	4	6	2	12	20	20	2	42	8	3	36	47	1	23	17	41	142
Total	4	6	2	12	20	20	2	42	8	3	36	47	1	23	17	41	142
03:00 PM	1	1	2	4	44	43	1	88	48	1	41	90	0	20	16	36	218
03:15 PM	2	1	1	4	54	41	2	97	52	2	48	102	0	39	25	64	267
03:30 PM	3	1	5	9	50	46	8	104	65	11	45	121	3	23	19	45	279
03:45 PM	8	4	7	19	39	50	3	92	69	5	54	128	0	15	17	32	271
Total	14	7	15	36	187	180	14	381	234	19	188	441	3	97	77	177	1035
04:00 PM	6	4	5	15	66	50	2	118	84	17	67	168	0	32	32	64	365
04:15 PM	11	2	7	20	66	61	3	130	58	7	40	105	5	28	25	58	313
04:30 PM	8	2	6	16	58	54	12	124	79	12	44	135	5	39	20	64	339
04:45 PM	14	2	9	25	62	40	11	113	56	3	29	88	0	37	25	62	288
Total	39	10	27	76	252	205	28	485	277	39	180	496	10	136	102	248	1305
05:00 PM	13	5	2	20	62	62	4	128	54	5	33	92	2	44	24	70	310
05:15 PM	3	6	0	9	28	36	1	65	33	0	23	56	0	62	29	91	221
05:30 PM	2	1	1	4	23	46	3	72	33	1	20	54	0	32	14	46	176
05:45 PM	0	0	2	2	9	37	1	47	22	0	12	34	1	47	9	57	140
Total	18	12	5	35	122	181	9	312	142	6	88	236	3	185	76	264	847
Grand Total	126	104	64	294	951	892	122	1965	935	110	1024	2069	65	666	858	1589	5917
Apprch %	42.9	35.4	21.8		48.4	45.4	6.2		45.2	5.3	49.5		4.1	41.9	54.0		
Total %	2.1	1.8	1.1	5.0	16.1	15.1	2.1	33.2	15.8	1.9	17.3	35.0	1.1	11.3	14.5	26.9	

RAB Professional Engineers, Inc.  
 10 Ross Simons Drive  
 Cranston, Rhode Island 02920

Project: North Gate Signal  
 Town: Newport  
 Intersection: Defense Hwy at Gate 11  
 Weather: Sunny/Cool

File Name : defense highway at gate 11  
 Site Code : 00000001  
 Start Date : 10/25/2006  
 Page No : 3

Start Time	Day Care Access Southbound				Defense Highway Westbound				Gate 11 Northbound				Defense Highway Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection 04:00 PM																	
Volume	39	10	27	76	252	205	28	485	277	39	180	496	10	136	102	248	1305
Percent	51.3	13.2	35.5		52.0	42.3	5.8		55.8	7.9	36.3		4.0	54.8	41.1		
04:00 Volume	6	4	5	15	66	50	2	118	84	17	67	168	0	32	32	64	365
Peak Factor																	
High Int. 04:45 PM																	
Volume	14	2	9	25	66	61	3	130	84	17	67	168	0	32	32	64	0.894
Peak Factor	0.760				0.933				0.738				0.969				



RAB Professional Engineers, Inc.  
 10 Ross Simons Drive  
 Cranston, Rhode Island 02920

Project: North Gate Signal  
 Town: Newport  
 Intersection: Defense Hwy at NUWC  
 Weather: Sunny/Cool

File Name : defense highway at nuwc  
 Site Code : 00000002  
 Start Date : 10/26/2006  
 Page No : 1

Groups Printed- Unshifted

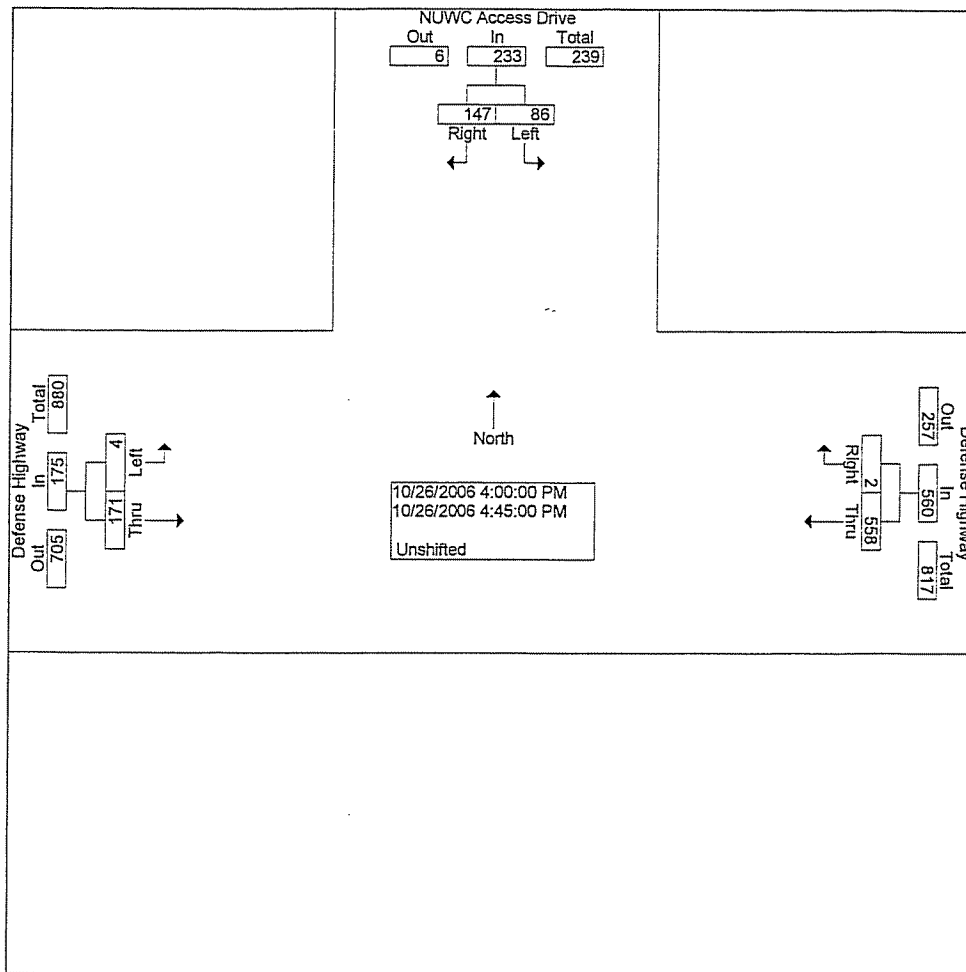
Start Time	NUWC Access Drive Southbound				Defense Highway Westbound				Northbound				Defense Highway Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
06:00 AM	0	0	0	0	0	4	4	8	0	0	0	0	13	22	0	35	43
06:15 AM	2	0	1	3	0	7	10	17	0	0	0	0	42	38	0	80	100
06:30 AM	0	0	1	1	0	15	9	24	0	0	0	0	36	53	0	89	114
06:45 AM	2	0	0	2	0	17	31	48	0	0	0	0	45	87	0	132	182
Total	4	0	2	6	0	43	54	97	0	0	0	0	136	200	0	336	439
07:00 AM	0	0	1	1	0	22	18	40	0	0	0	0	49	106	0	155	196
07:15 AM	2	0	0	2	0	26	21	47	0	0	0	0	71	106	0	177	226
07:30 AM	3	0	1	4	0	34	30	64	0	0	0	0	72	97	0	169	237
07:45 AM	1	0	0	1	0	54	27	81	0	0	0	0	76	95	0	171	253
Total	6	0	2	8	0	136	96	232	0	0	0	0	268	404	0	672	912
08:00 AM	7	0	1	8	0	39	46	85	0	0	0	0	58	68	0	126	219
08:15 AM	2	0	1	3	0	32	26	58	0	0	0	0	61	69	0	130	191
08:30 AM	2	0	1	3	0	27	31	58	0	0	0	0	57	67	0	124	185
08:45 AM	5	0	2	7	0	32	30	62	0	0	0	0	37	58	0	95	164
Total	16	0	5	21	0	130	133	263	0	0	0	0	213	262	0	475	759
03:00 PM	12	0	21	33	0	83	2	85	0	0	0	0	1	29	0	30	148
03:15 PM	15	0	13	28	0	79	3	82	0	0	0	0	1	31	0	32	142
03:30 PM	16	0	37	53	0	111	4	115	0	0	0	0	2	43	0	45	213
03:45 PM	12	0	33	45	0	102	3	105	0	0	0	0	1	39	0	40	190
Total	55	0	104	159	0	375	12	387	0	0	0	0	5	142	0	147	693
04:00 PM	26	0	41	67	0	133	1	134	0	0	0	0	1	35	0	36	237
04:15 PM	14	0	34	48	0	152	0	152	0	0	0	0	1	38	0	39	239
04:30 PM	26	0	41	67	0	146	0	146	0	0	0	0	2	48	0	50	263
04:45 PM	20	0	31	51	0	127	1	128	0	0	0	0	0	50	0	50	229
Total	86	0	147	233	0	558	2	560	0	0	0	0	4	171	0	175	968
05:00 PM	11	0	28	39	0	107	0	107	0	0	0	0	1	48	0	49	195
05:15 PM	19	0	16	35	0	105	0	105	0	0	0	0	0	51	0	51	191
05:30 PM	18	0	15	33	0	72	1	73	0	0	0	0	1	37	0	38	144
05:45 PM	5	0	13	18	0	67	1	68	0	0	0	0	0	36	0	36	122
Total	53	0	72	125	0	351	2	353	0	0	0	0	2	172	0	174	652
Grand Total	220	0	332	552	0	1593	299	1892	0	0	0	0	628	1351	0	1979	4423
Apprch %	39.9	0.0	60.1		0.0	84.2	15.8		0.0	0.0	0.0		31.7	68.3	0.0		
Total %	5.0	0.0	7.5	12.5	0.0	36.0	6.8	42.8	0.0	0.0	0.0	0.0	14.2	30.5	0.0	44.7	

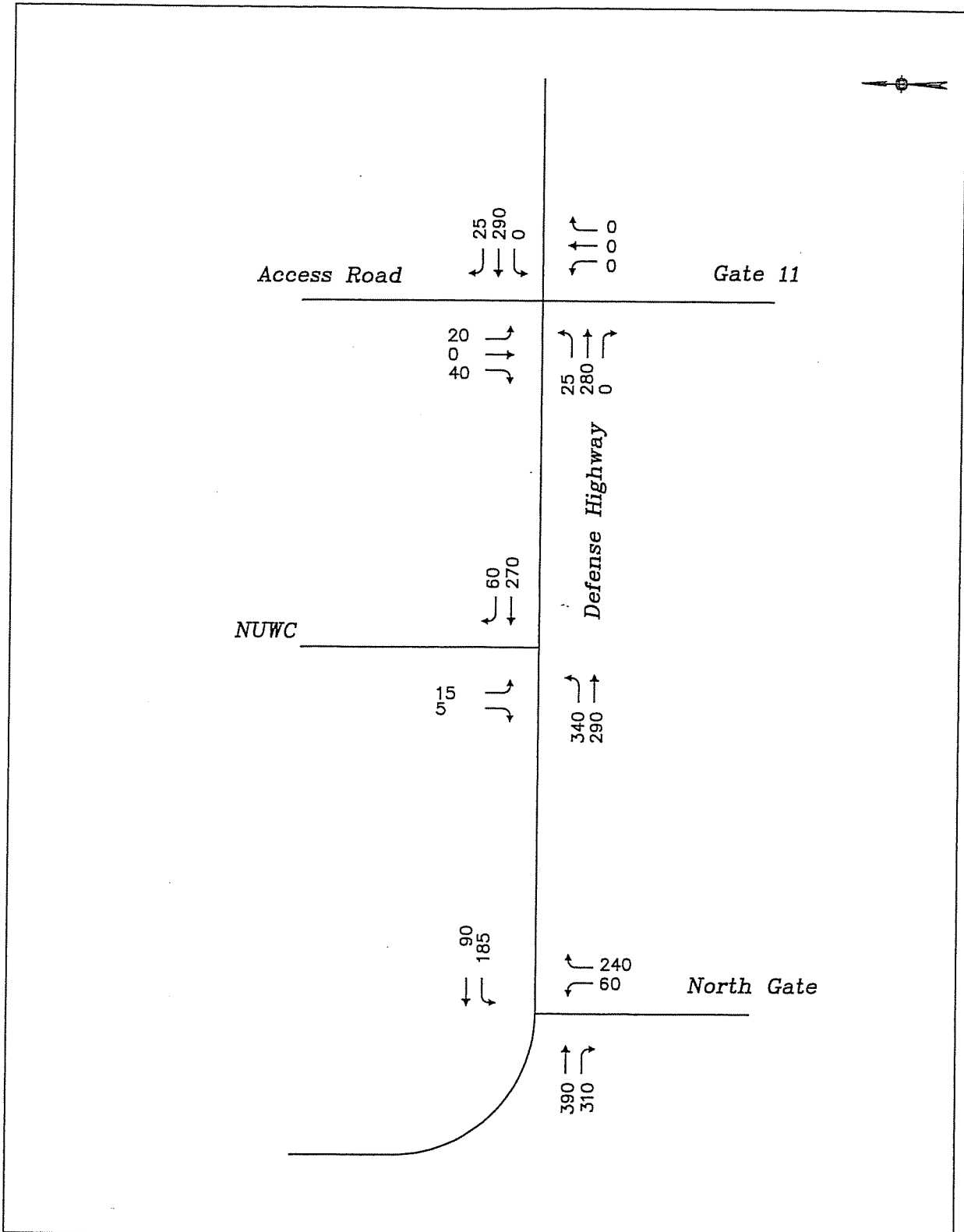
RAB Professional Engineers, Inc.  
 10 Ross Simons Drive  
 Cranston, Rhode Island 02920

Project: North Gate Signal  
 Town: Newport  
 Intersection: Defense Hwy at NUWC  
 Weather: Sunny/Cool

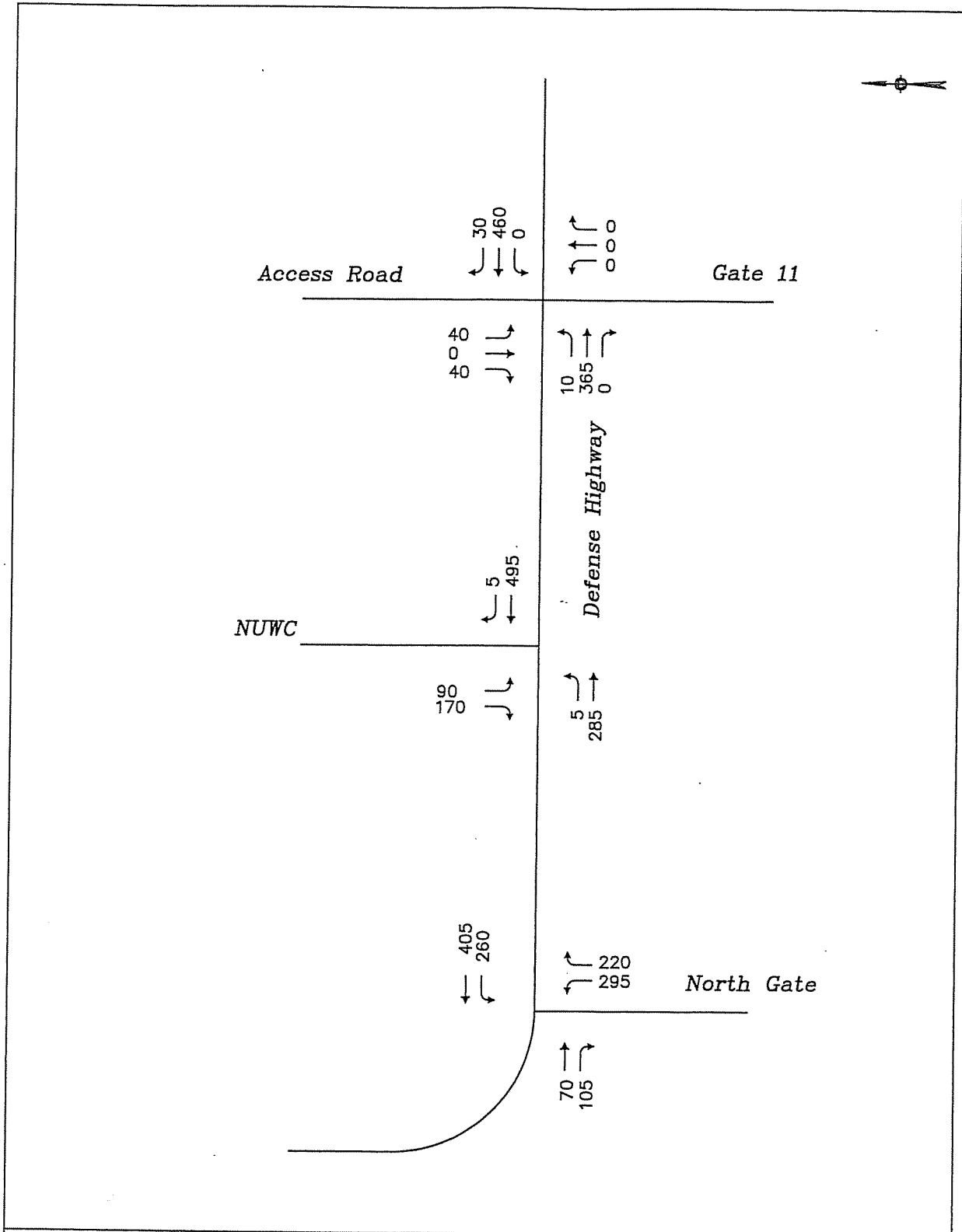
File Name : defense highway at nuwc  
 Site Code : 00000002  
 Start Date : 10/26/2006  
 Page No : 3

Start Time	NUWC Access Drive Southbound				Defense Highway Westbound				Northbound				Defense Highway Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection 04:00 PM																	
Volume	86	0	147	233	0	558	2	560	0	0	0	0	4	171	0	175	968
Percent	36.9	0.0	63.1		0.0	99.6	0.4		0.0	0.0	0.0		2.3	97.7	0.0		
04:30 Volume	26	0	41	67	0	146	0	146	0	0	0	0	2	48	0	50	263
Peak Factor																	
High Int. 04:00 PM																	
Volume	26	0	41	67	0	152	0	152	0	0	0	0	2	48	0	50	0.920
Peak Factor	0.869				0.921								0.875				





RAB Professional Engineers, Inc.	WEEKDAY AM PEAK HOUR TRAFFIC VOLUMES ESTIMATED FUTURE CONDITIONS	FIGURE <b>1</b>
	NORTH GATE IMPROVEMENTS MIDDLETOWN, RI	



RAB Professional Engineers, Inc.

WEEKDAY PM PEAK HOUR TRAFFIC VOLUMES  
ESTIMATED FUTURE CONDITIONS

NORTH GATE IMPROVEMENTS  
MIDDLETOWN, RI

FIGURE  
2



Project: North Gate Signal  
 Town: Newport  
 Roadway: Defense Highway  
 Location: 300 ft north of North Gate

DEFENSE HIG  
 Site Code: 000000000001

Start Time	30-Oct-06 Mon	31-Oct-06 Tue	01-Nov-06 Wed	02-Nov-06 Thu	03-Nov-06 Fri	Weekday Average	04-Nov-06 Sat	05-Nov-06 Sun
12:00 AM	5	5	4	5	11	6	7	12
01:00	2	4	10	4	6	5	7	10
02:00	4	3	5	0	0	2	2	11
03:00	2	1	1	1	3	2	3	5
04:00	7	8	10	6	6	7	5	4
05:00	52	46	46	52	46	48	9	3
06:00	486	468	427	457	419	451	43	18
07:00	843	887	863	820	835	850	119	49
08:00	658	626	609	606	627	625	241	88
09:00	366	365	314	364	369	356	282	111
10:00	367	337	291	341	326	332	357	132
11:00	383	426	313	360	446	386	391	189
12:00 PM	376	453	389	416	466	420	339	185
01:00	357	373	318	342	408	360	314	137
02:00	447	486	396	436	501	453	321	182
03:00	681	817	660	687	723	714	341	166
04:00	813	893	825	799	748	816	198	162
05:00	481	344	511	504	386	445	111	76
06:00	154	75	161	137	132	132	69	52
07:00	100	50	118	92	64	85	45	35
08:00	70	38	58	46	39	50	32	25
09:00	50	29	70	36	28	43	26	11
10:00	21	6	16	22	34	20	26	15
11:00	8	13	15	15	27	16	22	11
Total	6733	6753	6430	6548	6650		3310	1689
Percentage	101.6%	101.9%	97.1%	98.9%	100.4%		50.0%	25.5%
AM Peak	07:00	07:00	07:00	07:00	07:00		11:00	11:00
Volume	843	887	863	820	835		391	189
PM Peak	16:00	16:00	16:00	16:00	16:00		15:00	12:00
Volume	813	893	825	799	748		341	185

Project: North Gate Signal  
 Town: Newport  
 Roadway: Defense Highway  
 Location: 300 ft north of North Gate

DEFENSE HIG  
 Site Code: 00000000001

Start Time	06-Nov-06 Mon	07-Nov-06 Tue	08-Nov-06 Wed	09-Nov-06 Thu	10-Nov-06 Fri	Weekday Average	11-Nov-06 Sat	12-Nov-06 Sun
12:00 AM	2	9	9	7	8	7	*	*
01:00	8	3	8	3	14	7	*	*
02:00	4	1	4	7	6	4	*	*
03:00	3	4	3	2	2	3	*	*
04:00	7	9	9	6	7	8	*	*
05:00	43	46	42	41	15	37	*	*
06:00	436	431	435	394	74	354	*	*
07:00	861	855	823	822	199	712	*	*
08:00	697	597	571	570	257	538	*	*
09:00	354	374	301	373	269	334	*	*
10:00	329	341	264	361	*	324	*	*
11:00	412	416	348	422	*	400	*	*
12:00 PM	389	382	309	396	*	369	*	*
01:00	320	397	273	392	*	346	*	*
02:00	425	460	355	497	*	434	*	*
03:00	680	691	617	692	*	670	*	*
04:00	866	843	784	691	*	796	*	*
05:00	476	472	460	443	*	463	*	*
06:00	161	144	134	134	*	143	*	*
07:00	62	72	67	53	*	64	*	*
08:00	56	59	38	38	*	48	*	*
09:00	30	29	40	28	*	32	*	*
10:00	18	18	23	23	*	20	*	*
11:00	14	10	15	19	*	14	*	*
Total	6653	6663	5932	6414	851		0	0
Percentage	108.6%	108.7%	96.8%	104.7%	13.9%		0.0%	0.0%
AM Peak	07:00	07:00	07:00	07:00	09:00			
Volume	861	855	823	822	269			
PM Peak	16:00	16:00	16:00	15:00				
Volume	866	843	784	692				
Total		13416	12362					



RAB Professional Engineers, Inc.  
 10 Ross Simons Drive  
 Cranston, Rhode Island 02920

Project: North Gate Signal  
 Town: Newport  
 Roadway: Defense Highway  
 Location: 300 ft north of North Gate

DEFENSE HIG  
 Site Code: 000000000001

Time	Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
12:00														
AM														
01:00	4	1	2	2	4	1	9	2	4	3	7	5	5	2
02:00	2	0	8	2	3	1	4	2	6	1	7	3	5	1
03:00	1	3	1	4	0	0	0	0	2	0	5	6	1	2
04:00	2	0	1	0	1	0	1	2	0	3	4	1	1	1
05:00	1	6	1	9	0	6	1	5	3	3	0	4	1	5
06:00	5	47	39	37	8	44	8	38	2	7	1	2	6	31
07:00	59	427	48	379	57	400	51	368	15	28	5	13	43	288
08:00	144	699	143	720	148	672	148	687	60	59	19	30	115	516
09:00	162	496	139	470	153	453	160	467	110	131	31	57	129	365
10:00	151	215	107	207	142	222	146	223	124	158	55	56	125	186
11:00	184	183	129	162	141	200	156	170	162	195	54	78	142	165
12:00	203	180	191	122	185	175	255	191	189	202	84	105	195	163
PM														
01:00	185	191	192	197	202	214	243	223	162	177	103	82	187	188
02:00	185	172	168	150	188	154	228	180	172	142	64	73	175	146
03:00	310	137	260	136	287	149	332	169	155	166	87	95	252	144
04:00	505	176	508	152	501	186	537	186	160	181	87	79	421	161
05:00	635	178	676	149	638	161	594	154	108	90	94	68	493	141
06:00	349	132	367	144	360	144	261	125	62	49	42	34	239	106
07:00	101	53	106	55	87	50	82	50	32	37	27	25	68	43
08:00	54	29	64	54	53	39	39	25	30	15	16	19	40	32
09:00	33	37	23	35	29	17	23	16	18	14	20	5	24	20
10:00	20	30	34	36	23	13	14	14	11	15	4	7	17	18
11:00	19	2	13	3	12	10	13	21	13	13	9	6	12	8
12:00	5	3	11	4	8	7	13	14	9	13	8	3	9	7
Total	3319	3414	3201	3229	3230	3318	3318	3332	1609	1701	833	856	2705	2739
Day	6733	3417	6430	3229	6548	3318	6650	3310	3310	1689	1689	5444		
AM Peak	11:00	07:00	11:00	07:00	11:00	07:00	11:00	07:00	11:00	11:00	11:00	11:00	11:00	07:00
Volume	203	699	191	720	185	672	255	687	189	202	84	105	195	516
PM Peak	16:00	12:00	16:00	12:00	16:00	12:00	16:00	12:00	13:00	15:00	12:00	14:00	16:00	12:00
Volume	635	191	676	197	638	214	594	223	172	181	103	95	493	188

RAB Professional Engineers, Inc.  
 10 Ross Simons Drive  
 Cranston, Rhode Island 02920

Project: North Gate Signal  
 Town: Newport  
 Roadway: Defense Highway  
 Location: 300 ft north of North Gate

DEFENSE HIG  
 Site Code: 000000000001

Start Time	06-Nov-06		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	1	1	6	3	6	3	6	3	6	3	6	3	6	3	6	3
01:00	4	4	2	1	5	3	3	3	6	8	*	*	*	*	5	2
02:00	2	2	1	0	3	1	3	3	2	4	*	*	*	*	4	3
03:00	0	3	2	1	2	1	1	1	0	2	*	*	*	*	2	2
04:00	2	5	2	2	2	7	1	1	2	5	*	*	*	*	1	2
05:00	4	39	4	42	6	36	5	36	7	8	*	*	*	2	6	
06:00	65	371	4	379	50	385	55	339	25	49	*	*	*	5	32	
07:00	159	702	165	690	129	694	140	682	73	126	*	*	*	49	305	
08:00	173	524	137	460	134	437	129	441	105	152	*	*	*	133	579	
09:00	126	228	123	251	101	200	127	246	101	168	*	*	*	136	403	
10:00	163	166	156	185	124	140	165	196	*	*	*	*	*	116	219	
11:00	217	195	237	179	205	143	239	183	*	*	*	*	*	152	172	
12:00 PM	199	190	212	170	165	144	220	176	*	*	*	*	*	224	175	
01:00	162	158	215	182	150	123	229	163	*	*	*	*	*	199	170	
02:00	280	145	307	153	229	126	315	182	*	*	*	*	*	189	156	
03:00	508	172	529	162	487	130	508	184	*	*	*	*	*	283	152	
04:00	681	185	665	178	622	162	531	160	*	*	*	*	*	508	162	
05:00	347	129	339	133	352	108	318	125	*	*	*	*	*	625	171	
06:00	96	65	80	64	84	50	73	61	*	*	*	*	*	339	124	
07:00	38	24	38	34	36	31	31	22	*	*	*	*	*	83	60	
08:00	23	33	28	31	22	16	22	16	*	*	*	*	*	36	28	
09:00	17	13	19	10	26	14	12	16	*	*	*	*	*	24	24	
10:00	10	8	12	6	11	12	14	9	*	*	*	*	*	18	13	
11:00	8	6	6	4	9	6	12	7	*	*	*	*	*	12	9	
Total	3285	3368	3337	3326	2960	2972	3159	3255	327	524	0	0	0	3154	2975	
Day	6653	6663	6663	6414	5932	5932	6414	851	851	851	0	0	0	6129	6129	
AM Peak	11:00	07:00	11:00	07:00	11:00	07:00	11:00	07:00	08:00	09:00				11:00	07:00	
Volume	217	702	237	690	205	694	239	682	105	168				224	579	
PM Peak	16:00	13:00	16:00	13:00	16:00	16:00	16:00	15:00						16:00	16:00	
Volume	681	190	665	182	622	162	531	184						625	171	

Comb. Total 13386 13416 12362 12962 7501 3310 3387 13271  
 ADT Not Calculated

06218.00  
KB/SR/11m(B)

**Keith Bloomer**

---

**From:** Montani, Gerard A CIV 421, Engineering [gerard.montani@navy.mil]  
**Sent:** Monday, February 05, 2007 8:54 AM  
**To:** Teresa Crean  
**Cc:** Keith Bloomer; Pam Sherrill; Sprague, James CIV NAVFAC MIDLANT, NWPT; Poisson, Roger N CIV NAVFAC MIDLANT, NWPT  
**Subject:** RE: AIPC Shoreline Gtwys, traffic & truck counts



Defense Highway  
traffic study....

Teresa,

Attached is a copy of the traffic count study for Defense Highway.  
Please review and let me know if you require additional information.  
Thanks.

R/Gerry

-----Original Message-----

**From:** Teresa Crean [mailto:teresa@aquidneckplanning.org]  
**Sent:** Thursday, February 01, 2007 16:53  
**To:** Montani, Gerard A CIV 421, Engineering  
**Cc:** 'Keith Bloomer'; 'Pam Sherrill'  
**Subject:** AIPC Shoreline Gtwys, traffic & truck counts

Hi Gerry-

This 12/4/06 note is the last email I have from you in my Inbox, so it appears I never received the email with the traffic count/truck count info.

Could you please send the information again when you have a chance?  
Please cc. Keith Bloomer (kbloomer@parecorp.com) on the correspondence.

Thanks!  
Teresa

-----Original Message-----

**From:** Montani, Gerard A CIV 421, Engineering [mailto:gerard.montani@navy.mil]  
**Sent:** Monday, December 04, 2006 8:14 AM  
**To:** Teresa Crean  
**Subject:** RE: AIPC Shoreline Gateways

Teresa,

You were right, we did cross e-mails. The meeting time sounds good -- I will see you Thursday at 9:00 a.m..

As far as getting on the base -- I'll need a letter on company letter head with the names, DOB, and place of birth. Please send it electronically or fax it to 401-841-3190. Don't hesitate to call me if you have any questions, 841-7614.

Take Care.

Gerry

-----Original Message-----

From: Teresa Crean [mailto:teresa@aquidneckplanning.org]  
Sent: Friday, December 01, 2006 15:31  
To: Montani, Gerard A CIV 421, Engineering  
Cc: 'Pam Sherrill'; 'Keith Bloomer'; John Shevlin  
Subject: AIPC Shoreline Gateways

Hi Gerry-

We're all set for Thursday, December 7, 9:00 a.m. Please let me know what arrangements I need to make to get us onto the base. I'll be in a meeting early this afternoon, but will call you Monday to coordinate for Thursday's meeting.

We look forward to meeting with you - please let me know if you have any questions or concerns.

Have a great weekend!

Sincerely,

Teresa

---

Teresa A. Crean, AICP

Land Use Planner

Aquidneck Island Planning Commission

321 East Main Road

Portsmouth, RI 02871

(401) 845-9299

(401) 845-9290 fax

www.aquidneckplanning.org <<http://www.aquidneckplanning.org>>



Project: North Gate Signal  
 Town: Newport  
 Roadway: Defense Highway  
 Location: 300 ft north of North Gate

DEFENSE HIG  
 Site Code: 00000000001

Start Time	30-Oct-06 Mon	31-Oct-06 Tue	01-Nov-06 Wed	02-Nov-06 Thu	03-Nov-06 Fri	Weekday Average	04-Nov-06 Sat	05-Nov-06 Sun
12:00 AM	5	5	4	5	11	6	7	12
01:00	2	4	10	4	6	5	7	10
02:00	4	3	5	0	0	2	2	11
03:00	2	1	1	1	3	2	3	5
04:00	7	8	10	6	6	7	5	4
05:00	52	46	46	52	46	48	9	3
06:00	486	468	427	457	419	451	43	18
07:00	843	887	863	820	835	850	119	49
08:00	658	626	609	606	627	625	241	88
09:00	366	365	314	364	369	356	282	111
10:00	367	337	291	341	326	332	357	132
11:00	383	426	313	360	446	386	391	189
12:00 PM	376	453	389	416	466	420	339	185
01:00	357	373	318	342	408	360	314	137
02:00	447	486	396	436	501	453	321	182
03:00	681	817	660	687	723	714	341	166
04:00	813	893	825	799	748	816	198	162
05:00	481	344	511	504	386	445	111	76
06:00	154	75	161	137	132	132	69	52
07:00	100	50	118	92	64	85	45	35
08:00	70	38	58	46	39	50	32	25
09:00	50	29	70	36	28	43	26	11
10:00	21	6	16	22	34	20	26	15
11:00	8	13	15	15	27	16	22	11
Total	6733	6753	6430	6548	6650		3310	1689
Percentage	101.6%	101.9%	97.1%	98.9%	100.4%		50.0%	25.5%
AM Peak	07:00	07:00	07:00	07:00	07:00		11:00	11:00
Volume	843	887	863	820	835		391	189
PM Peak	16:00	16:00	16:00	16:00	16:00		15:00	12:00
Volume	813	893	825	799	748		341	185

Project: North Gate Signal  
 Town: Newport  
 Roadway: Defense Highway  
 Location: 300 ft north of North Gate

DEFENSE HIG  
 Site Code: 00000000001

Start Time	06-Nov-06 Mon	07-Nov-06 Tue	08-Nov-06 Wed	09-Nov-06 Thu	10-Nov-06 Fri	Weekday Average	11-Nov-06 Sat	12-Nov-06 Sun
12:00 AM	2	9	9	7	8	7	*	*
01:00	8	3	8	3	14	7	*	*
02:00	4	1	4	7	6	4	*	*
03:00	3	4	3	2	2	3	*	*
04:00	7	9	9	6	7	8	*	*
05:00	43	46	42	41	15	37	*	*
06:00	436	431	435	394	74	354	*	*
07:00	861	855	823	822	199	712	*	*
08:00	697	597	571	570	257	538	*	*
09:00	354	374	301	373	269	334	*	*
10:00	329	341	264	361	*	324	*	*
11:00	412	416	348	422	*	400	*	*
12:00 PM	389	382	309	396	*	369	*	*
01:00	320	397	273	392	*	346	*	*
02:00	425	460	355	497	*	434	*	*
03:00	680	691	617	692	*	670	*	*
04:00	866	843	784	691	*	796	*	*
05:00	476	472	460	443	*	463	*	*
06:00	161	144	134	134	*	143	*	*
07:00	62	72	67	53	*	64	*	*
08:00	56	59	38	38	*	48	*	*
09:00	30	29	40	28	*	32	*	*
10:00	18	18	23	23	*	20	*	*
11:00	14	10	15	19	*	14	*	*
Total	6653	6663	5932	6414	851		0	0
Percentage	108.6%	108.7%	96.8%	104.7%	13.9%		0.0%	0.0%
AM Peak	07:00	07:00	07:00	07:00	09:00			
Volume	861	855	823	822	269			
PM Peak	16:00	16:00	16:00	15:00				
Volume	866	843	784	692				
Total		13416	12362					

RAB Professional Engineers, Inc.  
 10 Ross Simons Drive  
 Cranston, Rhode Island 02920

Project: North Gate Signal  
 Town: Newport  
 Roadway: Defense Highway  
 Location: 300 ft north of North Gate

DEFENSE HIG  
 Site Code: 000000000001

Time	Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
12:00	*	*	*	*	*	*	*	*	*	*	*	*	4	1
01:00	*	*	*	*	*	*	*	*	*	*	*	*	2	1
02:00	*	*	*	*	*	*	*	*	*	*	*	*	2	2
03:00	*	*	*	*	*	*	*	*	*	*	*	*	3	1
04:00	*	*	*	*	*	*	*	*	*	*	*	*	1	3
05:00	*	*	*	*	*	*	*	*	*	*	*	*	7	15
06:00	*	*	*	*	*	*	*	*	*	*	*	*	24	35
07:00	*	*	*	*	*	*	*	*	*	*	*	*	36	62
08:00	*	*	*	*	*	*	*	*	*	*	*	*	55	70
09:00	*	*	*	*	*	*	*	*	*	*	*	*	69	101
10:00	*	*	*	*	*	*	*	*	*	*	*	*	89	103
11:00	*	*	*	*	*	*	*	*	*	*	*	*	93	113
12:00	*	*	*	*	*	*	*	*	*	*	*	*	89	87
PM													71	84
01:00	*	*	*	*	*	*	*	*	*	*	*	*	67	79
02:00	*	*	*	*	*	*	*	*	*	*	*	*	62	46
03:00	*	*	*	*	*	*	*	*	*	*	*	*	40	35
04:00	*	*	*	*	*	*	*	*	*	*	*	*	28	19
05:00	*	*	*	*	*	*	*	*	*	*	*	*	18	14
06:00	*	*	*	*	*	*	*	*	*	*	*	*	10	11
07:00	*	*	*	*	*	*	*	*	*	*	*	*	12	7
08:00	*	*	*	*	*	*	*	*	*	*	*	*	8	4
09:00	*	*	*	*	*	*	*	*	*	*	*	*	7	3
10:00	*	*	*	*	*	*	*	*	*	*	*	*	798	900
11:00	*	*	*	*	*	*	*	*	*	*	*	*	1698	1698
Total	0	0	0	0	0	0	0	0	0	0	0	0	11:00	11:00
Day	0	0	0	0	0	0	0	0	0	0	0	0	89	103
AM Peak													12:00	12:00
Volume													93	113
PM Peak													93	113
Volume													93	113

RAB Professional Engineers, Inc.  
 10 Ross Simons Drive  
 Cranston, Rhode Island 02920

Project: North Gate Signal  
 Town: Newport  
 Roadway: Defense Highway  
 Location: 300 ft north of North Gate

DEFENSE HIG  
 Site Code: 000000000001

Start Time	30-Oct-06		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	4	1	4	1	2	2	4	1	9	2	4	3	7	5	5	2
01:00	2	0	3	1	8	2	3	1	4	2	6	1	7	3	5	1
02:00	1	3	1	2	1	4	0	0	0	0	2	0	5	6	1	2
03:00	2	0	0	1	1	0	1	0	1	2	0	3	4	1	1	1
04:00	1	6	2	6	1	9	0	6	1	5	3	2	0	4	1	5
05:00	5	47	7	39	9	37	8	44	8	38	2	7	1	2	6	31
06:00	59	427	67	401	48	379	57	400	51	368	15	28	5	13	43	288
07:00	144	699	144	743	143	720	148	672	148	687	60	59	19	30	115	516
08:00	162	496	146	480	139	470	153	453	160	467	110	131	31	57	129	365
09:00	151	215	147	218	107	207	142	222	146	223	124	158	55	56	125	186
10:00	184	183	168	169	129	162	141	200	156	170	162	195	54	78	142	165
11:00	203	180	259	167	191	122	185	175	255	191	189	202	84	105	195	163
12:00 PM	185	191	220	233	192	197	202	214	243	223	162	177	103	82	187	188
01:00	185	172	220	153	168	150	188	154	228	180	172	142	64	73	175	146
02:00	310	137	331	155	260	136	287	149	332	169	155	166	87	95	252	144
03:00	505	176	647	170	508	152	501	186	537	186	160	181	87	79	421	161
04:00	635	178	706	187	676	149	638	161	594	154	108	90	94	68	493	141
05:00	349	132	233	111	367	144	360	144	261	125	62	49	42	34	239	106
06:00	101	53	44	31	106	55	87	50	82	50	32	37	27	25	68	43
07:00	54	46	21	29	64	54	53	39	39	25	30	15	16	19	40	32
08:00	33	37	21	17	23	35	29	17	23	16	18	14	20	5	24	20
09:00	20	30	16	13	34	36	23	13	14	14	11	15	4	7	17	18
10:00	19	2	4	2	13	3	12	10	13	21	13	13	9	6	12	8
11:00	5	3	6	7	11	4	8	7	13	14	9	13	8	3	9	7
Total	3319	3414	3417	3336	3201	3229	3230	3318	3318	3332	1609	1701	833	856	2705	2739
Day	6733	6733	6753	6753	6430	6548	6548	6548	6650	6650	3310	3310	1689	1689	5444	5444
AM Peak	11:00	07:00	11:00	07:00	07:00	07:00	07:00	07:00	11:00	07:00	11:00	11:00	11:00	11:00	11:00	07:00
Volume	203	699	259	743	191	720	185	672	255	687	189	202	84	105	195	516
PM Peak	16:00	12:00	16:00	12:00	12:00	12:00	12:00	12:00	16:00	12:00	13:00	15:00	12:00	14:00	16:00	12:00
Volume	635	191	706	233	676	197	638	214	594	223	172	181	103	95	493	188

RAB Professional Engineers, Inc.  
 10 Ross Simons Drive  
 Cranston, Rhode Island 02920

Project: North Gate Signal  
 Town: Newport  
 Roadway: Defense Highway  
 Location: 300 ft north of North Gate

DEFENSE HIG  
 Site Code: 000000000001

Start Time	06-Nov-06		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
12:00																
AM																
01:00	1	1	6	3	6	3	6	3	6	3	6	3	6	3	6	3
02:00	4	4	2	1	5	3	3	3	6	6	8	8	8	8	5	2
03:00	2	2	1	0	3	1	3	1	2	2	4	4	4	4	4	3
04:00	0	3	2	2	2	1	1	1	0	0	2	2	2	2	2	2
05:00	2	5	2	7	2	7	1	5	2	2	5	5	5	5	2	6
06:00	4	39	4	42	6	36	5	36	7	8	8	8	8	7	32	6
07:00	65	371	52	379	50	385	55	339	25	49	49	49	49	49	49	305
08:00	159	702	165	690	129	694	140	682	73	126	126	126	126	133	133	579
09:00	173	524	137	460	134	437	129	441	105	152	152	152	152	136	136	403
10:00	126	228	123	251	101	200	127	246	101	168	168	168	168	116	116	219
11:00	163	166	156	185	124	140	165	196	101	*	*	*	*	152	152	172
12:00	217	195	237	179	205	143	239	183	*	*	*	*	*	224	224	175
PM																
01:00	199	190	212	170	165	144	220	176	*	*	*	*	*	199	199	170
02:00	162	158	215	182	150	123	229	163	*	*	*	*	*	189	189	156
03:00	280	145	307	153	229	126	315	182	*	*	*	*	*	283	283	152
04:00	508	172	529	162	487	130	508	184	*	*	*	*	*	508	508	162
05:00	681	185	665	178	622	162	531	160	*	*	*	*	*	625	625	171
06:00	347	129	339	133	352	108	318	125	*	*	*	*	*	339	339	124
07:00	96	65	80	64	84	50	73	61	*	*	*	*	*	83	83	60
08:00	38	24	38	34	36	31	31	22	*	*	*	*	*	36	36	28
09:00	23	33	28	31	22	16	22	16	*	*	*	*	*	24	24	24
10:00	17	13	19	10	26	14	12	16	*	*	*	*	*	18	18	13
11:00	10	8	12	6	11	12	14	9	*	*	*	*	*	12	12	9
12:00	8	6	16	4	9	6	12	7	*	*	*	*	*	9	9	6
Total	3285	3368	3337	3326	2960	2972	3159	3255	327	524	0	0	0	3154	2975	
Day	6653		6663		5932		6414		851		0	0	0	6129		
AM Peak	11:00	07:00	11:00	07:00	11:00	07:00	11:00	07:00	08:00	09:00				11:00	07:00	
Volume	217	702	237	690	205	694	239	682	105	168				224	579	
PM Peak	16:00	12:00	16:00	13:00	16:00	16:00	16:00	15:00						16:00	16:00	
Volume	681	190	665	182	622	162	531	184						625	171	

Comb. Total 13386 13416 12362 12962 7501 3310 3387 13271

ADT Not Calculated

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## Appendix B

*Crash Data*



Shoreline Drive Gateway  
 Accident Data Summary  
 Pare Project No. 06218.00  
 February 2007



2003			
Intersection	No. of Crashes	No. of Crashes w/Injury	No. of Crashes w/Fatality
Coddington Highway & Sherman Lane	5	1	0
West Main Road (RT 114) & Stringham Road	21	3	0
<b>TOTAL</b>	<b>26</b>	<b>4</b>	<b>0</b>

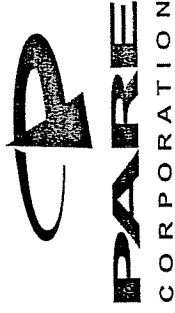
2004			
Intersection	No. of Crashes	No. of Crashes w/Injury	No. of Crashes w/Fatality
Coddington Highway & Sherman Lane	2	0	0
West Main Road (RT 114) & Stringham Road	15	2	0
Stringham Road and Defense Highway (Burma Rd)	4	1	0
Stringham Road and Stevens Road	1	0	0
<b>TOTAL</b>	<b>22</b>	<b>3</b>	<b>0</b>

2005			
Intersection	No. of Crashes	No. of Crashes w/Injury	No. of Crashes w/Fatality
Coddington Highway & Sherman Lane	3	0	0
West Main Road (RT 114) & Stringham Road	14	3	0
Stringham Road and Defense Highway (Burma Rd)	2	1	0
Stringham Road and Worden Street	1	0	0
<b>TOTAL</b>	<b>20</b>	<b>4</b>	<b>0</b>

2006			
Intersection	No. of Crashes	No. of Crashes w/Injury	No. of Crashes w/Fatality
West Main Road (RT 114) & Stringham Road	12	3	0
Stringham Road and Stevens Road	1	0	0
Stringham Road and Sullivan Road	2	1	0
<b>TOTAL</b>	<b>15</b>	<b>4</b>	<b>0</b>

2007			
Intersection	No. of Crashes	No. of Crashes w/Injury	No. of Crashes w/Fatality
West Main Road (RT 114) & Stringham Road	1	0	0
<b>TOTAL</b>	<b>1</b>	<b>0</b>	<b>0</b>

Shoreline Drive Gateway  
 Accident Data Summary  
 Pare Project No. 06218.00  
 February 2007



2003									
Intersection	Rear End	Angle	Broadside	Sideswipe - Same Direction	Sideswipe - Opp. Direction	Loss of Control	Object	Ran Off Road	
Coddington Highway & Sherman Lane	2	1	1	1	0	0	0	0	0
West Main Road (RT 114) & Stringham Road	10	5	2	3	0	0	0	0	1
<b>TOTAL</b>	<b>12</b>	<b>6</b>	<b>3</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>

2004									
Intersection	Rear End	Angle	Broadside	Sideswipe - Same Direction	Sideswipe - Opp. Direction	Loss of Control	Object	Ran Off Road	
Coddington Highway & Sherman Lane	1	1	0	0	0	0	0	0	0
West Main Road (RT 114) & Stringham Road	9	3	0	2	0	0	0	0	1
Stringham Road and Defense Highway (Burma Rd)	0	1	0	0	0	3	0	0	0
Stringham Road and Stevens Road	0	0	0	0	0	1	0	0	0
<b>TOTAL</b>	<b>10</b>	<b>5</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>1</b>

2005									
Intersection	Rear End	Angle	Broadside	Sideswipe - Same Direction	Sideswipe - Opp. Direction	Loss of Control	Object	Ran Off Road	
Coddington Highway & Sherman Lane	1	0	1	1	0	0	0	0	0
West Main Road (RT 114) & Stringham Road	8	4	2	0	0	0	0	0	0
Stringham Road and Defense Highway (Burma Rd)	0	1	0	0	1	0	0	0	0
Stringham Road and Worden Street	0	0	1	0	0	0	0	0	0
<b>TOTAL</b>	<b>9</b>	<b>5</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

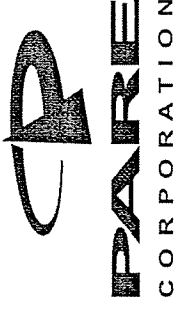




Middletown Accident Report Summary  
 Pare Project No. 06218.00  
 December 19, 2006

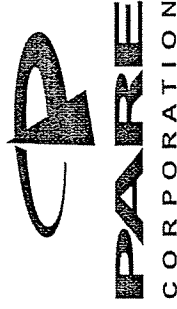
**CODDINGTON HIGHWAY AND SHERMAN LANE**

Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
03-1057-AC	10/2/2003	CODDINGTON HW	SHERMAN LN	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
03-224-AC	3/6/2003	CODDINGTON HW	SHERMAN LN	2	0	0	UNK	SNOW/SLUSH	DAYLIGHT	BROADSIDE
03-238-AC	3/7/2003	CODDINGTON HW	SHERMAN LN	5	3	0	UNK	SNOW/SLUSH	DAYLIGHT	REAR END
03-828-AC	8/7/2003	CODDINGTON HW	SHERMAN LN	2	0	0	NO ADVERSE	DRY	DAYLIGHT	SIDESWIPE - SD
03-879-AC	8/18/2003	CODDINGTON HW	SHERMAN LN	2	0	0	NO ADVERSE	WET	DAYLIGHT	ANGLE
04-641-AC	7/28/2004	CODDINGTON HW	SHERMAN LN	2	0	0	NO ADVERSE	WET	DAYLIGHT	REAR END
04-1087-AC	12/23/2004	CODDINGTON HW	SHERMAN LN	2	0	0	RAIN	WET	DARK (LIGHTED)	ANGLE
05-429-AC	5/23/2005	CODDINGTON HW	SHERMAN LN	2	0	0	CLOUDY	DRY	DAYLIGHT	BROADSIDE
05-578-AC	7/2/2005	CODDINGTON HW	SHERMAN LN	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
05-325-AC	4/15/2005	CODDINGTON HW	GATE 10	2	0	0	NO ADVERSE	DRY	DAYLIGHT	SIDESWIPE - SD



**WEST MAIN ROAD (ROUTE 114) AND STRINGHAM ROAD**

Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
03-RIK1-3-AC	1/12/2003	W MAIN RD	STRINGHAM RD	2	1	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
03-31-AC	1/22/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	BROADSIDE
03-119-AC	3/6/2003	W MAIN RD	STRINGHAM RD	2	0	0	SNOW	SNOW/SLUSH	DAYLIGHT	ANGLE
03-120-AC	3/6/2003	W MAIN RD	STRINGHAM RD	2	0	0	SNOW	SNOW/SLUSH	DAYLIGHT	SIDESWIPE - SD
03-132-AC	3/18/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
03-172-AC	4/22/2003	W MAIN RD	STRINGHAM RD	2	0	0	RAIN	WET	DAYLIGHT	REAR END
03-209-AC	5/20/2003	W MAIN RD	STRINGHAM RD	3	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
03-242-AC	6/11/2003	W MAIN RD	STRINGHAM RD	2	0	0	CLOUDY	DRY	DAYLIGHT	REAR END
03-252-AC	6/18/2003	W MAIN RD	STRINGHAM RD	2	0	0	RAIN	WET	DAYLIGHT	REAR END
03-262-AC	6/22/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
03-285-AC	7/1/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
03-378-AC	8/14/2003	W MAIN RD	STRINGHAM RD	4	1	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
03-457-AC	9/15/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
03-478-AC	9/29/2003	W MAIN RD	STRINGHAM RD	2	1	0	NO ADVERSE	DRY	DAYLIGHT	BROADSIDE
03-486-AC	10/2/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
03-500-AC	10/8/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	RAN OFF ROAD
03-525-AC	10/23/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DARK (LIGHTED)	ANGLE
03-527-AC	10/25/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
03-555-AC	11/8/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	SIDESWIPE - SD
03-72-AC	2/10/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
03-84-AC	2/15/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	SIDESWIPE - SD
04-32-AC	1/24/2004	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DARK (LIGHTED)	REAR END
04-70-AC	2/13/2004	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
04-74-AC	2/17/2004	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAWN	ANGLE
04-92-AC	2/25/2004	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
04-209-AC	5/7/2004	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
04-345-AC	7/10/2004	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
04-421-AC	8/11/2004	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
04-447-AC	8/24/2004	W MAIN RD	STRINGHAM RD	2	2	0	NO ADVERSE	DRY	DARK (LIGHTED)	REAR END
04-451-AC	8/25/2004	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	SIDESWIPE - SD
04-497-AC	9/13/2004	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
04-507-AC	9/16/2004	W MAIN RD	STRINGHAM RD	3	1	0	RAIN	WET	DAYLIGHT	REAR END
04-513-AC	9/20/2004	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
04-540-AC	10/1/2004	STRINGHAM RD	W MAIN RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	SIDESWIPE - SD
04-661-AC	12/10/2004	W MAIN RD	STRINGHAM RD	2	0	0	RAIN	WET	DAYLIGHT	RAN OFF ROAD
04-706-AC	12/27/2004	STRINGHAM RD	W MAIN RD	2	0	0	SNOW	SNOW/SLUSH	DAYLIGHT	ANGLE



WEST MAIN ROAD (ROUTE 114) AND STRINGHAM ROAD

Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
05-13-AC	1/9/2005	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
05-63-AC	2/1/2005	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
05-200-AC	4/16/2005	W MAIN RD	STRINGHAM RD	2	1	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
05-215-AC	5/1/2005	W MAIN RD	STRINGHAM RD	3	2	0	CLOUDY	WET	DAYLIGHT	REAR END
05-247-AC	5/28/2005	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
05-306-AC	6/22/2005	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
05-538-AC	10/27/2005	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
05-350-AC	7/12/2005	W MAIN RD	STRINGHAM RD	2	1	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
05-388-AC	7/29/2005	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	BROADSIDE
05-389-AC	7/31/2005	W MAIN RD	STRINGHAM RD	2	0	0	CLOUDY	DRY	DAYLIGHT	REAR END
05-390-AC	7/31/2005	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	BROADSIDE
05-397-AC	8/2/2005	STRINGHAM RD	W MAIN RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
05-516-AC	10/15/2005	W MAIN RD	STRINGHAM RD	2	0	0	RAIN	WET	DAYLIGHT	REAR END
05-557-AC	11/5/2005	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DUSK	ANGLE
06-493-AC	10/24/2006	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
06-295-AC	7/1/2006	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	SIDESWIPE - OD
06-205-AC	5/20/2006	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
06-279-AC	6/24/2006	W MAIN RD	STRINGHAM RD	2	0	0	RAIN	WET	DAYLIGHT	BROADSIDE
06-446-AC	9/20/2006	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
06-152-AC	4/12/2006	W MAIN RD	STRINGHAM RD	2	1	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
06-169-AC	4/23/2006	W MAIN RD	STRINGHAM RD	2	0	0	CLOUDY	DRY	DAYLIGHT	REAR END
06-186-AC	5/8/2006	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
06-230-AC	6/1/2006	W MAIN RD	STRINGHAM RD	2	1	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
06-296-AC	7/2/2006	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DARK (LIGHTED)	SIDESWIPE - OD
06-368-AC	7/31/2006	W MAIN RD	STRINGHAM RD	2	1	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
06-418-AC	9/2/2006	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
07-21-AC	1/17/2007	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END



**STRINGHAM ROAD AND BURMA ROAD**

Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
04-596-AC	11/4/2004	BURMA RD	STRINGHAM RD	1	0	0	NO ADVERSE	DRY	DAYLIGHT	LOSS OF CONTROL
04-712-AC	12/28/2004	BURMA RD	STRINGHAM RD	1	0	0	NO ADVERSE	SNOW/SLUSH	DAYLIGHT	LOSS OF CONTROL
04-358-AC	7/15/2004	STRINGHAM RD	BURMA RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
04-79-AC	2/19/2004	STRINGHAM RD	BURMA RD	2	1	0	NO ADVERSE	ICE	DAYLIGHT	LOSS OF CONTROL
05-230-AC	5/13/2005	BURMA RD	STRINGHAM RD	2	1	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
05-399-AC	8/3/2005	BURMA RD	STRINGHAM RD	2	0	0	NO ADVERSE	WET	DAYLIGHT	SIDESWIPE - OD

**STRINGHAM ROAD AND WORDEN STREET**

Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
05-355-AC	7/13/2005	STRINGHAM RD	WORDEN ST	2	0	0	NO ADVERSE	DRY	DAYLIGHT	BROADSIDE

**BURMA ROAD AND WEAVER COVE BOAT RAMP**

Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
06-521-AC	11/9/2006	BURMA RD	WEAVER COVE BOAT RAMP	1	0	0	NO ADVERSE	DRY	DARK (NL)	HEAD ON (DEER)

**STRINGHAM ROAD AND STEVENS ROAD**

Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
04-80-AC	2/19/2004	STRINGHAM RD	STEVENS RD	1	0	0	NO ADVERSE	ICE	DAYLIGHT	LOSS OF CONTROL
06-245-AC	6/8/2006	STRINGHAM RD	STEVENS RD	3	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END

**STRINGHAM ROAD AND SULLIVAN ROAD**

Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
06-239-AC	6/6/2006	STRINGHAM RD	SULLIVAN RD	1	0	0	NO ADVERSE	DRY	DAYLIGHT	HEAD ON (DEER)
06-49-AC	2/9/2006	SULLIVAN RD	STRINGHAM RD	1	1	0	NO ADVERSE	DRY	DAYLIGHT	RAN OFF ROAD

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## Appendix B

*Crash Data*





2003			
Intersection	No. of Crashes	No. of Crashes w/Injury	No. of Crashes w/Fatality
Coddington Highway & Sherman Lane	5	1	0
West Main Road (RT 114) & Stringham Road	21	3	0
<b>TOTAL</b>	<b>26</b>	<b>4</b>	<b>0</b>

2004			
Intersection	No. of Crashes	No. of Crashes w/Injury	No. of Crashes w/Fatality
Coddington Highway & Sherman Lane	2	0	0
West Main Road (RT 114) & Stringham Road	15	2	0
Stringham Road and Defense Highway (Burma Rd)	4	1	0
Stringham Road and Stevens Road	1	0	0
<b>TOTAL</b>	<b>22</b>	<b>3</b>	<b>0</b>

2005			
Intersection	No. of Crashes	No. of Crashes w/Injury	No. of Crashes w/Fatality
Coddington Highway & Sherman Lane	3	0	0
West Main Road (RT 114) & Stringham Road	14	3	0
Stringham Road and Defense Highway (Burma Rd)	2	1	0
Stringham Road and Worden Street	1	0	0
<b>TOTAL</b>	<b>20</b>	<b>4</b>	<b>0</b>

2006			
Intersection	No. of Crashes	No. of Crashes w/Injury	No. of Crashes w/Fatality
West Main Road (RT 114) & Stringham Road	12	3	0
Stringham Road and Stevens Road	1	0	0
Stringham Road and Sullivan Road	2	1	0
<b>TOTAL</b>	<b>15</b>	<b>4</b>	<b>0</b>

2007			
Intersection	No. of Crashes	No. of Crashes w/Injury	No. of Crashes w/Fatality
West Main Road (RT 114) & Stringham Road	1	0	0
<b>TOTAL</b>	<b>1</b>	<b>0</b>	<b>0</b>

Shoreline Drive Gateway  
 Accident Data Summary  
 Pare Project No. 06218.00  
 February 2007



2003									
Intersection	Rear End	Angle	Broadside	Sideswipe - Same Direction	Sideswipe - Opp. Direction	Loss of Control	Object	Ran Off Road	
Coddington Highway & Sherman Lane	2	1	1	1	0	0	0	0	0
West Main Road (RT 114) & Stringham Road	10	5	2	3	0	0	0	0	1
<b>TOTAL</b>	<b>12</b>	<b>6</b>	<b>3</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>

2004									
Intersection	Rear End	Angle	Broadside	Sideswipe - Same Direction	Sideswipe - Opp. Direction	Loss of Control	Object	Ran Off Road	
Coddington Highway & Sherman Lane	1	1	0	0	0	0	0	0	0
West Main Road (RT 114) & Stringham Road	9	3	0	2	0	0	0	0	1
Stringham Road and Defense Highway (Burma Rd)	0	1	0	0	0	3	0	0	0
Stringham Road and Stevens Road	0	0	0	0	0	1	0	0	0
<b>TOTAL</b>	<b>10</b>	<b>5</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>1</b>

2005									
Intersection	Rear End	Angle	Broadside	Sideswipe - Same Direction	Sideswipe - Opp. Direction	Loss of Control	Object	Ran Off Road	
Coddington Highway & Sherman Lane	1	0	1	1	0	0	0	0	0
West Main Road (RT 114) & Stringham Road	8	4	2	0	0	0	0	0	0
Stringham Road and Defense Highway (Burma Rd)	0	1	0	0	1	0	0	0	0
Stringham Road and Worden Street	0	0	1	0	0	0	0	0	0
<b>TOTAL</b>	<b>9</b>	<b>5</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

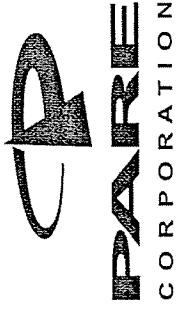




Middletown Accident Report Summary  
 Pare Project No. 06218.00  
 December 19, 2006

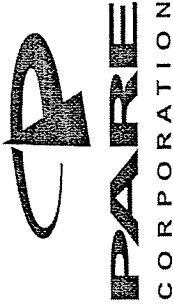
**CODDINGTON HIGHWAY AND SHERMAN LANE**

Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
03-1057-AC	10/2/2003	CODDINGTON HW	SHERMAN LN	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
03-224-AC	3/6/2003	CODDINGTON HW	SHERMAN LN	2	0	0	UNK	SNOW/SLUSH	DAYLIGHT	BROADSIDE
03-238-AC	3/7/2003	CODDINGTON HW	SHERMAN LN	5	3	0	UNK	SNOW/SLUSH	DAYLIGHT	REAR END
03-828-AC	8/7/2003	CODDINGTON HW	SHERMAN LN	2	0	0	NO ADVERSE	DRY	DAYLIGHT	SIDESWIPE - SD
03-879-AC	8/18/2003	CODDINGTON HW	SHERMAN LN	2	0	0	NO ADVERSE	WET	DAYLIGHT	ANGLE
04-641-AC	7/28/2004	CODDINGTON HW	SHERMAN LN	2	0	0	NO ADVERSE	WET	DAYLIGHT	REAR END
04-1087-AC	12/23/2004	CODDINGTON HW	SHERMAN LN	2	0	0	RAIN	WET	DARK (LIGHTED)	ANGLE
05-429-AC	5/23/2005	CODDINGTON HW	SHERMAN LN	2	0	0	CLOUDY	DRY	DAYLIGHT	BROADSIDE
05-578-AC	7/2/2005	CODDINGTON HW	SHERMAN LN	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
05-325-AC	4/15/2005	CODDINGTON HW	GATE 10	2	0	0	NO ADVERSE	DRY	DAYLIGHT	SIDESWIPE - SD



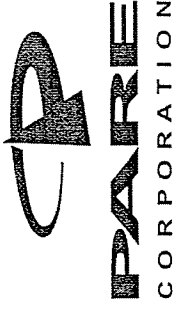
**WEST MAIN ROAD (ROUTE 114) AND STRINGHAM ROAD**

Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
03-RIK1-3-AC	1/12/2003	W MAIN RD	STRINGHAM RD	2	1	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
03-31-AC	1/22/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	BROADSIDE
03-119-AC	3/6/2003	W MAIN RD	STRINGHAM RD	2	0	0	SNOW	SNOW/SLUSH	DAYLIGHT	ANGLE
03-120-AC	3/6/2003	W MAIN RD	STRINGHAM RD	2	0	0	SNOW	SNOW/SLUSH	DAYLIGHT	SIDESWIPE - SD
03-132-AC	3/18/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
03-172-AC	4/22/2003	W MAIN RD	STRINGHAM RD	2	0	0	RAIN	WET	DAYLIGHT	REAR END
03-209-AC	5/20/2003	W MAIN RD	STRINGHAM RD	3	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
03-242-AC	6/11/2003	W MAIN RD	STRINGHAM RD	2	0	0	CLOUDY	DRY	DAYLIGHT	REAR END
03-252-AC	6/18/2003	W MAIN RD	STRINGHAM RD	2	0	0	RAIN	WET	DAYLIGHT	REAR END
03-262-AC	6/22/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
03-285-AC	7/1/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
03-378-AC	8/14/2003	W MAIN RD	STRINGHAM RD	4	1	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
03-457-AC	9/15/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
03-478-AC	9/29/2003	W MAIN RD	STRINGHAM RD	2	1	0	NO ADVERSE	DRY	DAYLIGHT	BROADSIDE
03-486-AC	10/2/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
03-500-AC	10/8/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	RAN OFF ROAD
03-525-AC	10/23/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DARK (LIGHTED)	ANGLE
03-527-AC	10/25/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
03-555-AC	11/8/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	SIDESWIPE - SD
03-72-AC	2/10/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
03-84-AC	2/15/2003	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	SIDESWIPE - SD
04-32-AC	1/24/2004	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DARK (LIGHTED)	REAR END
04-70-AC	2/13/2004	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
04-74-AC	2/17/2004	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAWN	ANGLE
04-92-AC	2/25/2004	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
04-209-AC	5/7/2004	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
04-345-AC	7/10/2004	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
04-421-AC	8/11/2004	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
04-447-AC	8/24/2004	W MAIN RD	STRINGHAM RD	2	2	0	NO ADVERSE	DRY	DARK (LIGHTED)	REAR END
04-451-AC	8/25/2004	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	SIDESWIPE - SD
04-497-AC	9/13/2004	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
04-507-AC	9/16/2004	W MAIN RD	STRINGHAM RD	3	1	0	RAIN	WET	DAYLIGHT	REAR END
04-513-AC	9/20/2004	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
04-540-AC	10/1/2004	STRINGHAM RD	W MAIN RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	SIDESWIPE - SD
04-661-AC	12/10/2004	W MAIN RD	STRINGHAM RD	2	0	0	RAIN	WET	DAYLIGHT	RAN OFF ROAD
04-706-AC	12/27/2004	STRINGHAM RD	W MAIN RD	2	0	0	SNOW	SNOW/SLUSH	DAYLIGHT	ANGLE



**WEST MAIN ROAD (ROUTE 114) AND STRINGHAM ROAD**

Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
05-13-AC	1/9/2005	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
05-63-AC	2/1/2005	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
05-200-AC	4/16/2005	W MAIN RD	STRINGHAM RD	2	1	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
05-215-AC	5/1/2005	W MAIN RD	STRINGHAM RD	3	2	0	CLOUDY	WET	DAYLIGHT	REAR END
05-247-AC	5/28/2005	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
05-306-AC	6/22/2005	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
05-538-AC	10/27/2005	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
05-350-AC	7/12/2005	W MAIN RD	STRINGHAM RD	2	1	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
05-388-AC	7/29/2005	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	BROADSIDE
05-389-AC	7/31/2005	W MAIN RD	STRINGHAM RD	2	0	0	CLOUDY	DRY	DAYLIGHT	REAR END
05-390-AC	7/31/2005	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	BROADSIDE
05-397-AC	8/2/2005	STRINGHAM RD	W MAIN RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
05-516-AC	10/15/2005	W MAIN RD	STRINGHAM RD	2	0	0	RAIN	WET	DAYLIGHT	REAR END
05-557-AC	11/5/2005	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DUSK	ANGLE
06-493-AC	10/24/2006	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
06-295-AC	7/1/2006	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	SIDESWIPE - OD
06-205-AC	5/20/2006	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
06-279-AC	6/24/2006	W MAIN RD	STRINGHAM RD	2	0	0	RAIN	WET	DAYLIGHT	BROADSIDE
06-446-AC	9/20/2006	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
06-152-AC	4/12/2006	W MAIN RD	STRINGHAM RD	2	1	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
06-169-AC	4/23/2006	W MAIN RD	STRINGHAM RD	2	0	0	CLOUDY	DRY	DAYLIGHT	REAR END
06-186-AC	5/8/2006	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
06-230-AC	6/1/2006	W MAIN RD	STRINGHAM RD	2	1	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
06-296-AC	7/2/2006	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
06-368-AC	7/31/2006	W MAIN RD	STRINGHAM RD	2	1	0	NO ADVERSE	DRY	DARK (LIGHTED)	SIDESWIPE - OD
06-418-AC	9/2/2006	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
07-21-AC	1/17/2007	W MAIN RD	STRINGHAM RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END



**STRINGHAM ROAD AND BURMA ROAD**

Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
04-596-AC	11/4/2004	BURMA RD	STRINGHAM RD	1	0	0	NO ADVERSE	DRY	DAYLIGHT	LOSS OF CONTROL
04-712-AC	12/28/2004	BURMA RD	STRINGHAM RD	1	0	0	NO ADVERSE	SNOW/SLUSH	DAYLIGHT	LOSS OF CONTROL
04-358-AC	7/15/2004	STRINGHAM RD	BURMA RD	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
04-79-AC	2/19/2004	STRINGHAM RD	BURMA RD	2	1	0	NO ADVERSE	ICE	DAYLIGHT	LOSS OF CONTROL
05-230-AC	5/13/2005	BURMA RD	STRINGHAM RD	2	1	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
05-399-AC	8/3/2005	BURMA RD	STRINGHAM RD	2	0	0	NO ADVERSE	WET	DAYLIGHT	SIDESWIPE - OD

**STRINGHAM ROAD AND WORDEN STREET**

Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
05-355-AC	7/13/2005	STRINGHAM RD	WORDEN ST	2	0	0	NO ADVERSE	DRY	DAYLIGHT	BROADSIDE

**BURMA ROAD AND WEAVER COVE BOAT RAMP**

Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
06-521-AC	11/9/2006	BURMA RD	WEAVER COVE BOAT RAMP	1	0	0	NO ADVERSE	DRY	DARK (NL)	HEAD ON (DEER)

**STRINGHAM ROAD AND STEVENS ROAD**

Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
04-80-AC	2/19/2004	STRINGHAM RD	STEVENS RD	1	0	0	NO ADVERSE	ICE	DAYLIGHT	LOSS OF CONTROL
06-245-AC	6/8/2006	STRINGHAM RD	STEVENS RD	3	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END

**STRINGHAM ROAD AND SULLIVAN ROAD**

Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
06-239-AC	6/6/2006	STRINGHAM RD	SULLIVAN RD	1	0	0	NO ADVERSE	DRY	DAYLIGHT	HEAD ON (DEER)
06-49-AC	2/9/2006	SULLIVAN RD	STRINGHAM RD	1	1	0	NO ADVERSE	DRY	DAYLIGHT	RAN OFF ROAD













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## Appendix C

### *Opinion of Probable Construction Cost*





	Approx. Length of New Roadway	Approx. Roadway Cost	Approx. Roundabout Cost	Approx. Demolition & Hardening Cost *	Approx. Emergency Access Road Cost *	Removal of Existing Roadway	Subtotal	Misc. Costs & Contingency (30%)	Total, 2007 Dollars	Projected Cost with 5 Years Inflation at 4% per year
<b>South Gateway - Simonpietri Drive</b>										
Conceptual Improvement										
Low Range		\$ 2,153,027	\$ 104,584	\$ 12,000,000	\$ 1,000,000	\$ 117,500	\$ 15,375,111	\$ 4,612,534	\$ 19,987,645	\$ 24,384,927
High Range		\$ 2,153,027	\$ 104,584	\$ 15,000,000	\$ 2,000,000	\$ 117,500	\$ 19,375,111	\$ 5,812,534	\$ 25,187,645	\$ 30,728,927
* Further coordination with Navy required to generate detailed costs.										
<b>North Gateway - Shoreline Drive/Stringham</b>										
Alternative 1 - Upper "T"	1470 LF	\$ 1,454,097	\$ -	N/A	N/A	\$ 107,360	\$ 1,561,457	\$ 468,438	\$ 2,029,895	\$ 2,476,472
Alternative 2 - Mid-Slope Roundabout	1550 LF	\$ 611,331	\$ 99,781	N/A	N/A	\$ 72,350	\$ 783,462	\$ 235,039	\$ 1,018,501	\$ 1,242,572
Alternative 3 - Mid-Slope "T"	1550 LF	\$ 591,331	\$ -	N/A	N/A	\$ 72,350	\$ 663,681	\$ 199,105	\$ 862,786	\$ 1,052,599
<b>Recommended Improvement: Alternative 4 - Lower Roundabout</b>										
	3880 LF	\$ 1,839,871	\$ 106,127	N/A	N/A	\$ 140,008	\$ 2,086,006	\$ 625,802	\$ 2,711,808	\$ 3,308,406

Shoreline Drive Gateway  
 Opinion of Probable Construction Cost  
 Removal of Existing Roadway



Simonpietri Drive - Remove Appx. 5400 LF Flexible Pavement

201.0409	Remove and Dispose Flexible Pavement	SY	\$ 5.00	18000.00	\$ 90,000
L01.0104	Plantable Soil 4 Inches Deep	SY	\$ 3.75	5000.00	\$ 18,750
L02.0102	Residential Seeding (Type 2)	SY	\$ 1.75	5000.00	\$ 8,750

TOTAL \$ 117,500

Stringham Road C1 - Remove Appx. 2300 LF

201.0409	Remove and Dispose Flexible Pavement	SY	\$ 5.00	10223.00	\$ 51,120
L01.0104	Plantable Soil 4 Inches Deep	SY	\$ 3.75	10223.00	\$ 38,340
L02.0102	Residential Seeding (Type 2)	SY	\$ 1.75	10223.00	\$ 17,900

TOTAL \$ 107,360

Stringham Road C2 - Remove Appx. 1550 LF

201.0409	Remove and Dispose Flexible Pavement	SY	\$ 5.00	6889.00	\$ 34,450
L01.0104	Plantable Soil 4 Inches Deep	SY	\$ 3.75	6889.00	\$ 25,840
L02.0102	Residential Seeding (Type 2)	SY	\$ 1.75	6889.00	\$ 12,060

TOTAL \$ 72,350

Stringham Road C3 - Remove Appx. 1550 LF

201.0409	Remove and Dispose Flexible Pavement	SY	\$ 5.00	6889.00	\$ 34,450
L01.0104	Plantable Soil 4 Inches Deep	SY	\$ 3.75	6889.00	\$ 25,840
L02.0102	Residential Seeding (Type 2)	SY	\$ 1.75	6889.00	\$ 12,060

TOTAL \$ 72,350

Stringham Road C4 - Remove Appx 3000 LF

201.0409	Remove and Dispose Flexible Pavement	SY	\$ 5.00	13334.00	\$ 66,670
L01.0104	Plantable Soil 4 Inches Deep	SY	\$ 3.75	13334.00	\$ 50,003
L02.0102	Residential Seeding (Type 2)	SY	\$ 1.75	13334.00	\$ 23,335

TOTAL \$ 140,008

Shoreline Drive Gateway  
Opinion of Probable Cost

**Proposed Shoreline Drive Dimensions**

Roadway Width 32 LF  
Sidewalk Width 5 LF  
Roadway Length 1245 LF



**Proposed Stringham Rd Dimensions**

Roadway Width 28 LF  
Roadway Length 225 LF  
Sidewalk Width 5 LF

Stringham Road Concept 1

ITEM NO.	DESCRIPTION	UNIT	UNIT PRICE	STRINGHAM RD QTY	SHORELINE DR QTY	TOTAL COST
201.0321	Clearing and Grubbing	SY	\$ 3.00	825	5119	\$ 17,840
202.0100	Earth Excavation	CY	\$ 9.00	825	5119	\$ 53,500
202.0700	Common Borrow	CY	\$ 25.00	250	1384	\$ 40,850
302.0100	Gravel Borrow Subbase Course	CY	\$ 25.00	262	1630	\$ 47,300
401.0100	Bituminous Base Course	TON	\$ 70.00	202	1273	\$ 103,250
401.0200	Bituminous Surface Course Type I-1	TON	\$ 70.00	81	510	\$ 41,370
403.0300	Asphalt Emulsion Tack Coat	SY	\$ 0.25	1400	8854	\$ 2,564
701.9901	Drainage Improvements	LS	\$ 90,000.00	0	1	\$ 90,000
901.0101	Guardrail Steel Beam Single Face Earth and Asphalt	LF	\$ 25.00	225	1,245	\$ 36,750
905.0110	Portland Cement Sidewalk Monolithic Standard 43.1.0	CY	\$ 300.00	14	77	\$ 27,300
906.0210	Cement Concrete Curb Precast Straight, Standard 7.1.0	LF	\$ 30.00	450	2,490	\$ 88,200
911.0104	Wet Stone Masonry Wall	CY	\$ 400.00	0	2,200	\$ 880,000
L01.0104	Plantable Soil 4 Inches Deep	SY	\$ 3.75	500	2767	\$ 12,251
L02.0102	Residential Seeding (Type 2)	SY	\$ 1.75	500	2767	\$ 5,717
L02.9901	General Landscaping	LS	\$ 5,000.00	0	1	\$ 5,000
T20.2006	6"Epoxy Resin Pavement Markings White	LF	\$ 0.40	450	2,490	\$ 1,176
T20.2016	6"Epoxy Resin Pavement Markings Yellow	LF	\$ 0.35	450	2,490	\$ 1,029

TOTAL \$ 1,454,097

Shoreline Drive Gateway  
Opinion of Probable Cost

**Proposed Shoreline Drive Dimensions**

Roadway Width	32	LF
Sidewalk Width	5	LF
Roadway Length	900	LF



**Proposed Stringham Rd Dimensions**

Roadway Width	28	LF
Roadway Length	650	LF
Sidewalk Width	5	LF

Stringham Road Concept 2  
New Roadway Alignment

ITEM NO.	DESCRIPTION	UNIT	UNIT PRICE	STRINGHAM RD QTY	SHORELINE DR QTY	TOTAL COST
201.0321	Clearing and Grubbing	SY	\$ 3.00	2384	3700	\$ 18,252
202.0100	Earth Excavation	CY	\$ 9.00	2384	3700	\$ 54,756
202.0700	Common Borrow	CY	\$ 25.00	723	1000	\$ 43,075
302.0100	Gravel Borrow Subbase Course	CY	\$ 25.00	754	1178	\$ 48,303
401.0100	Bituminous Base Course	TON	\$ 70.00	582	920	\$ 105,140
401.0200	Bituminous Surface Course Type I-1	TON	\$ 70.00	233	368	\$ 42,070
403.0300	Asphalt Emulsion Tack Coat	SY	\$ 0.25	4045	6400	\$ 2,612
701.9901	Drainage Improvements	LS	\$ 90,000.00	0	1	\$ 90,000
901.0101	Guardrail Steel Beam Single Face Earth and Asphalt	LF	\$ 25.00	650	900	\$ 38,750
905.0110	Portland Cement Sidewalk Monolithic Standard 43.1.0	CY	\$ 300.00	41	56	\$ 29,100
906.0210	Cement Concrete Curb Precast Straight, Standard 7.1.0	LF	\$ 30.00	1300	1800	\$ 93,000
L01.0104	Plantable Soil 4 Inches Deep	SY	\$ 3.75	1445	2000	\$ 12,919
L02.0102	Residential Seeding (Type 2)	SY	\$ 1.75	1445	2000	\$ 6,029
L02.9901	General Landscaping	LS	\$ 25,000.00	0	1	\$ 25,000
T20.2006	6"Epoxy Resin Pavement Markings White	LF	\$ 0.40	1300	1800	\$ 1,240
T20.2016	6"Epoxy Resin Pavement Markings Yellow	LF	\$ 0.35	1300	1800	\$ 1,085

**TOTAL \$ 611,331**

130' Roundabout - 3 leg roundabout

ITEM NO.	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL COST
201.0321	Clearing and Grubbing	SY	\$ 3.00	648	\$ 1,944.00
202.0100	Earth Excavation	CY	\$ 9.00	648	\$ 5,832.00
202.0700	Common Borrow	CY	\$ 25.00	432	\$ 10,800.00
302.0100	Gravel Borrow Subbase Course	CY	\$ 25.00	492	\$ 12,300.00
401.0100	Bituminous Base Course	TON	\$ 70.00	287	\$ 20,090.00
401.0200	Bituminous Surface Course Type I-1	TON	\$ 70.00	115	\$ 8,050.00
403.0300	Asphalt Emulsion Tack Coat	SY	\$ 0.25	1995	\$ 499.00
901.0101	Guardrail Steel Beam Single Face Earth and Asphalt	LF	\$ 25.00	65	\$ 1,625.00
905.0110	Portland Cement Sidewalk Monolithic Standard 43.1.0	CY	\$ 300.00	25	\$ 7,500.00
906.0210	Cement Concrete Curb Precast Straight, Standard 7.1.0	LF	\$ 30.00	1000	\$ 30,000.00
L01.0104	Plantable Soil 4 Inches Deep	SY	\$ 3.75	139	\$ 522.00
L02.0102	Residential Seeding (Type 2)	SY	\$ 1.75	139	\$ 244.00
T20.2006	6"Epoxy Resin Pavement Markings White	LF	\$ 0.40	500	\$ 200.00
T20.2016	6"Epoxy Resin Pavement Markings Yellow	LF	\$ 0.35	500	\$ 175.00

**Total Roundabout Cost \$ 99,781.00**

Shoreline Drive Gateway  
Opinion of Probable Cost

**Proposed Shoreline Drive Dimensions**  
**Roadway Width** 32 LF  
**Sidewalk Width** 5 LF  
**Roadway Length** 900 LF



**Proposed Stringham Rd Dimensions**  
**Roadway Width** 28 LF  
**Roadway Length** 650 LF  
**Sidewalk Width** 5 LF

Stringham Road Concept 3  
New Roadway Alignment

ITEM NO.	DESCRIPTION	UNIT	UNIT PRICE	STRINGHAM RD QTY	SHORELINE DR QTY	TOTAL COST
201.0321	Clearing and Grubbing	SY	\$ 3.00	2384	3700	\$ 18,252
202.0100	Earth Excavation	CY	\$ 9.00	2384	3700	\$ 54,756
202.0700	Common Borrow	CY	\$ 25.00	723	1000	\$ 43,075
302.0100	Gravel Borrow Subbase Course	CY	\$ 25.00	754	1178	\$ 48,303
401.0100	Bituminous Base Course	TON	\$ 70.00	582	920	\$ 105,140
401.0200	Bituminous Surface Course Type I-1	TON	\$ 70.00	233	368	\$ 42,070
403.0300	Asphalt Emulsion Tack Coat	SY	\$ 0.25	4045	6400	\$ 2,612
701.9901	Drainage Improvements	LS	\$ 90,000.00	0	1	\$ 90,000
901.0101	Guardrail Steel Beam Single Face Earth and Asphalt	LF	\$ 25.00	650	900	\$ 38,750
905.0110	Portland Cement Sidewalk Monolithic Standard 43.1.0	CY	\$ 300.00	41	56	\$ 29,100
906.0210	Cement Concrete Curb Precast Straight, Standard 7.1.0	LF	\$ 30.00	1300	1800	\$ 93,000
L01.0104	Plantable Soil 4 Inches Deep	SY	\$ 3.75	1445	2000	\$ 12,919
L02.0102	Residential Seeding (Type 2)	SY	\$ 1.75	1445	2000	\$ 6,029
L02.9901	General Landscaping	LS	\$ 5,000.00	0	1	\$ 5,000
T20.2006	6"Epoxy Resin Pavement Markings White	LF	\$ 0.40	1300	1800	\$ 1,240
T20.2016	6"Epoxy Resin Pavement Markings Yellow	LF	\$ 0.35	1300	1800	\$ 1,085

**TOTAL \$ 591,331**

Shoreline Drive Gateway  
Opinion of Probable Cost

**Proposed Shoreline Drive Dimensions**

Roadway Width	32	LF
Roadway Length	3230	LF
Sidewalk Width	5	LF
Shared Use Path	10	LF



**Proposed Stringham Road Dimensions**

Roadway Width	28	LF
Roadway Length	650	LF
Sidewalk Width	5	LF

Stringham Road Concept 4  
New Roadway Alignment

ITEM NO.	DESCRIPTION	UNIT	UNIT PRICE	STRINGHAM RD QTY	SHORELINE DR QTY	TOTAL COST
201.0321	Clearing and Grubbing	SY	\$ 3.00	2383	21533	\$ 71,750
202.0100	Earth Excavation	CY	\$ 9.00	2383	21534	\$ 215,256
202.0700	Common Borrow	CY	\$ 25.00	722	3589	\$ 107,778
302.0100	Gravel Borrow Subbase Course	CY	\$ 25.00	754	5423	\$ 154,439
401.0100	Bituminous Base Course	TON	\$ 70.00	581	3302	\$ 271,822
401.0200	Bituminous Surface Course Type I-1	TON	\$ 70.00	233	1733	\$ 137,619
401.0300	Bituminous Surface Course Type I-2	TON	\$ 90.00	0	413	\$ 37,145
403.0300	Asphalt Emulsion Tack Coat	SY	\$ 0.25	4044	30147	\$ 8,548
701.9901	Drainage Improvements	LS	\$ 220,000.00	0	1	\$ 220,000
901.0101	Guardrail Steel Beam Single Face Earth and Asphalt	LF	\$ 25.00	1300	3230	\$ 113,250
905.0110	Portland Cement Sidewalk Monolithic Standard 43.1.0	CY	\$ 300.00	40	199	\$ 71,852
906.0210	Cement Concrete Curb Precast Straight, Standard 7.1.0	LF	\$ 30.00	1300	6460	\$ 232,800
911.0104	Wet Stone Masonry Wall	CY	\$ 400.00	0	415	\$ 166,000
L01.0104	Plantable Soil 4 Inches Deep	SY	\$ 3.75	24	120	\$ 539
L02.0102	Residential Seeding (Type 2)	SY	\$ 1.75	24	120	\$ 252
L02.9901	General Landscaping	LS	\$ 25,000.00	0	1	\$ 25,000
T20.2006	6"Epoxy Resin Pavement Markings White	LF	\$ 0.40	1300	6460	\$ 3,104
T20.2016	6"Epoxy Resin Pavement Markings Yellow	LF	\$ 0.35	1300	6460	\$ 2,716

**TOTAL \$ 1,839,871**

130' Roundabout - 4 leg roundabout

ITEM NO.	DESCRIPTION	UNIT	UNIT PRICE		
201.0321	Clearing and Grubbing	SY	\$ 3.00	648	\$ 1,944.00
202.0100	Earth Excavation	CY	\$ 9.00	648	\$ 5,832.00
202.0700	Common Borrow	CY	\$ 25.00	432	\$ 10,800.00
302.0100	Gravel Borrow Subbase Course	CY	\$ 25.00	492	\$ 12,300.00
401.0100	Bituminous Base Course	TON	\$ 70.00	287	\$ 20,090.00
401.0200	Bituminous Surface Course Type I-1	TON	\$ 70.00	115	\$ 8,050.00
403.0300	Asphalt Emulsion Tack Coat	SY	\$ 0.25	1995	\$ 499.00
901.0101	Guardrail Steel Beam Single Face Earth and Asphalt	LF	\$ 25.00	65	\$ 1,625.00
905.0110	Portland Cement Sidewalk Monolithic Standard 43.1.0	CY	\$ 300.00	34	\$ 10,200.00
906.0210	Cement Concrete Curb Precast Straight, Standard 7.1.0	LF	\$ 30.00	1120	\$ 33,600.00
L01.0104	Plantable Soil 4 Inches Deep	SY	\$ 3.75	139	\$ 522.00
L02.0102	Residential Seeding (Type 2)	SY	\$ 1.75	139	\$ 244.00
T20.2006	6"Epoxy Resin Pavement Markings White	LF	\$ 0.40	530	\$ 212.00
T20.2016	6"Epoxy Resin Pavement Markings Yellow	LF	\$ 0.35	595	\$ 209.00

**Total Roundabout Cost \$ 106,127.00**

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## Appendix D

*Preliminary Design*





PROJECT NO.:	06218.00
DATE:	MAY 2007
SCALE:	AS NOTED
DESIGNED BY:	
CHECKED BY:	
DRAWN BY:	
APPROVED BY:	
DRAWING TITLE:	CONCEPTUAL SITE PLAN STRINGHAM ROAD
DRAWING NO.:	C1.0
SHEET NO.:	OF

