**Comments Submitted by the Town of East Haven on The Draft Environmental Assessment for Tweed New Haven Airport Regarding The Proposed Extension of Runway 02-20 and Construction of a New Enlarged Airport Terminal and Associated Facilities**

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## Introduction

## Background on the Town and the Town's Interests

These comments are submitted by the Town of East Haven Connecticut ("the Town") with regard to the draft Environmental Assessment for the proposed Runway 02-20 Extension and Terminal Relocation and Expansion project at Tweed New Haven Airport (the "Draft EA" or "EA").

The Town is home to over 27,000 residents. It is a small tightly knit shoreline community blessed with a beautiful Town Beach and community green where folks gather and community cohesion is fostered.

The Town is considered a "Distressed Municipality" by the State of Connecticut (the "State") which utilizes a formula looking at "high unemployment and poverty, aging housing stock and low or declining rates of growth in job creation, population, and per capita income" per Connecticut General Statutes Section 32-9p. As a Distressed Municipality, the Town is automatically considered an "Environmental Justice Community" by the State and entitled to special protections.

People living, working and visiting in the Town are already negatively affected by the rapid and unexpected increase in aircraft operations at Tweed New Haven Airport (the "Airport"). The area surrounding the Airport is primarily residential and is experiencing daily the effects of the stunning increase in air traffic that occurs overhead. This increase in operations has occurred without any meaningful opportunity for engagement or input by the community. The proposed runway extension and the relocation and expansion of the terminal building (and associated facilities and infrastructure) (collectively the "Proposed Action") will, if constructed and implemented as proposed, significantly and materially further degrade the physical environment in the Town and the health and well-being of its residents.

The Airport is located in two municipalities: the Town and the City of New Haven (the "City"), but the vast majority of the Proposed Action consists of a planned expansion and relocation of facilities to the Town. This includes one end of an extended runway and ancillary access to the runway; a new terminal facility with four (4) gates and two (2) additional boarding positions (6 total); new parking facilities (including a multi-story garage) with at least 4,000

additional parking spaces; and a new access road and primary access route through the Town. Traffic will be routed through and on Town roads in residential and town-center areas that are already inadequate for current local purposes and are unable to be expanded due to physical constraints.

The impacts of the Proposed Action on families, businesses and other members of the community will be immense and negative. It is unlikely that any noticeable economic benefit (the purported main driver for the Proposed Action) will be experienced by those in the Town. Town residents will instead experience increased air, noise and light pollution, unsafe and at times unpassable roads, and many other negative impacts associated with a very large number of additional daily passenger flights (and an unknown number of new cargo flights) to and from the Airport enabled by the Proposed Action.

The Town has consistently said that the proposed runway extension and the relocation and expansion of the terminal building (and associated facilities and infrastructure) at the Airport is the most transformative project in the Town's history. A full review of the scope of the proposals and findings in the Draft EA, demonstrates that this statement is more accurate today than ever before.

The Town, via its elected officials and public safety officers, has a duty to make every effort to protect its residents from the significant negative impacts of the Proposed Action -- many of which were not identified in the Draft EA and some of which were dismissed without adequate examination of those impacts and alternatives to the Proposed Action.

The Town, as part of these efforts, retained specialized local and national airport counsel: Pullman & Comley, LLC and Daniel S. Reimer LLC. to consider and address local and federal compliance issues. It also retained a national airport consultancy firm: Johnson Aviation, Inc.[1] which specializes in complex and specialized airport issues including those that arise out of land use and proposed facilities. It also retained the following three independent expert consulting firms: Davison Engineering, an environmental consulting firm to consider and report on ecological and environmental issues;[2] Trinkaus Engineering, LLC to consider and report on stormwater and foreseeable impacts on the physical environment[3]; and VN Engineers, Inc. to consider and

[1] Resumes for the principals at Johnson Aviation, Inc. are included as Attachment A.

[2] Davison Engineering Report on Environmental Assessment dated April 21, 2023, the "Davison Report", included as Attachment B to this letter and incorporated by reference as if fully set forth herein.

[3] Trinkaus Engineering. LLC Report on Environmental Assessment dated April 18, 2023, the "Trinkaus Report", included as Attachment C to this letter and incorporated by reference as if fully set forth herein.

report on traffic impacts and produce an independent Traffic Impact Study[4]. Reports generated by the three independent consultants are attached to these comments (collectively the "Independent Expert Reports"). The Independent Expert Reports each contain detailed analysis and additional facts that generate conclusions at odds with many of those made in the Draft EA.

As explained below and in the Independent Expert Reports on environmental impacts, flooding and stormwater impacts, and traffic impacts, it is clear that the analysis and consideration of key impacts in the Draft EA are deficient under the National Environmental Policy Act ("NEPA"), 42 U.S.C. § 4321 et seq. (2012) and do not provide a reasonable basis for decision-making. Therefore, preparation of an Environmental Impact Statement (an "EIS")[5] by the FAA is appropriate and required at this time. Such a course of action will benefit all stakeholders.

If the FAA decides not to undertake an EIS the agency should **at a minimum** require the preparation of a revised or supplemental environmental assessment that satisfies FAA and Council on Environmental Quality ("CEQ") standards. It must be supported by evidence and not just filled with conclusory declarations, as is the EA.

Further, the FAA should adopt any necessary mitigation measures identified as part of that analysis. To be very clear, the Town believes, based on a reasonable and fact driven analysis, that the Draft EA does not provide a reasonable basis for decision-making, and therefore violates NEPA.

The comments provided herein will amply demonstrate the EA's deficiencies and the need for an EIS. To be clear: the Town is not anti-development or anti-airport. The Town simply expects the FAA to follow federal law -- to the benefit of every stakeholder involved or otherwise potentially impacted by the

[4] VN Engineers, Inc. Report on Environmental Assessment dated April 27, 2023 with attached independent Tweed New Haven Airport Expansion Traffic Impact Study, the "VN Report" included as Attachment D to this letter and incorporated by reference as if fully set forth herein.

[5] An EIS is based on a much more detailed set of facts and analyses and undertakes a rigorous review of information and scrutiny of a project. This is very different from an EA. The EIS process will allow for much more public involvement and transparency and will be the responsibility of the FAA, not the Authority. The Town's position is that the National Environmental Policy Act (NEPA) and the Council on Environmental Quality (CEQ) regulations require the much deeper evaluation that an EIS will provide because a project of this scale will have, among many other things, a significant impact on the human environment, on wetlands and the floodplain, on sensitive coastal areas, on air quality, on an Environmental Justice neighborhood and on parks and recreational spaces.

Proposed Action. An EIS will serve to inform decision making which is its purpose. There is no outcome dictated by the performance of an EIS.

What follows is a set of comments and independent analysis on several key components found in the Draft EA. These comments address the following critical components in the Draft EA:

- The basic assumptions regarding the capacity of the existing facilities at the Airport and the expected growth in enplanements at the Airport are faulty, internally inconsistent and unreliable. This undermines many of the conclusions reached in the Draft EA.

- The failure to adequately investigate and address (or even acknowledge) existing issues associated with the proposed new access route that make it dangerous and unavailable at times and thus fall short of meeting the purpose and need of providing "suitable and efficient roadway access to the terminal area" (EA at 3-22);

- The failure to follow required processes for the identification and consideration of Section 4(F) and 6(F) resources and avoidance of potential impacts that may constitute a "use" (including a "constructive use") of such resources;

- The failure to adequately identify or analyze the impacts that the Proposed Action will have on the physical environment including on tidal wetlands and watercourses, inland wetlands, the floodplain, coastal resources, and threatened and endangered species;

- The failure to adequately identify and consider the impacts associated with air quality, noise, hazardous materials and climate change; and

- The failure to adequately consider the impacts on socioeconomics and environmental justice.

- The failure to include all elements necessary to make the runway extension fully functional in compliance with FAA safety standards results in an EA that fails to fully disclose and analyze significant impacts from the Proposed Action.

In sum, the following comments and the Independent Expert Reports clearly demonstrate that the EA does not provide a sufficient basis for analyzing the potential environmental impacts of the Proposed Action. What is demonstrated is the need for the FAA to prepare an Environmental Impact

Statement to analyze thoroughly the significant impacts identified, with extensive public input.

If it does not commence an EIS at this point, then at the very least, the agency should direct the preparation of a new environmental assessment that corrects the deficiencies in the EA that have been pointed out by the Town, its independent experts, and other commenters.

**The Scope and Size of the Proposed Action is Fundamentally Incompatible with the Community**

As a threshold matter, it is important to note that the magnitude of change associated with the sheer size of the proposed new facilities, the forecast number of enplanements, and the attendant vehicle traffic is vastly beyond what the Town was initially told to expect. In fact, the Town was presented with developing information regarding the Proposed Action after the fact with no meaningful opportunities for input to date, other than this EA comment process. Importantly the Proposed Action, as presented, changed in material and important ways. For instance:

- Original estimates of costs associated with construction of the Proposed Action have ballooned from $60 million to the current $165 million.

- Parking facilities were originally proposed to accommodate 1,600 vehicles at peak, but the EA now envisions **an additional** 4,000 vehicle spaces and a six-story parking garage which is elevated due to its location in a flood plain.

- The size of the proposed terminal has increased from a minimum of 30,000-70,000 square feet to approximately 80,000 square feet. The Town also notes that the Tweed-New Haven Airport Master Plan Update Final Report October 2021 (the "MPU"), which was published just 18 months ago, explicitly contemplated a possible expansion of the existing terminal building, a possibility that is not contained in the EA.

- The forecasted number of passengers expected to enplane at the airport was originally estimated in the MPU at 82,273 for the year 2025. This was far surpassed in the year 2022 when the actual number of enplaning air passengers was 351,506. The current forecasts are for 665,334 enplanements in 2026 and 1,222,551 in 2031. This means that almost 2.5 million enplaning and deplaning passengers will be coming through the Airport in 2031 if this forecast holds true.

The Proposed Action would result in a very different Airport than the one that currently exists or even the one contemplated in the October 2021 MPU. Its placement in a sensitive coastal area replete with precious natural resources and surrounded, at least on the Town side, by a designated Environmental Justice neighborhood is astonishing.

Even more astonishing are the fundamental flaws and glaring inconsistencies contained in the EA that lead to the unsupported and paradoxical contention that the Proposed Action would result in a cumulative environmental benefit to the community including "reduced noise and air emissions compared to the no action alternative." EA at 5-66.

**The EA Contains a Fundamental Inconsistency that Infects the Entire Environmental Analysis**

In this section of its comments, the Town sets forth the fatal flaws in the EA that render it unreliable for assessing the environmental impacts of the Proposed Action. These flaws are twofold:

1) the ability of the existing Airport facilities to accommodate unconstrained demand as set forth in Section 5 and Appendix I is vastly overstated and totally at odds with earlier statements in Sections 2 and 3 that the existing Airport facilities cannot adequately handle current passenger traffic levels, much less increased levels; and

2) the projected traffic that will be accommodated by the proposed new facilities is almost certainly understated, as it assumes that (a) Avelo will not increase its flights once the supposedly crippling constraints of the current runway length are alleviated, and (b) no additional carriers will serve HVN (despite the fact that American has had a significant presence and still retains gate rights at the Airport, and Allegiant has expressed interest in serving the Airport -- but only if the runway is extended.)

The driving force for the massive airport redevelopment Proposed Action is supposedly the need to address glaring inadequacies of the existing Airport runway, terminal, and related facilities to handle current and projected passenger demand. But when it comes time to compare environmental consequences of the No Action and Proposed Action alternatives, magically, those horribly inadequate existing facilities are deemed to be perfectly capable of handling not only existing demand, but also passenger loads that are over **three times greater**.

On the flip side, in assessing the environmental impacts of building larger, brand new facilities that can easily handle vast increases in traffic, the EA ultimately decides that those facilities will not actually handle any more passenger traffic than the cramped, traffic-constraining existing facilities would. This is implausible on its face, and even more so when posited in the context of a private airport operator who is contractually obligated to build the new facilities, and whose financial success depends on running as many flights and passengers through the Airport as possible in order to gain more revenues from landing fees, passenger-driven concessions, and passenger facility charges.

The EA contains a fundamental inconsistency that undermines every aspect of the document:

The beginning of the EA is filled with references as to how totally inadequate the existing facilities at the Airport are to handle current passenger demand -- much less any expansion.[6]

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[6] "Proposed Action is projected to be constructed and operational by 2026 to address **severe operational deficiencies**." EA at 2-1 (emphasis added).

"The Proposed Action would address **existing chronic and severe passenger terminal area congestion**, lack of comfort and services due to **significantly undersized and outdated facilities**, and non-standard land use compatibility of the terminal area with adjacent land use." EA at 2-4.

"The existing building ("West Terminal") is **outdated and severely undersized for near-term traffic growth**. The existing terminal (built in 1980) was converted from a hangar and as such was never intended to be a passenger terminal. The terminal building **can no longer comfortably accommodate passenger levels**. … **The existing terminal is cramped** and layout flow path from check in to the gate is confusing for passengers and not efficient." EA at 2-5 (emphasis added)

"The Master Plan Update (see www.tweedmasterplan.com) identified a near term **need for various airfield and terminal area improvements to accommodate expected demand** at HVN." EA at 2-1 (emphasis added)

"The goal of the Proposed Action is to enhance efficiency and terminal area capacity and **alleviate the operational constraints** at HVN while ensuring the Airport continues to develop in order to provide an airport facility that **reliably and safely offers consistent and adequate level of service for the forecasted demand**." EA at 2-1 (emphasis added).

The EA states that the existing terminal has **"No" "Flexibility to Accommodate Existing and Future Demand."** EA at 3-27, Table 3-11 (emphasis added).

"Alternative 2 meets the Purpose and Need and addresses the **existing runway deficiencies** by providing **runway length necessary to accommodate the existing and proposed aircraft fleet utilizing HVN**. Alternative 2 would provide the minimum runway length to meet FAA design standards and **remedy the current runway limitations and provide**

The second half of the document cavalierly assumes that the existing facilities can not only handle existing passenger levels, but could handle almost double the level of passengers in 2026 (665,334 enplanements)[7] and 3.5 times the number of passengers enplaning at the airport today in 2031 -- or a whopping **1.2 million** enplaning passengers, which means almost **2.5 million** enplaning and deplaning passengers per the forecasts contained in the EA.[8]

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**HVN the necessary infrastructure to accommodate the forecasted operational growth."** EA at 3-21 (emphasis added).

The EA lists the **"Flexibility to Accommodate Existing and Future Demand" as "None" for the existing runway.** EA at 3-21, Table 3-7 (emphasis added).

"[A]irlines have expressed interest in serving HVN; however, **the existing 5,600-foot runway length has prevented them from doing so.** For example, in a February 2020 letter, Allegiant indicated interest in serving HVN but indicated a runway 'of approximately 6,000 feet' would be required. **… Avelo has also identified the need to extend Runway 02-20**." EA at 1-5 (emphasis added).

[7] "The forecast Proposed Action scenarios are based on Avelo's forecast peak weekday flight schedules (as described in the letter of intent included in Appendix B). **The No Action scenarios assume the same level of passenger demand**, due to the underlying market Avelo has proven and foresees in each of those future years, but **the No Action scenarios are configured to the constraints of the existing airport layout**. The average daily operations modeled for each of the forecast scenarios, **both No Action and Proposed Action**, are assumed to be 80 percent of the peak day operations, based on Avelo's latest provided forecast schedule." EA Appendix I at 21 (Emphasis added).

"Avelo began operations at HVN using only Boeing 737-700W aircraft, **due to runway length constraints**. A small portion of scheduled flights have been flown by 737-800W since the beginning of July 2022, in order to meet demand; these larger aircraft are used at a reduced passenger capacity on the existing runway. As a result, the Existing Conditions and No Action scenarios assume that 95 percent of the air carrier operations are flown by 737-700W aircraft, and the remaining five percent by 737-800Ws." EA Appendix I at 21. (Emphasis added).

"Under the Proposed Action, Avelo is planning to replace its 737-700Ws with 737-800Ws to the extent possible. Avelo's peak day of the week schedule forecast for 2026 consists of 17 arrivals and 17 departures (34 operations) using a combination of 737-700W and 737-800W aircraft (assuming 50 percent of each), assuming the runway is extended. The study team calculated the passenger seat capacity from that fleet mix and level of service, and then assumed a fleet of 95 percent 737-700W aircraft and 5 percent 737-800W aircraft with reduced passenger capacity to arrive at the 2026 No Action scenario peak weekday total of 40 operations (an additional three departures and three arrivals)." EA Appendix I at 22.

[8] "Following the same approach, the peak weekday schedule for 2031 (assuming the proposed runway extensions are built) consists of 28 arrivals and 28 departures (56 operations) using a combination of 737-700W and 737-800W aircraft (assuming 70 percent in the larger B737-800W aircraft). Calculating the passenger seat capacity as described above with 95 percent of flights in 737-700W aircraft, the result is a 2031 No Action scenario peak weekday total of 68 operations (an additional six departures and six arrivals). **The study team confirmed**

These assertions in the EA cannot both be true: either the existing facilities are inadequate to handle projected passenger traffic increases[9] – and therefore will constrain the amount of future traffic (and, critically, environmental impacts) – or the existing facilities can handle the projected passenger traffic increases, and the new facilities are not really needed.

This fundamental disconnect allows the EA to reach the startling – and implausible – conclusion that there will be greater environmental impacts from the No Action scenario than if the Proposed Action were to proceed as proposed. For instance, with respect to air pollution, the EA claims that "operational emissions are expected to decrease for the Proposed Action, as compared to the No Action alternative, for all of the listed pollutants except NOx, which shows an increase in emissions. The NOx increase is attributed to the higher emission factors associated with the 737-800 engines as compared to the 737-700 engines." EA at 5-7.[10]

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**that the additional flights can be accommodated on the existing three gates,** but with significant detriment to the level of passenger service." EA Appendix I at 22 (Emphasis added).

[9] As noted above, the EA bases its traffic projections solely on the plans of new entrant low-cost carrier Avelo, which flatly stated that, "The runway extension is [a] must for HVN to be a commercially viable airport for Large Transport Category Aircraft" and "an extension to 6,635 feet is **not only needed**, but **mandatory for any commercial growth at HVN**." EA Appendix A, Attachment 1 at 2 (emphasis added). Avelo also stated that, "**the runway extension will allow Avelo to grow the market** and maintain FAA Safety Standards." EA Appendix A, Attachment 1 at 7.

[10] "As discussed above, and as discussed in greater detail in Appendix I, implementation of the Proposed Action would reduce the number of aircraft operations and related equipment compared to the No Action alternative due to the expected change in the fleet mix: some 737-700W flights would be replaced by 737- 800W aircraft with greater passenger capacity. Aircraft operational emissions were estimated for 2026 and 2031 for each alternative, as well as for the 2022 existing conditions. The AEDT model estimated emissions for all five scenarios using the same set of model inputs and forecast operations that were used for the noise calculations." EA at 5-3.

"The analysis in this document shows that the Proposed Action is anticipated to result in less fuel burn and thus less GHG emissions when compared to the No Action alternative for both 2026 and 2031. As discussed in Section 5.1.4.1, **although the same number of passengers is expected for either alternative, the number of forecast operations decreases for the Proposed Action with the replacement of the 737-700W by the larger 737-800W aircraft.**" EA at 5-15 (emphasis added).

"The No Action would limit the flexibility to use higher seat capacity aircraft (737-800W) resulting in higher number of operations under the No Action compared to the Proposed Action. As result, emissions are expected to be higher under the No Action when compared to the Proposed Action, for all of the listed pollutants except NOX. See

With respect to noise, the EA states that "in both the 2026 and the 2031 comparison, fewer housing units and thus lower population would be within the bounds of the Proposed Action 65 DNL contour as compared to the corresponding No Action contour. . . . For the year 2031 analysis, the number of residential units with noise exposure of 65 DNL or greater is 287 under the No Action alternative and 238 under the Proposed Action." EA at 5-30.

**The MPU Also Detailed the Inadequacy of the Airport's Existing Facilities to Handle Projected Demand**

An early step in the planning for improvements at the Airport was the preparation of an MPU, which was issued in October 2021.

The MPU states that, "**Existing facilities are constraining commercial service at HVN."** MPU at 1-1 (emphasis added), and also "This [Master] planning document will serve as a guide to identifying **necessary improvements** and 'rightsizing' those improvements to meet future Airport needs." MPU at 1-1 (emphasis added).

One of the MPU's purposes was to "Identify **airfield improvements needed to accommodate forecast demand**. A key consideration was determining the **ultimate length of Runway 2-20**" and to "Identify terminal area **improvements needed to accommodate forecast demand** for commercial service." MPU at 1-1 (emphasis added).

The MPU observed that, "The passenger terminal building is **undersized for the current aircraft operations** out of the building and **needs to be appropriately upgraded to accommodate demand**." MPU at 1-2 (emphasis added).

However, by the time the EA was commenced, the Master Planning forecasts were outdated, because they were already vastly superseded by actual passenger traffic levels, as shown in the following tables from the MPU and the EA:

"Table 1-1: Summary of Baseline Forecasts

| | Actual | Forecast | | |
|---|---|---|---|---|
| | Baseline | 2025 | 2030 | 2040 |
| Enplanements | | | | |
| Air Carriers/Airline | 50,355 | 82,723 | 94,531 | 123,999 |

MPU at 1-2.

Table 5-3." EA at 5-9.

The new forecasts in the EA are as follows:

Table 2-1: Summary of Expected Aviation Activity [Note 1]

| Scenario | Enplanements | Air Carrier/Air Taxi Operations | Total Operations |
|---|---|---|---|
| 2025 Master Plan Update Forecast | 82,273 | 5,267 | 25,219 |
| 2021 (actual) | 29,372 | 3,600 | 40,031[Note 3] |
| 2022[Note 2] (actual) | 351,506 | 5,650 | 26,372 |
| 2026 No Action | 665,334 | 11,680 | 35,321 |
| 2026 Proposed Action | 665,334 | 9,928 | 33,569 |
| 2031 No Action | 1,222,551 | 19,856 | 43,702 |
| 2031 Proposed Action | 1,222,551 | 16,352 | 40,198 |

EA at 2-3.

The key takeaway here is that the airport facilities were deemed inadequate to handle 50,385 baseline enplanements, 82,723 enplanements for 2025, 94,531 forecast enplanements for 2030, and 123,999 forecast enplanements for 2040.

The MPU declared that "**Existing facilities are constraining commercial service at HVN**; therefore, **constrained and unconstrained forecasts were prepared**." MPU at 1-1 (emphasis added). Thus, even at the lower traffic projections contained in the MPU, it was recognized that the existing facilities would constrain demand, that is, they would not allow sufficient operations to accommodate the demand that could be accommodated with the facility improvements, and therefore, **constrained and unconstrained forecasts had to be prepared** to reflect the lower traffic levels that could be handled by the existing facilities.

The fact that the EA now contains new forecasts with *even more* unconstrained growth underscores the need to carefully examine the constraints on growth that would be experienced if the existing facilities were to continue to be utilized. Instead of doing so, however, the EA seemingly has backed into the "no impacts" conclusion by starting with a fundamentally flawed assumption that the passenger levels will be the same with or without the project, and they will simply be distributed over fewer aircraft if the Proposed Action is completed.

The EA's assumptions result in the anomalous prediction that there will be more air carrier operations under the No Action scenario than the Proposed Action scenario, as shown in the following table from the EA:

**Table 6. Air Carrier Operations**

| Scenario | Peak Day of Week Operations | Average Daily Operations | Annualized Operations |
|---|---|---|---|
| **Existing Conditions** | 24 | 24.0 | 8,760 |
| **2026 No Action** | 40 | 32.0 | 11,680 |
| **2026 Proposed Action** | 34 | 27.2 | 9,928 |
| **2031 No Action** | 68 | 54.4 | 19,856 |
| **2031 Proposed Action** | 56 | 44.8 | 16,352 |
| For each forecast year, the same number of passengers is assumed. Because the No Action alternative assumes full 147-seat 737-770s and a small number of 85%-capacity 737-800s, while the Proposed Action alternative assumes a mix of 147-passenger and 189-passenger aircraft, the No Action scenarios have higher numbers of aircraft operations. | | | |

Sources: Avelo flight schedule for 6/16/2022-9/07/2022 and Avelo letter of intent dated November 4, 2021.

EA Appendix I at 21.

> Air Carrier operations represent the expected level of service to be provided by the airport's sole carrier, Avelo:
>
> - the Existing Conditions represent the level of Avelo service once that service is fully established, and
>
> - the four forecast scenarios represent Avelo's expected level of service in the design year (2026) and five years later (2031), with and without the proposed airport improvements.

EA Appendix I at 21.

It is appropriate to prepare an unconstrained growth forecast to predict future traffic in the Proposed Action scenario, which is specifically designed to accommodate such growth. However, to then state that the same exact passenger traffic will be manifested in the existing airport layout, which the EA and MPU state has placed severe operational constraints on commercial flights, is not credible – especially when the purpose and need for the Proposed Action is to accommodate increased traffic.

The EA's shocking conclusion is based on the foregoing fundamentally flawed assumption compounded by an additional basic flaw in the alternatives analysis – a misguided and unsupported assumption that the same exact amount of passenger demand to the same exact cities will be accommodated whether or not the Airport's runway is extended.

Even if Avelo remains the only airline serving the Airport, there is no reason to assume that, if the runway is extended, Avelo will serve only those destinations that it would otherwise serve with the existing runway – especially in light of the fact that Avelo is on record as stating that at the current runway length, "Any destinations of 1,500 miles or greater will take catastrophic weight penalties." EA Appendix A at 17.

Moreover, Avelo reports that:

> The current runway length of 02-20 allows Avelo to carry full loads to and from Florida destinations only when the conditions are "good". If there are weather conditions that drive the condition of the runway to be wet, contaminated, or even hot temperatures; the B737-700 takes significant penalties on passengers in seats. Note: When Runway Condition Code, RCC is a 4 we take a large penalty. When a[n] RCC of 3 is reported **Avelo ceases operations at HVN due to the runway length**. **Operating an airline at HVN only in "good weather" is not a sustainable business plan.** EA Appendix A, Attachment 1 at 2 (emphasis added).

If operating with the current runway length is "not a sustainable business plan," and Avelo suffers crippling weight penalties or a temporary cessation of aircraft operations due to the current runway length at the Airport, it is incomprehensible that the EA would conclude that Avelo will operate even more flights if this inadequate runway length is maintained than it would if the runway is extended. Yet that is exactly what the EA does – it simply assumes that Avelo will add more flights to accommodate projected growth under the No Action scenario.

Elsewhere, however, the EA acknowledges that Avelo would add routes if the runway is lengthened: "It is anticipated that should the runway be extended, Avelo Airlines will start flying its B737W to California and/or add B738W to its existing Florida [routes] and/or fly to California (Attachment 1)." EA Appendix A, Attachment 7 at 7.

Instead of making a reasonable estimate of the increase in passenger traffic and destinations that will be made possible by extending the runway at the Airport, the discussion in the EA on environmental impacts makes the

implausible assumption that the same exact amount of traffic will be carried to the same exact locations in either runway configuration, with the only difference being that the longer runway will allow for the operation of larger, replacement aircraft, which will carry more of the traffic per flight, resulting in fewer flights than under the No Action scenario.[11]

This is an unfounded conclusion in light of the fact that Avelo has indicated that continuing to operate under current conditions at HVN is "not a sustainable business plan," implying that Avelo would certainly **not increase** flights over the long term without the runway extension, and may very well **reduce** its existing operations under those conditions. There is no reasonable basis to expect an airline to continue operating – and growing -- under an unsustainable business plan for 3-8 years, which is the time it would take to reach the EA's forecasts of 665,334 enplanements in 2026 and 1.2 million enplanements in 2031.

**The EA Assumes Avelo Will Add Flights as Needed to Accommodate Assumed Passenger Levels in the No Action Scenario, Even to Inconvenient Times, and Passengers Will Just Follow**

A further assumption in the EA is that Avelo can just shift flight times as needed to reflect operational constraints due to the limitations of the existing facilities, and passengers will flock to these inconvenient flights in exactly the numbers needed to bring the total number of passengers carried up to the total unconstrained demand projections. For example, the EA states that:

> The No Action forecast cases show a higher night percentage for arrivals than the Proposed Action cases, because the confined space at the existing terminal only allows for three aircraft gates; the final arrivals of the day would need to occur after 10:00 pm. Conversely, the additional apron space afforded by the new terminal design would allow for more aircraft to be present at one time, with fewer late-arriving flights.
> EA Appendix I at 24.

Moving flights past 10:00 PM subjects them to a 10 dB noise penalty under the FAA's noise model, thus exacerbating the noise impacts in the No Action scenario. There is no analysis of whether passengers would actually be willing to fly at these less convenient times or under conditions "with significant detriment to the level of passenger service." EA Appendix I at 22. Nor is there analysis of the costs to Avelo of adding more reduced-

[11] "The No Action scenarios assume the same level of passenger demand, due to the underlying market Avelo has proven and foresees in each of those future years, but the No Action scenarios are configured to the constraints of the existing airport layout." EA Appendix I at 21.

capacity flights. Failure to conduct such analyses is imprudent in light of Avelo's characterization of its current weight penalties at HVN as "catastrophic" and the existing operating constraints as an "unsustainable business model."

**The Draft EA Fails to Account for Existing Limits on Use of the Airport**

Another factor in misstating projected aircraft operations at the Airport under the Proposed Action alternative is the EA's failure to acknowledge existing weight and noise restrictions in effect at the Airport.

**Weight**

The MPU, at Table 2-1, reports the pavement strength of Runway 2/20 to be 160,000 pounds (dual wheel). This is the same information reported on the Airport's 5010 Master Record.

The MPU does not recommend any enhancements to the weight-bearing capacity of Runway 2/20 or any other airfield pavements. No such improvements are mentioned in the Draft EA as part of the proposed action.

City of New Haven Code of General Ordinances Section 4-70 provides, "Aircraft Weight Restriction – No fixed wing aircraft with a maximum certificated gross takeoff weight greater than one hundred sixty thousand (160,000) pounds shall land at the airport other than a landing necessitated by an inflight emergency."

The Airport website includes this same prohibition. https://flytweed.com/wp-content/uploads/2023/01/Tweed-General-Aviation-Noise-Abatement-Guide-2023.pdf[12]

Because the restriction is based on the weight-bearing capacity of the pavement, the Town understands it to be consistent with the Airport Authority's AIP Grant Assurance obligations. *See* FAA Order 5190.6B, Airport Compliance Manual, Sec. 10.5(c) ("A sponsor may impose a restriction based on specified maximum gross weight or wheel loading based on the design load bearing capacity of the pavement.")

[12] Note that, while this restriction is reported in a document entitled "General Aviation Noise Abatement Guide", the restriction itself is not limited to General Aviation aircraft; indeed, it likely would be unjustly discriminatory for the Airport Authority to attempt to limit the restriction only to General Aviation.

Although the design critical aircraft is the Boeing 737-700, the Draft EA estimates increased use of the Airport by the Boeing 737-800 in the Proposed Action alternative.

The Boeing 737-800 has a manufacturer's specification maximum takeoff weight of 174,200 pounds, which exceeds the reported weight-bearing capacity of Runway 2/20 and the corresponding weight restriction in effect at the Airport.

The Draft EA is entirely devoid of any mention or consideration of this issue. To the contrary, the Draft EA simply assumes that, under the Proposed Action, a considerable number of operations will be in 737-800 aircraft, namely 4,964 in 2026 and 11,446 in 2031. This is more than under the No Action Alternative, which assumes that operations by 737-800 aircraft will make up no more than 5% to 9% of Avelo's forecast operations.[13]

The Town also notes that the MPU and EA consider use of the Airport by the Airbus 320, which also has a maximum takeoff weight greater than 160,000 pounds.

The Town further understands that the FAA, by policy, prefers that airport sponsors seek to accommodate some number of over-weight aircraft. Nevertheless, there is no technical evaluation of whether the projected number of operations by 737-800 aircraft would unduly stress airfield pavements and no mention of whether and how the Airport Authority, AvPorts and Avelo Airlines anticipate addressing the fact that the 737-800 exceeds the reported pavement strength and corresponding weight restriction. This deficiency should be remedied in further environmental consideration of the Proposed Action.

**Noise**

Neither the MPU nor the Draft EA make mention of any noise-based restrictions in effect at the Airport.

City of New Haven Code of General Ordinances Section 4-63 provides as follows: No person shall take off or land an aircraft at the airport if the "takeoff" noise level for that model of aircraft exceeds the following noise levels, as set forth in the advisory circular [number 36-3] in the column entitled "EST DBA," for the following time periods:

[13] Although not mentioned anywhere in the Draft EA, it seems a virtue of the No Action Alternative is that it is far more consistent with the pavement strength and weight restriction, since the maximum gross takeoff weight of the 737-700 is less than 160,000 pounds.

| Time Period | Maximum A-Weighted Sound Level |
|---|---|
| 12:00 a.m. – 6:00 a.m. | 68.0 db(A) |
| 6:00 a.m. – 7:00 a.m. | 73.0 dB(A) |
| 7:00 a.m. – 10:00 p.m. | 78.0 dB(A) |
| 10:00 p.m. – 12:00 a.m. | 73.0 dB(A) |

This restriction also appears on the Airport website (link above). Again, while the document is entitled "General Aviation Noise Abatement Guide", there is no indication in the City Code that this restriction is intended to apply only to General Aviation aircraft. The City Code, at Section 4-64 (Categorically exempt aircraft) and Section 4-65 (Exemptions due to circumstances) provides no exemption for commercial passenger aircraft.

The Airport's Noise Abatement Guide speaks directly to the legal status of these noise limits:

> The Airport Noise Ordinance was approved in 1984 by the City of New Haven. A copy of the Ordinance is available on our website as www.flytweed.com. The Noise Ordinance was grandfathered in when the Federal Aviation Noise and Capacity Act was passed in 1990 ***and remains in full force and effect***. (emphasis added)

The Town is not aware of any formal determination by the FAA or a court of competent jurisdiction that the noise limits (or weight limit discussed above) are inconsistent with federal law or the Airport Authority's obligations under the AIP Grant Assurances.[14]

The Draft EA is entirely devoid of any consideration of these noise limits. Both the Boeing 737-700 and 737-800 have estimated maximum A-weighted sound levels that would prohibit their use during nighttime hours (10:00 p.m. to 7:00 a.m.). Nevertheless, the Draft EA estimates that nighttime operations by 737-700 and 737-800 aircraft will make up 8.8%-17.6% of departures, and 5.9%

[14] Note, the Town specifically asked the Airport Authority for its position on the continuing effect of the City Code. The Airport Authority summarily advised that noise rules are preempted, without any discussion of the City Code or why the Airport Authority advises on its website that the noise limits remain in effect.

- 14.7% of arrivals in the No Action and Proposed Action scenarios. EA Appendix I at 25, Table 8.

This problem is particularly important because central to the Airport Authority's theory that environmental impacts under the Proposed Action will be lower than under the No Action Alternative is the fact that, in the No Action alternative, there will be more early morning departures and late-night arrivals in 737-700 aircraft to meet forecast passenger demand. This assumption fails to account for limits on nighttime operations by 737-700 aircraft and it also triggers a 10 db noise penalty under the FAA's DNL metric.

**The EA Mentions and Then Ignores the Potential for Other Airlines to Serve the Airport Thus Understating Air Traffic Under the Proposed Action**

The EA acknowledges that "other airlines have historically expressed interest in operating out of HVN including the most recent letter sent by Allegiant Airlines (flying Airbus A319 and A320 aircraft) attached to the 2021 Master Plan." EA Appendix A, Attachment 7 at 7.

These other airlines "have expressed interest in serving HVN; **however, the existing 5,600-foot runway length has prevented them from doing so**." EA at 1-5 (emphasis added). For example, "in a February 2020 letter, Allegiant indicated interest in serving HVN but indicated a runway 'of approximately 6,000 feet' would be required." *Id*.

Notwithstanding this statement of interest by other airlines, the EA assumes that only Avelo will serve the Airport even under the Proposed Action scenario.[15] The forecasts for the Proposed Action vs. the No Action scenarios thus ignore the fact that Allegiant specifically stated that it would not serve the Airport **unless the runway is extended**.[16]

The EA's approach to estimating Proposed Action passenger traffic also ignores the phenomenon, documented by U.S. DOT, known as "The Southwest Effect."[17] DOT has found that when a low-cost carrier (like Southwest used to be, and Allegiant still is) enters a market, it induces new demand by

[15] "Avelo is the only airline currently offering commercial services at HVN[.] However, as a public airport, HVN is available to other carriers that may be interested in serving HVN in the future. As of this writing, there are no firm proposals from other carriers to serve HVN." EA at 1-5.

[16] "[I]n a February 2020 letter, Allegiant indicated interest in serving HVN but indicated a runway 'of approximately 6,000 feet' would be required. **… Avelo has also identified the need to extend Runway 02-20**." EA at 1-5 (Emphasis added).

[17] THE AIRLINE DEREGULATION EVOLUTION CONTINUES: The Southwest Effect, Randall D. Bennett, James M. Craun, Office of Aviation Analysis, U.S. Department of Transportation 1993.

passengers that was not previously manifested by existing carriers. The newly induced demand could reach 100%, 200% or even more of existing demand. While the Southwest Effect has become more subdued for Southwest itself, as it has become more of a mainstream carrier, the same phenomenon has been found in studies involving other airlines that remain low cost, such as Allegiant, JetBlue, and Spirit.[18]

This phenomenon has already played out at the Airport, as Avelo's entry into the market has exploded demand far beyond anything the Airport had experienced with prior air carrier service – and far beyond the FAA-approved air traffic projections made in the MPU just 18 months ago.

While Avelo is a low-cost airline, and another airline coming in may not induce significantly more demand if it flies only the same routes (unlike a low-cost carrier going head-to-head on a route with a traditional carrier), there is, in fact, no reason to assume that a new low-cost carrier would only fly the same routes as Avelo. Instead there is every reason to assume a new carrier or carriers would fly new routes that match up well within their own networks. If so, there would clearly be new passengers and new flights with the runway extension. This would mean that there would, therefore, be more total passengers and more flights (and with larger aircraft) with the longer runway than there would be without it. **Thus, more noise and air pollution would result if the Proposed Action were implemented compared to the "No Action" scenario.**

The EA's contorted contrary conclusion is all the more perplexing because the runway extension is "**Justified** based on 49 USC § 47101 (a)(7) 'that airport construction and improvement projects that **increase the capacity** of the facility to ***accommodate passenger […] traffic be undertaken*** **to the maximum feasible** extent so that safety and efficiency increase and delays decrease.'" EA Appendix A at 12.

So simultaneously, the EA claims that **increasing capacity** to accommodate passenger traffic is a **fundamental justification** for the Proposed Action but relies on traffic projections that assume **no additional passenger traffic** in the Proposed Action vs. the No Action alternative. Inconsistencies such as this render the EA arbitrary and capricious.

This analysis is clearly unreliable and needs to be corrected to address the relevant issues honestly and consistently.

[18] See, e.g., See EVOLVING TRENDS OF U.S. DOMESTIC AIRFARES: THE IMPACTS OF COMPETITION, CONSOLIDATION, AND LOW-COST CARRIERS, MIT/ICAT, Michael D. Wittman and William S. Swelbar (2013).

**Environmental Analysis of the Impacts of the Proposed Action Must Begin with a Suitable Point of Reference from Which to Measure Such Impacts**

One does not need to be an expert in aviation forecasting to be able to see the internal inconsistencies in the EA and the fundamental flaws that appear to overstate the number of commercial airline flights in the No Action alternative and understate the number of commercial airline flights in the Proposed Action scenario. Therefore, the Town seeks to point out the glaring inconsistencies and deficiencies in the analysis, while recognizing that it is up to the Airport Authority, the FAA, and their consultant to fix them.

As noted above, by the Airport Authority's own admission, the existing airfield and landside facilities currently impose significant constraints on passenger traffic. Some sections of the EA readily acknowledge these constraints[19], although they are ignored later on in the environmental analysis section.

An important step in remedying the deficiencies of the EA when further environmental review is undertaken, is to identify the appropriate baseline condition under the No Action Alternative and measure the environmental impacts of the Proposed Action against that baseline.

Considering the problem of overcrowding and cars being parked in surrounding neighborhoods, as reported in the news, it appears that the Airport, in its current configuration, is already approaching one of the limits on capacity.

Without presupposing the outcome of the work when redone, the Town believes that the noise analysis, in particular, will be quite different and likely reveal that the noise impacts of the Proposed Action would exceed the threshold of significance established by the FAA. The noise analysis as summarized in the Draft EA and detailed in Appendix I identifies that a significant number of residences would be exposed to noise in excess of DNL 65 dB under the No Action Alternative and the Proposed Action, in both 2026 and 2031. But, because of the sophistry detailed above, the Draft EA alleges that housing units and population would *decrease* under the Proposed Action as compared to the No Action Alternative (and, at least for 2026, as compared to existing conditions). EA at 5-30.

Assuming, based on the EA's recitation of the inadequacy of the current configuration of the Airport to adequately handle even current operations, that the Airport is at or near its capacity limits, a more appropriate analysis might

[19] See pp. 8-10, above, including n. 8 .

be to compare the Proposed Action[20] against the Existing Condition (as of 2022). Under this comparison, the number of housing units exposed to noise greater than DNL 65 dB is estimated to almost double, from 126 (in 2022) to 238 (in 2031); population exposed to these noise levels is estimated to almost double, from 303 to 571, and acreage exposed to the noise is estimated to more than double, from 28.6 to 78.2. EA Appendix I at 54, Table 21. This does not even consider possible increases in flights due to the runway expansion as described above.

It also does not account for the additional population that would experience a reportable noise increase in areas exposed to noise below DNL 65 dB, which is not well-documented in the EA. Moreover, as Table 22 in Appendix I makes clear, many of the housing units that would be affected by the Proposed Action have not previously received sound insulation or other noise mitigation under the Airport's Noise Compatibility Program.

To be clear, the Town contends that these impacts should be characterized and considered as "direct effects", as defined in 40 C.F.R. Section 1508.1(g) to include those effects "which are caused by the action and occur at the same time and place." The Town appreciates that this issue has come up in prior disputes over airport projects and the FAA has argued, successfully in some cases, that increases in forecast traffic are attributable to natural growth rather than a proposed action. Here, the Airport Authority itself has conceded in the past that existing facilities are significantly constrained and that the proposed improvements are a prerequisite for predicted traffic increases.

**There is an Additional Reason to Believe that the EA Understates Passenger Traffic (and thus, Environmental Impacts) Under the Proposed Action Scenario**

As a final note on the Proposed Action vs. the No Action traffic projections, the Town points out that the proposed terminal is considerably larger than the MPU stated was necessary. In fact, it is sized to accommodate much larger passenger loads than even the current, expanded forecasts assume.

The proposed terminal is 80,000 square feet and includes four (4) gates and two (2) additional aircraft parking positions (plus two (2) additional "Remain Overnight" parking positions). Certainly, it seems that the proposed terminal could handle far more than the 44.8 average arrivals + departures predicted for 2031. EA Appendix I at 21, Table 6. Air Carrier Operations.

[20] For the reasons detailed above, the figures for the No Action alternative are unrealistic and unreliable.

With six (6) aircraft parking positions, 22.4 arrivals and 22.4 departures equates to a fairly modest 3.7 average turns per position per day. This is yet another reason why the environmental impacts of the Proposed Action are likely understated; the proposed terminal could accommodate significantly more than the projected traffic.[21]

Given that the terminal will be developed and run by a private operator that is investing tens of millions of dollars in the facilities, it is clear that it has a strong financial incentive to maximize the facilities' utilization and generate more revenues in order to recoup its investment and make a profit. Because airport revenues are, to a large extent, passenger-driven, it is reasonable to assume that the private operator will do everything it can to entice, cajole, and incentivize airlines to use the facilities to the greatest extent possible, generating more aircraft turns per gate, and thus maximizing passenger throughput and spending. Those additional aircraft operations will generate increased environmental impacts.

In light of the recent history of underestimating projected operations at the Airport, it would be prudent to give serious consideration to possibility that operations under the Proposed Action scenario will far exceed the projected estimates, and the resulting environmental impacts should be analyzed accordingly.

**The Noise, Air Quality, Environmental Justice, and Ground Traffic Analyses are Unreliable as They Flow from the Fundamental Flaw in Assuming that There is No Difference in Enplanements Between the Proposed Action and No Action Alternatives**

The EA makes several jaw-dropping conclusions on purported environmental impacts that stem from the fundamental flaw outlined above. The document makes the dubious claims that noise and air quality impacts would be **lower** under the Proposed Action scenario than under the No Action scenario. EA at 5-3, 5-7, and 3-30.

Regarding noise, the EA asserts that for both comparison years 2026 and 2031, "fewer housing units and thus lower population would be within the

[21] In a similar vein, the Town notes that the proposed parking facilities will include 4,000 passenger parking spaces. (4,000 new parking spaces are proposed, and existing spaces are not removed.) This is significantly more than the 640 to 1600 parking spaces proposed 18 months ago in the MPU. MPU at 6-29. This is yet another indication that increased passenger activity is anticipated under the Proposed Action alternative compared to the No Action alternative, and the environmental impacts of the resulting increase in ground vehicle trips must be carefully examined.

bounds of the Proposed Action 65 DNL contour as compared to the corresponding No Action contour." EA at 5-30.

For example, the year 2031 analysis predicts 287 residential units would suffer noise exposure of 65 DNL or greater under No Action alternative, but only 238 residential units would do so under the Proposed Action. EA at 5-30.

These far-fetched findings do not appear to result from technical errors in calculating the noise contours via the FAA's Aviation Environmental Design Tool ("AEDT").[22] Thus, these errors cannot be fixed simply by tweaking the calculations or analyses. Rather, the errors seem to flow directly from the fundamentally flawed assumptions underlying the projections of future flights at the Airport in the No Action vs. the Proposed Action scenarios. Simply put, the data input into the AEDT is implausible and unreliable. Therefore, the resulting noise contours are similarly unreliable.

The fundamental flaw in alleging that the Airport could handle the same number of passengers with the grossly inadequate runway and terminal facilities as it could if new facilities are built that are designed to handle such passenger loads -- except with fewer flights in the Proposed Action scenario -- automatically leads to noise contours that are be smaller if the facilities are built. Thus, the only way to correct the problem is by addressing the fundamental flaw in the assumptions and take a reasoned approach to forecasting unconstrained demand for the Proposed Action (designed to handle such demand) and then calculating the constraints that would be imposed by the existing facilities that could only partially meet that demand.

Once this is done, the inputs for the AEDT can be adjusted appropriately, and the noise contours can be recalculated for the No Action alternative. Then the impacts between the Proposed Action and No Action can be prepared. When accurate forecasts and resulting calculations are done, the Town anticipates that the environmental impacts of the Proposed Action will exceed recognized thresholds of significance.

[22] To be sure, there are some technical aspects of the assumptions that also warrant further scrutiny, such as the assumption that the thrust settings will be lower for aircraft taking off from the extended runway. Because thrust settings are ultimately decisions for the individual pilot-in-command, it is not necessarily true that pilots taking off from a still relatively short (6,575 ft.) runway will undertake thrust reduction measures rather than taking off as quickly as possible with maximum allowable thrust. The noise implications of using the same thrust settings for the current and modestly lengthened runway should be explored.

In addition, at that time, an appropriate analysis of the noise impacts on the Town Beach and other Town parks in the context of consideration of Section 4(f) concerns should be undertaken.

**Air Quality**

Just as with noise, the shocking claim in the EA that "operational emissions are expected to decrease for the Proposed Action, as compared to the No Action alternative, for all of the listed pollutants except NOx" (EA at 5-7), flows directly from the misguided assertion that the same number of passengers will fly to and from the Airport in the No Action and Proposed Action Scenarios, except that it will take more flights to carry those passengers in the No Action scenario. Thus, the problems with the air quality analysis will not be fixed by scrutinizing or revising the technical aspects of the analysis, but rather only by fixing the fundamental problem in the assumptions as described in the Noise section, above.

**Environmental Justice**

If the operations in the No Action scenarios are overstated -- as the Town believes they are, due to the fundamental flaws described above -- then the noise contours in the No Action scenarios are too large, and residents and residences within the 65 DNL are likely overstated for the No Action cases. When new contours are calculated, based on a more accurate assessment of likely commercial flight operations, they are likely to be smaller, with fewer residences and residents within the 65 DNL contour.

At that point, the No Action noise contours can be compared to the revised Proposed Action noise contours, to see if, in fact, more people and residences in the Town would be subject to 65 DNL noise levels than are removed the 65 DNL contours through the Proposed Action.

It is also important to see where the noise-impacted areas are located. For example, even if the same number of residences and residents would be subjected to noise at 65 DNL in the Town under the Proposed Action scenario as are removed from that contour in New Haven due to the proposed project, there would still be a significant environmental justice concern in that residents in a non-Environmental Justice neighborhood are relieved from such excessive noise levels but residents in the Town's Environmental Justice neighborhood who are not currently subject to such excessive noise levels would then become burdened with such noise in the Proposed Action scenario.

Shifting the burden of environmental impacts from non-Environmental Justice neighborhoods to Environmental Justice neighborhoods is contrary to

environmental justice principles. In an era in which the Biden Administration has recently announced a new commitment to environmental justice principles,[23] it would not be appropriate for the FAA to participate in shifting such burdens to an Environmental Justice neighborhood.

It also bears noting that the "purpose and need" of the Proposed Action to reduce the number of residences near the Airport terminal complex is not met simply by eliminating one group of nearby residents from exposure to the noise, light, and other impacts associated with the terminal complex, in favor of exposing a different group of nearby residents to such impacts – particularly if those impacts will now be felt by residents in an Environmental Justice neighborhood.

**Vehicle Traffic**

Vehicular traffic to and from the Airport is obviously related to the number of passengers using the Airport and the number of flight operations. While there are a number of variables that may affect the degree of correlation between vehicle trips and enplanements (for example, whether passengers drive themselves or are dropped off by friends, relatives, Uber or Lyft, or if passengers travel to/from the Airport in groups or individually), if the projected levels of passengers using the Airport are off by a significant amount, as the Town believes, the environmental impacts caused by those travelers going to and from the Airport is most likely inaccurate to a significant degree as well.

While the Town believes there are also multiple problems with the EA's traffic analysis even at the projected traffic levels, as detailed previously in these comments, one must not lose sight of the fact, for example, that the Proposed Action includes 4,000 new on-Airport parking spaces. The proponents of the Proposed Action clearly expect those spaces to be used to a significant extent once they are built, and when they are, the traffic impacts related to the associated vehicle trips will be different from those of the No Action scenario, which does not include any additional parking spaces.

Moreover, as noted in the Environmental Justice Section of these comments, even if vehicular traffic levels were to be exactly the same under the No Action and Proposed Action scenarios, shifting the impacts of that traffic from a non-Environmental Justice neighborhood in New Haven to an Environmental Justice neighborhood in the Town is unacceptable in itself.

[23] https://www.federalregister.gov/documents/2023/04/26/2023-08955/revitalizing-our-nations-commitment-to-environmental-justice-for-all

## The Proposed New Access Road Does Not Meet the Purpose and Need of Providing Suitable and Efficient Access to the Airport

### The Proposed New Access Route to the Airport Suffers from Severe and Chronic Flooding

The purpose and need for the proposed access road as set forth in the EA does not match up with the analysis and data presented.

The EA states that, "Providing a more direct access route that avoids residential neighborhoods and is able to support the traffic to the Airport, is a **key goal** of the project. New access that favors compatible land use and **safe and efficient routes between the terminal and I-95 is needed.**" EA at 2-10 (emphasis added).

The EA finds that the No Action alternative "does not provide suitable and efficient roadway access to the terminal area." EA at 3-22.

It also rejects the No Action alternative for the existing terminal as not meeting the purpose and need, in part because it "is prone to flooding during large storm events," and most recently, "experienced flooding in 2019 and 2021 during storm events," noting that "terminal operations are at risk of severe disruption during future storm events." EA at 2-6.

Yet the EA finds that the Proposed Action alternative **does** provide suitable and efficient roadway access to the terminal – notwithstanding the fact that the Town has informed the Airport Authority and the FAA that the access route (which also serves as the Town's "Main Street" and evacuation route) experiences **frequent and severe flooding**.[24]

The Proposed Action would route Airport traffic through the Town, specifically through the key intersection at Hemingway Ave (Route 142) at Coe Ave and Short Beach Road (Route 142), which has flooded **many** times in the past three years. In fact, this intersection has flooded **twice** in a recent **two**-**week** period. That is far more frequently than the **two times** in the past **three years** that the existing terminal has flooded.

The intersection of Hemingway Avenue at Coe Avenue and Short Beach Road is a critical juncture. All Airport passenger traffic coming from or going to Route One and I-95, as well as the Town, the City of New Haven, and most surrounding areas will have to approach or leave the Airport through that

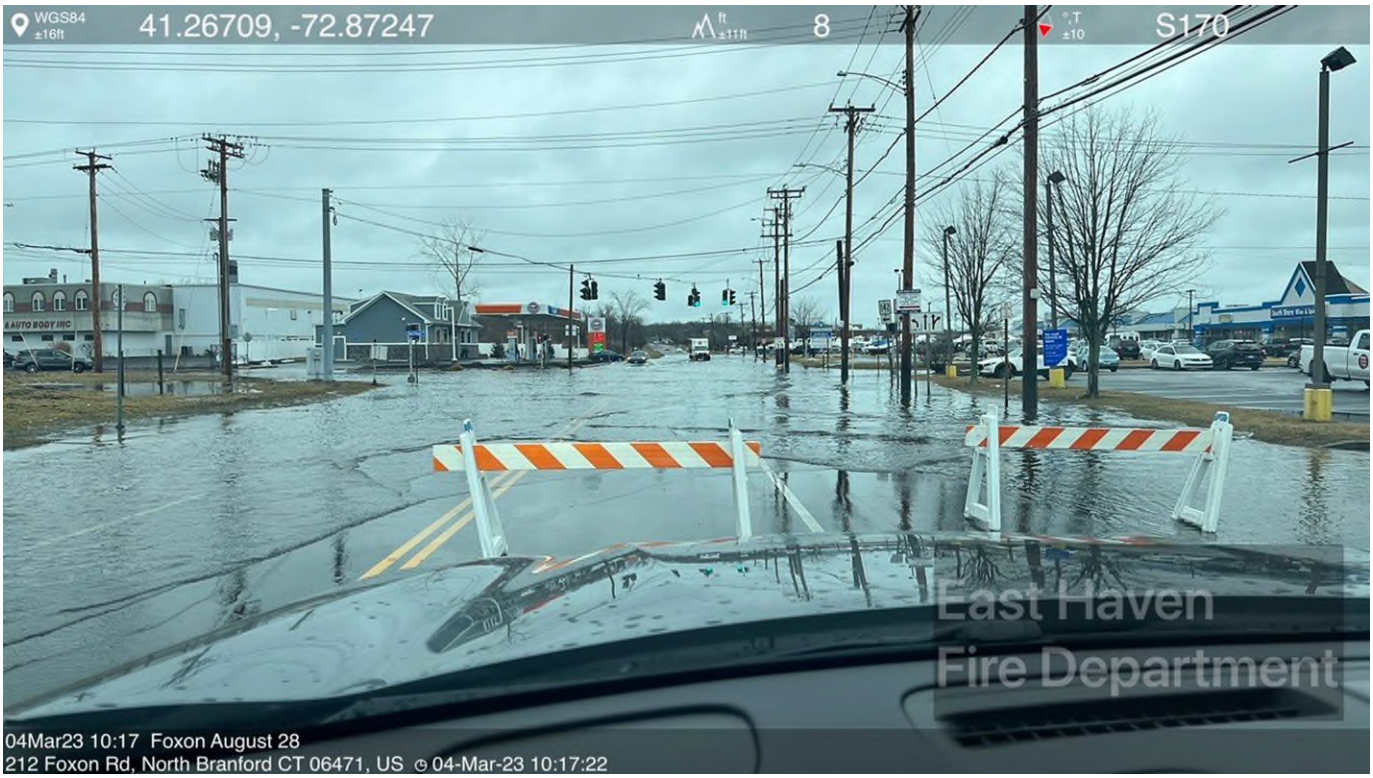
[24] Attachments E, F, G, H, and I to this document, letters from East Haven Town Officials and Public Safety Officers regarding the Proposed Action, incorporated by reference as if fully set forth herein.

intersection under the Proposed Action. This is virtually all passenger traffic to and from the Airport. If this intersection is flooded and impassable, the route to and from the Airport is essentially cut off.

Without ground vehicle access, Airport operations would be severely disrupted, passengers would be greatly inconvenienced, and emergency response to the Airport could be delayed or impeded to disastrous effect.

This flooding problem is often severe enough to require the State and/or the Town to deploy police, fire, and public works personnel to place warning signs and block off lanes – and even, at times, close the intersection down and block off entire roads and turn back traffic.[25] These articles, Coe Ave & Short Beach Intersection Flooding | East Haven, CT Patch, Mayor Cautions Motorists In Wake Of Extensive Flooding | East Haven, CT Patch, As flooding in East Haven continues, town officials plan for future remediations (nhregister.com), and the following photos provide a sense of the of the severity of the flooding problem at the intersection of Coe Ave., Hemingway Ave., and Short Beach Rd. (some are facing north, south or east, but all are of the same problematic intersection):

[25] The State plays a role because this is a State road.




3/4/23 Note, although the Date/Time Stamp on the photo is "North Branford," the next photo clarifies that this is just a longer view of looking at the flooding on Hemingway Ave. in East Haven.


WGS84
±26ft 41.26700, -72.87250
ft
±11ft 3
°,T
±10 SE150
East Haven
Fire
Department
04Mar23 10:17 Foxon August 28
28 Hemingway Ave, East Haven CT 06512, US 04-Mar-23 10:17:32

3/4/23


WGS84
±16ft
41.26666, -72.87255
ft
±11ft
8
°,T
±10
E97
East Haven
Fire
Department
04Mar23 10:17 Foxon August 28
28 Hemingway Ave, East Haven CT 06512, US
04-Mar-23 10:17:45

3/4/23


WGS84
±17ft 41.26574, -72.87271
ft
±13ft 9
°,T
±10 S168
East Haven
Fire
Department
04Mar23 10:18 Foxon August 28
667 Coe Ave, East Haven CT 06512, US 04-Mar-23 10:18:35

3/4/23


12/23/22


3/4/23

12/16/05


12/12/08

The Town's public safety personnel report that at this intersection, severe flooding occurs 10 to 15 times a year.[26]

Public safety experts agree that it is unsafe to drive through standing water where you cannot see the roadway, which is often the case at this intersection. If this intersection is impassable, access to and from the Airport would essentially be cut off. GPS systems, which many drivers will rely on, will not be able to "recalculate" to an alternate route to the new access road, because there isn't one.

Passengers anxious to avoid missing their planes will become even more agitated drivers, exacerbating an already dangerous situation, and some may recklessly try to go through the intersection, despite safety pleas not to do so. This can lead to further complications as safety personnel and vehicles need to get through to rescue stranded drivers. In the other direction, vehicles attempting to leave the Airport will back up on the airport access roadway and internal airport roads.

This flooding is significant during storm events but is experienced regularly at other times as well, for instance when tidal action is especially pronounced due to the confluence of a high tide with a full moon and strong winds. The flooding comes from the nearby marsh land and, thus, is not necessarily related to major storm events. It is also unpredictable. The loss of wetlands at the Airport site from the Proposed Action and the increase in impervious surfaces and the filling and raising in elevation of the new airport facilities is likely to make this flooding worse.

**Governmental Attempts to Solve the Flooding Problem at the Intersection Have Been Unsuccessful to Date**

The Connecticut Department of Transportation ("CTDOT") is well aware of these flooding problems, as this is a state road. To date, CTDOT has not been able to offer a solution due to the physical characteristics of the road and the surrounding area. Moreover, the flooding issue has been widely known for some time – well before the Proposed Action was developed – and has been the subject of previous governmental efforts to solve it.

[26] Email dated April 28, 2023 from Fire Chief Marcarelli re flooding Coe/Hemingway Short Beach, included as Attachment J to this letter and incorporated by reference as if fully set forth herein.

In 2012, the South Central Regional Council of Governments (SCRCOG),[27] the designated Metropolitan Planning Organization (MPO) for the New Haven area, undertook a Hemingway Avenue/Coe Avenue Corridor Study at the request of the Town, with the assistance of CDM Smith. This study explored ways to alleviate the flooding problem on Hemingway/Coe Ave. between Short Beach Road and Proto Dr.[28]

While the proposed partial solution (raising the roadway two feet) was ultimately not implemented, the study effort demonstrates that the flooding problem in this location has been well known throughout local governments in the area, including by the City of New Haven – the owner of the Airport that appoints the majority of members of the Airport Authority Board. It is perplexing and troubling that the City would be part of an effort to promote the Proposed Action as containing a viable alternate route to provide safe and efficient ground access for getting passengers to and from the Airport when the City has been aware for years of this severe flooding problem in a critical intersection through which virtually all Airport passenger traffic would have to pass. Certainly there is no excuse for the Airport Authority and its EA consultant not to be aware of this flooding issue when they proposed the new Airport access road, and it is unconscionable that they did so anyway, without even mentioning -- much less addressing -- the flooding issue.

**New Connecticut Department of Transportation (CTDOT) Initiative to Address the Flooding at this Critical Intersection**

In July of 2022, CTDOT informed the Town that it did not believe that it could reasonably get the road entirely out of the flood elevations without significant impacts to the surrounding properties, noting that for a half-mile stretch, the roadway is well below the flood elevations – in some places by about 8 feet.[29] Nonetheless, CTDOT stated that it would be initiating a scoping phase to develop concepts to improve the situation to the greatest extent practical through a state project to address and improve the flooding.

Just recently -- in fact, since Mayor Carfora and other Town officials raised the flooding issue at the April 1 public meeting on the EA -- CTDOT reached out to the Town to inform us of a State initiative to study the problem. Specifically,

[27] Of particular note is the fact that the City of New Haven, the owner of the Airport, is a member of SCRCOG, along with the Town and other neighboring jurisdictions.
[28] Hemingway Avenue/Coe Avenue Corridor Study Final Report (SCRCOG/CDM Smith) at 8-9 included as Attachment K to this letter and incorporated by reference as if fully set forth herein.
[29] July 11, 2022 Email From Connecticut DOT Re: East Haven Drainage, included as Attachment L to this letter and incorporated by reference as if fully set forth herein.

on April 21, 2023, CTDOT sent a letter to the Mayor (and SCRCOG),[30] stating that:

> The Department of Transportation's (Department) Office of Engineering has identified the Intersection of Route 337 (Coe Avenue) and Route 142 (Hemingway Avenue) as a location of potential improvement. The purpose of the proposed project is to reduce flooding to the greatest extent feasible at the subject intersection and the surrounding roadways.
>
> CTDOT Letter at 1.

Among the potential solutions CTDOT is exploring is:

> Raising the roadway at and surrounding the Route 337 and Route 142 intersection to the greatest extent possible. It is expected that the limits of the project will extend along Route 142 (Hemingway Avenue)/ Route 337 (Coe Avenue) from Dodge Avenue to Silver Sands Road and along Route 142 (Short Beach Road) from Route 337 to Vista Drive.
>
> CTDOT Letter at 1.

Of course, this project is just in the formative stages.[31] CTDOT notes that:

> This proposed project is in the concept development stage and the Department's Project Development Unit (POU) is requesting that the Town share any additional relevant information about the location to help ensure a comprehensive and complete scoping effort. . . . If such information is available, it is requested that the Project Engineer identified below be notified by May 19, 2023, to continue coordination.
>
> CTDOT Letter at 1.

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[30] April 21, 2023 Letter from Emin Basic, P.E., Project Manager, Project Development Unit, Connecticut Department of Transportation to The Honorable Joseph A. Carfora, Mayor, Town of East Haven ("CTDOT Letter"), included as Attachment M to this letter and incorporated by reference as if fully set forth herein.

[31] CTDOT also cautions that "It should be noted that this letter does not signify a project commitment for this area. No funding has been identified and no schedule has been developed. Rather, this letter is intended to notify the Town that the Department is investigating the existing conditions at this location and to provide an opportunity for communication and collaboration. All concepts are subject to Departmental review and approval before a decision phase can be initiated." CTDOT Letter at 2. While informal communications between CTDOT and the Town indicate that CTDOT expects that a project will be initiated here, there are, of course no guarantees that it will. Moreover, there are no guarantees that a project will actually alleviate the flooding problem or could be completed in the near term.

The Town welcomes CTDOT's attempt to examine – and hopefully solve -- the serious flooding problem at this critical intersection, and looks forward to working cooperatively with the State in this effort. However, this recent initiative highlights the fact that there is a severe flooding issue in the area and underscores the fact that an honest assessment of the situation cannot find that the proposed new access road – and the route through this area of the Town necessary to reach it – meets the purpose and need of providing safe, efficient, and reliable roadway access to the airport terminal.

Given that the State effort to solve the flooding problem is only in the early formative stages, any attempt to reach such a conclusion at this point is clearly premature and inappropriate.

**The Flooding Problem Alone Causes the Proposed Action to Fall Short of Meeting the Purpose and Need of Providing Safe and Efficient Access to the Airport**

In light of the flooding phenomenon, by the EA's own standards, this access route does not meet the purpose and need of providing efficient and reliable roadway access to the terminal area. The answer to the EA's Evaluation Criteria question, "Does the alternative provide … suitable, efficient roadway access to the terminal area?" (Table 3-1 p. 3-1) must therefore be **"No."**

Yet remarkably, the EA does not even mention the flooding and simply declares that this access route **meets** the purpose and need for the Proposed Action. In fact, the EA inexplicably does not examine the unavoidable critical intersection known for frequent flooding.

In the real world, however, this flooding is severe enough that it would block access to and from the Airport, and therefore, **an alternate entrance to the Airport needs to be available in order to ensure safe and reliable access on a continuous basis.** This should have been included as an alternative for FAA consideration per regulatory requirements, and it must certainly be considered and studied now that the agency has been made aware of the flooding problem and how it undercuts the ability of the proposed access route to meet the purpose and need of the Proposed Action.

**Other Severe Traffic Issues Along the Proposed New Airport Access Route are Also Ignored by the EA**

The Town has also informed the FAA and the Airport Authority of other events that cause severe traffic issues that will interfere with vehicle access to and

from the Airport along the proposed new route. Many recurring, as well as special, Town and community functions are held at and around the Town Green, located along Hemingway Avenue, which will become the primary road for egress and ingress to the new terminal. Regularly held events include weekly summer concerts, senior citizen activities/annual events, scheduled youth recreation programs, movie nights, and family game nights.

From May through October there is at least one weekly event that takes place on the Town Green. Because there is no parking at the Town Green, crowds of pedestrians must cross Hemingway Avenue on foot to get to the Town Green. Police officers are deployed to stop traffic frequently to ensure it is safe for pedestrians to cross the road. Running the main Airport access traffic flow on Hemingway Ave. during such times is not conducive to providing "safe and efficient routes between the terminal and I-95,"[32] as the purpose and need of the Proposed Action require.

Moreover, specific annual festivities in the area, including fireworks, and the annual East Haven Fall Festival, which includes the Town's annual road race, would wreak even more havoc with the proposed Airport access route.

For example, in the past, over 7,000 people have attended the annual fireworks display, and they are packed within a very congested area of Town. For two (2) hours following the fireworks, all main and residential roadways in the Town south of Dodge Avenue remain gridlocked. This would block access to and from the Airport, including at the critical intersection of Coe Avenue by Proto Drive, through which virtually all Airport traffic would need to pass.

The annual East Haven Fall Festival, now in its 31st year, is a three-day event that takes place on the Town Green. Due to the high volume of people attending the event and a lack of parking, residents utilize parking at the shopping plaza which is located on Main Street and Hemmingway Extension. Attendees then must cross Main Street and Hemingway Avenue to reach the event. Due to the high volume of people crossing it, Hemingway Avenue between Main Street and Edward Street is closed for much of those three (3) days, so it will be unavailable as an Airport access route. Diverting Airport traffic from Hemingway Avenue onto neighborhood streets during this event may be possible, but it undercuts the purpose and need of "[p]roviding a more direct access route that avoids residential neighborhoods."[33] Moreover, it is likely to create numerous new traffic congestion points and create hazardous conditions for motorists and pedestrians alike.

[32] EA at 2-10
[33] EA at 2-10

Finally, all major roadways and most secondary residential roadways are closed to thru traffic for approximately two (2) hours in peak times during the Town road race that is held in conjunction with the Fall Festival. Local residents know to avoid travel during this time, as traffic must be rerouted into Branford and New Haven during the race. However, Airport patrons, particularly those coming from other towns and cities, are likely to be unfamiliar with the area, Thus, they may not be aware of the widespread closing of roads and the severe impact this would have on trying to reach or leave the Airport through Town roads. This traffic nightmare does not meet the purpose and need of providing safe and reliable access to the Airport.

Because of the chronic and severe flooding at a critical intersection near the proposed new access road to the Airport, and other traffic disrupting events along the necessary route through the Town to reach the access road from major arteries such as I-95 and Route 1, the Proposed Action does not provide "suitable and efficient roadway access to the terminal area," as required by the purpose and need for the Proposed Action.

At a minimum, in order to provide safe, reliable, and efficient ground access to the Airport, another access route to the Airport must be provided. One promising alternative would be to leave the existing access road open to air travelers and ensure that passengers would have a safe, on-airport means of getting from the old access road to the terminal.

**The EA Did Not Adequately Study Traffic Impacts at Critical Intersections and Other Chokepoints**

The EA notes that the "[a]ffected environment for the traffic evaluation includes intersections that could potentially be impacted by implementation of the proposed project." EA at 4-51. It goes on to note that traffic conditions are measured by level of service and 95$^{th}$ percentile queue lengths.

The EA also states that the study (Appendix K to the Draft EA) produced by FHI (the "FHI Study") evaluated certain intersections that "were identified and selected in coordination with the CTDOT." EA at 4-52. The EA concludes that existing traffic operations, in general, flow well based on the FHI Study. EA at 4-53.

The Town however now experiences substantial traffic delays that regularly require dispatch of Town police officers and other public safety officials to direct traffic. As Police Chief Lennon testified at the April 1 Public Meeting on the EA and notes in his letter attached hereto and incorporated herein as Attachment F:

> [T]he streets that are expected to carry the airport traffic are the main arteries through town. These streets are already over congested and subject to flooding and delays impacting residents, businesses, and school buses.
>
> [W]e have significant concerns about the increased traffic congestion over the bridge that connects North High Street to High Street (Route #100). This bridge (Webster Bridge) is the only route connecting the "south" half of town to the "north" end of town. During rush hour times, to include the beginning and end of school, the bridge and all surrounding streets experience extreme traffic congestion. By moving the terminal to the proposed location in East Haven, motorists heading to the airport who are traveling on Interstate 95 southbound will utilize Exit 52. When coming off Exit 52, motorists will only be able to turn left onto North High Street and must go over the Webster Bridge to go toward the airport. This increased level of traffic will exacerbate the already serious traffic problem as previously outlined.[34]

Given the very serious concerns that the Town has regarding existing traffic and the potentially harmful results associated with adding a large volume of additional vehicles, unfamiliar with local roads, and often in a hurry, as stated previously the Town commissioned an independent traffic study and report VN Report.

The VN Report notes several deficiencies with the FHI Study. These deficiencies include:

1. A failure to use the evening peak hour to gauge the impact on the existing traffic peak periods. The Traffic Study prepared for the EA used a morning and a midafternoon peak hour both of which are lower volume periods than the evening peak period. The failure to use the evening peak period means that the EA failed to gauge the ultimate effect the airport traffic will have on the current peak commuter hour within the study area. As noted in the VN Report: "Even though the airport generated peak traffic does not occur during the evening, it is important to analyze how that airport generated traffic would affect the overall capacity and flow throughout the roadways during the existing heavy evening commute peak."

[34] Attachment F at 2 of 3.

2. The Traffic Study prepared for the EA was conducted in December of 2021 thus failing to take into account seasonal variations due to the popular beaches located within the Town.

3. The Traffic Study prepared for the EA fails to take into account several intersections that will be impacted by airport traffic including:
    a. Hemingway Ave at Coe Ave and Short Beach Road which experiences significant flooding as already discussed.
    b. Frontage Road at Forbes Place which currently operates at LOS F during morning peak and during both peak hours the 95$^{th}$ percentile exceeds the available storage length.
    c. Forbes Place at Kimberly Ave. This heavily trafficked intersection experiences a high number of crashes and already operates at a LOS F during the existing evening peak. VN Engineers also observed high delays and queues throughout multiple times of the day.

4. A failure to discuss the nature of the crashes in the study area that have led to an unusual amount of fatal crashes during the study period.

5. A failure to include additional readily available pedestrian or bicycle related crash information. This information should be included for a proper investigation into the safety of the study area for the increased volume of traffic.

6. Incomplete information is provided in the FHI Report that is readily available as it is in Appendix H to the FHI Report. The FHI Table 6-1 is a summary table and does not provide information that would be valuable to consider including significant delays at certain times and 95$^{th}$ percentile queuing. Discussion of these impacts within the report would provide a more transparent summary of the impact that the project will have on the study area. Additionally, it would provide more detail into areas that would require further mitigation even if the overall intersection LOS is acceptable.

7. The EA includes a recommendation that a signal be installed at the intersection of Coe Avenue with Proto Drive to improve the level of service. Without this signalization, the approach of Proto Drive will experience a delay of **approximately 18 minutes** which would be unacceptable. Based on the full details of the delays (by reviewing data sets available in Appendix H to Appendix K to the Draft EA)

additional detailed mitigations or improvements at other locations would also be highly valuable.

8. The roadway of Proto Drive will need to be improved from its existing condition to handle the increased traffic demand from the airport expansion. The existing pavement is 30’ wide and in poor condition. There are not any pavement markings along Proto Drive, except for the stop bar at the intersection. Furthermore, large trucks have been observed to frequently park on the roadway and pedestrians have been observed walking in the road since there are no sidewalks along the roadway. Since Proto Drive leads to an industrial area, the traffic turning from Coe Avenue on to Proto has a high percentage of heavy vehicles. It has been observed that these large vehicles have difficulty maintaining their lane while maneuvering the turn. If there is to be increased traffic on Proto Drive, the turning radius at the intersection will need to be investigated. Any intersection geometry improvements will need to accommodate these large truck turning movements as well as the added airport traffic. **These additional improvements to Proto Drive should have been included in the Study as they will be essential under this project.**

See Attachment D, VN Report at 2, 3 and 4 of 4.

A close examination of the FHI Study and its own appendices supports the conclusions drawn by VN regarding the methodologies and analysis utilized by FHI. It is very unclear as to how FHI utilized proportionate values, i.e. what percentage of traffic is assigned to the Town access routes and what percentage is assigned to the New Haven access routes, for FHI’s conclusions regarding Existing, No Action, and Proposed Action traffic volumes in the Town as opposed to New Haven. This is of course a key issue and it is impossible to determine how this calculation was made and applied.

Without additional information regarding how the daily passenger and employee trips were considered and attributed for the baseline, No Action and Proposed Action components of the FHI Study it is difficult to assess and respond to.

These are material deficiencies in the FHI Study which is utilized in the EA to determine traffic related impacts associated with the Proposed Action. The analysis and conclusions drawn in the EA are thus unreliable. To conduct an honest and thorough assessment of the Proposed Action’s traffic impacts, the FAA must require an updated traffic study that considers the relevant factors just outlined.

The EA, utilizing the faulty FHI Study, concludes that the only traffic-related impact associated with the Proposed Action that will need to be addressed is the impact of the airport traffic at the intersection of Coe Avenue and Proto Drive. This is proposed to be mitigated via installation of a signalized intersection and widening of Proto Drive on the westbound approach.

The FHI Study does note that several of the intersections studied are already experiencing unacceptable levels of service which will worsen if the Proposed Action is undertaken[35] and recommends that CTDOT and/or the Town study, monitor and adjust lane configurations and traffic signals.[36] These recommendations are not for the Authority; they are for outside agencies and it is unclear how they would be enforceable as mitigation.

The EA recognizes that the Proposed Action will have an impact on traffic operations in the Town but concludes these are not expected to cause a significant delay. The EA relies on an expectation that CTDOT and its Office of State Traffic Administration ("OSTA") will evaluate the need for mitigation or traffic safety measures and require further coordination and implementation of these measures, whatever they might be.[37]

The FAA has not established a Significant Impact Threshold for Traffic, it does however require consideration of the disruption of local traffic patterns and substantial reduction in levels of service of roads serving an airport and its surrounding communities.

It is clear from the information available that the Proposed Action will be the cause of significant disruption of local traffic patterns and a reduction in the level of service of the roads serving the airport and its surrounding communities. The mitigation measure proposed is inadequate to address this disruption and reduction in service. Taking these factors into consideration, as mandated, one can only conclude there will be a significant impact on traffic operations if the Proposed Action is undertaken.

**Section 4(F) and Section 6(F) Resources**

Environmental processing of federally approved transportation projects must include consideration of potential impacts on parks, pursuant to Department

[35] EA Table 5-11 notes that High Street and & I-95 north bound, High Street & Kimberly Avenue, Hemingway Avenue & Saltonstall Parkway, Hemingway Avenue & Main Street, and Coe Avenue & Proto Drive all experience unacceptable conditions.
[36] EA Appendix K at 51
[37] EA at 5-43.

of Transportation Act Section 4(f), now codified at 49 U.S.C. 303. That Act states that:

> (c) Approval of Programs and Projects. . . . [T]he Secretary may approve a transportation program or project . . . requiring the use of publicly owned land of a **public park**, **recreation area**, or wildlife and waterfowl refuge **of** national, State, or **local significance**, or land of an **historic site of** national, State, or **local significance** (**as determined by the** Federal, State, or **local officials having jurisdiction over the park**, area, refuge, or site) **only if**-
>
> (1) **there is no prudent and feasible alternative to using that land**; and
>
> (2) **the program or project includes all possible planning to minimize harm to the park**, recreation area, wildlife and waterfowl refuge, or historic site **resulting from the use**.
>
> 49 U.S. C. 303(c) (emphasis added).

Congress felt so strongly that projects dependent on major federal action should not interfere with local parks that it provided that if such interference would occur, the project could not proceed unless there is no prudent and feasible alternative, and even then, only if all possible mitigation is undertaken to minimize the harm to the park. *Id.*

This is a very high standard to meet, and it is understandable that those promoting transportation projects and conducting environmental analyses would try to avoid being subject to such strictures. However, the importance Congress placed on avoiding potential impacts on parks underscores the necessity of conducting such environmental analyses honestly and thoroughly.

FAA guidance recognizes that:

> "Resources that are protected by Section 4(f) are publicly owned land from a public park . . . of . . . local significance; and publicly or privately owned land from an historic site of . . . local significance." Order 1050.1F, Exhibit 4-1. Significance Determination for FAA Actions, p. 4-6.

There are a number of such parks and public lands in the Town that warrant examination of potential Section 4(f) impacts, including the Town Beach, the Town Green, Momauguin School, East Haven Little League Park, Memorial Field, Margaret Tucker Park, Tuttle School, Overbrook School, and Massachusetts Ave Park.

It is critical to understand that the "use" of a park that triggers Section 4(f) is not limited to actual physical use. The EA acknowledges that,

> According to Section 4(f) of the U.S. Department of Transportation Act, a use occurs when the property is permanently incorporated into the transportation project through a taking of land; when it is temporarily occupied; or **when its features are substantially impaired such that its value as a 4(f) resource will be meaningfully diminished or lost (termed a constructive use)**. A constructive use may result from **noise**, vibration, aesthetic changes, **restricted access**, or ecological intrusion." EA at 4-23 (emphasis added).

The EA further states that, "According to CFR Part 774.15, a constructive use occurs when … the project results in a restriction in access which substantially diminishes the utility of the property." EA at 5-17, n. 95.

**The EA is Dismissive of the Potential for the Proposed Action to Use Parks Through Noise**

The EA finds that:

> "[t]he Proposed Action is not expected to result in a use under Section 4(f) of the U.S. Department of Transportation Act . . .Taking into consideration projected noise contours from Proposed Action, as discussed in Section 5.9, it has been determined that no Section 4(f) or Section 6(f) resources would be impacted." EA at 5-17.

This relates to a potential taking of parkland due to noise impacts from flights. However, since the noise contours were developed through flawed analysis of anticipated commercial aircraft operations, as discussed supra, the contours are unreliable and must therefore be redone. Only after appropriate noise contours are developed may a thorough analysis of the impacts of aircraft noise on parks be undertaken.[38]

At that time, the FAA should carefully look at the noise impacts on the Town Beach, and other nearby parks, such as Momauguin School, East Haven Little League Park, Memorial Field, Margaret Tucker Park, Massachusetts Ave. Park, and Overbrook School. Moreover, such analysis should go beyond merely the comparison of the 65 DNL contours to the location of the parks, as was

[38] Moreover, the 4(f) analysis was artificially restricted by limiting the "study area" to properties within ½ mile from the airport. EA at 4-23 and Figure 4-6.

apparently done in the EA process.[39] The FAA's own noise table, which declares parks to be compatible land uses if located outside of the 65 DNL contour, states that:

> **The designations contained in this table do not constitute a federal determination that any use of land covered by the program is acceptable or unacceptable under Federal, State, or local law**. **The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses**.

EA Appendix I at 10 (Notes for Table 1) (emphasis added).[40]

The Town has certainly not agreed that overflight noise constitutes a taking of a Town park only if it is determined to be greater than 65 DNL under the FAA's noise model.

[39] "Taking into consideration projected noise contours from Proposed Action, as discussed in Section 5.9, it has been determined that no Section 4(f) or Section 6(f) resources would be impacted." EA at 5-17.

[40] The Town is aware that the FAA has sometimes taken the position that this provision does not mean what it quite clearly says on its face -- that the noise compatibility table does not supersede the values of local authorities concerning the compatibility of specific land uses with levels of noise. The agency position has sometimes been styled as saying simply that the FAA compatibility findings do not override local considerations in the exercise of local zoning decisions. This would essentially render the FAA provision superfluous, as under the allocation of power between the federal government and the states under the U.S. Constitution, localities do not need FAA's permission to zone lands in their jurisdiction as they see fit. Thus it is implausible that this note is simply the FAA's expression that it is not attempting to unconstitutionally intrude on local governments' constitutional prerogatives. In the context of a regime in which the FAA is mandated to consult with local authorities on whether the impact of aviation noise on a park constitutes a constructive taking of the park, such consultation would be rendered meaningless if the FAA were allowed to ignore the local authority's views and strictly apply its own noise compatibility standards, whose appropriateness the agency itself has called into question by embarking on a five-year survey/investigation of whether the standards should be changed.

Moreover, while the FAA guidance does allow use of the DNL metric to determine whether there has been a taking of a park via noise,[41] this is not necessarily tied to the 65 DNL contour. Instead, the FAA guidance says that:

> "Substantial impairment occurs only when the protected activities, features, or attributes of the Section 4(f) property that contribute to its significance or enjoyment are substantially diminished. This means that the value of the Section 4(f) property, in terms of its prior significance and enjoyment, is substantially reduced or lost. For example, noise would need to be at levels high enough to have negative consequences of a substantial nature that amount to a taking of a park or portion of a park for transportation purposes."
>
> 1050.1F Desk Reference (v2) February 2020 Department of Transportation Act, Section 4(f) (last updated 7/2015) ("FAA Desk Reference") at 5-6.

Further to that point, the EA recognizes that:

> According to Section 4(f) of the U.S. Department of Transportation Act, a use occurs . . . **when its features are substantially impaired such that its value as a 4(f) resource will be meaningfully diminished or lost (termed a constructive use)**. A constructive use may result from **noise** . . ." EA at 4-23 (emphasis added.)

Although FAA guidance allows the agency to apply its existing Noise Compatibility Standards in making determinations on whether the severity of aircraft noise impacts constitutes a constructive use of 4(f) properties that are "traditional recreation areas," strict adherence to the FAA's existing standards is not warranted for two reasons. First, the Section 4(f) guidelines require the FAA to consider the views of the local owners/operators of the parks in question in assessing whether there has been a constructive use. Second, the FAA, itself, has undertaken a study to determine whether its current standards are still appropriate. The Neighborhood Environmental Survey and related FAA analysis, has been

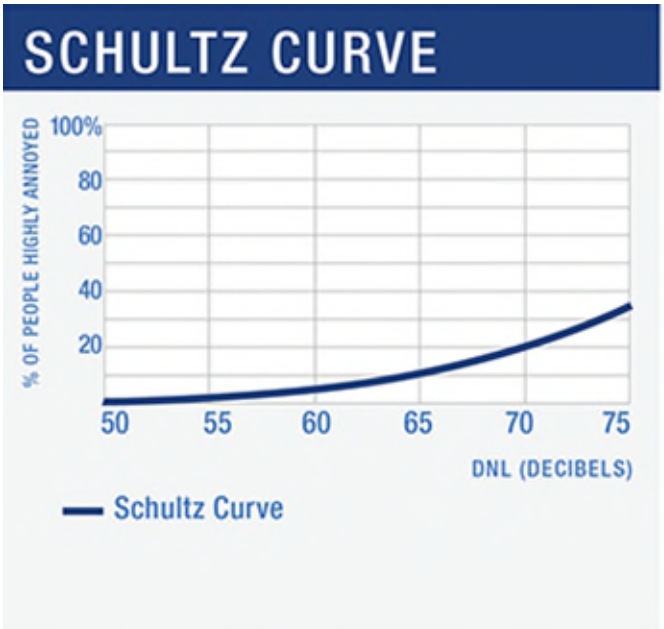
[41] "The land use compatibility guidelines in 14 CFR part 150 (the part 150 guidelines) may be relied upon by the FAA to determine whether there is a constructive use under Section 4(f) **where the land uses specified in the part 150 guidelines are relevant to the value, significance, and enjoyment of the Section 4(f) lands in question**. The FAA may rely on the part 150 guidelines in evaluating constructive use of lands devoted to traditional recreational activities." FAA Desk Reference at 5-7.

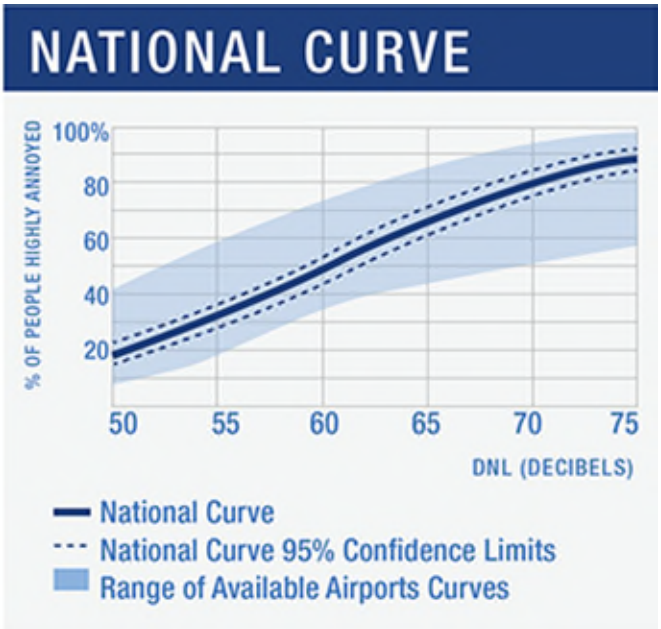
underway since 2015, and the agency has released preliminary results,[42] which show a dramatic change in the annoyance level of persons subjected to aircraft noise. In fact, the FAA a few days ago published a Federal Register Notice soliciting public input on whether its noise standards should be modified.[43]

As set forth below, the outdated 1970s-era Schultz Curve, which is the basis for the FAA's use of the 65 DNL as the threshold noise level for impacts on parks (as well as residences), shows that roughly 10% of people subjected to that noise level were highly annoyed by it. In the National Curve, based on the 2015 survey, **double** that number **20%** of respondents were annoyed by aircraft noise levels of **50 DNL** and a whopping **65%** of respondents were highly annoyed by aircraft noise levels of **65 DNL**.

[42] Neighborhood Environmental Survey | Federal Aviation Administration (faa.gov). See also Neighborhood Environmental Survey Frequently Asked Questions | Federal Aviation Administration (faa.gov)

[43] "First, the FAA is reviewing research on the effects of exposure to aviation noise, including the correlation of exposure to aviation noise with adverse health impacts, economic impacts, and annoyance. Second, the FAA is reviewing its standard noise metric that describes exposure to aircraft noise, and potential revisions to the choice of standard metric(s). Third, the FAA is reviewing its definition of the threshold of significant noise exposure for actions analyzed under the National Environmental Policy Act of 1969 to determine if that threshold remains appropriate or requires revision. Last, the FAA is examining the level of aircraft noise exposure below which land uses are considered "normally compatible" with airport operations, as that term is defined in the regulations implementing the Aviation Safety and Noise Abatement Act of 1979. This includes consideration of the criteria for application of noise mitigation measures to address adverse noise exposure in areas that the FAA currently considers to be "normally compatible" with airport operations under FAA's regulations. The FAA will consider how changes to the civil aviation noise policy may better inform agency decision making, the types of impacts it considers in making decisions (e.g., community annoyance, certain types of adverse health impacts highly correlated with aviation noise exposure), and potential improvements to how the FAA analyzes, explains, and presents changes in exposure to civil aviation noise." Request for Comments on the Federal Aviation Administration's Review of the Civil Aviation Noise Policy, Notice of Public Meeting at p. 3. Docket No.: FAA-2023-0855. 88 FR 26641-26642 (May 1, 2023)




Thus, in assessing whether there has been a constructive use of a park due to aircraft noise, slavish adherence to an outdated -- and clearly inaccurate -- compatibility standard is totally inappropriate. In addition to paying close attention to the views of Town officials, the FAA should put realistic aircraft operating data into its AEDT and run the noise contours out to the 50 DNL contour in order to help determine whether there would be a constructive use of Town parks from aircraft noise under the Proposed Action alternative.

The Town points out that the Town Beach is a particularly quiet area whose tranquility is an essential quality of its appeal, that is, the beach is "located in a quiet setting . . . where the setting is a generally recognized feature or attribute of the site's significance." See FAA Desk Reference at 5-7. The Town has taken steps to maintain the Town Beach's quietude, and therefore, per FAA guidance, adherence to the 65 DNL standard in assessing whether the Town Beach would be constructively taken by aircraft noise is inappropriate in any case. *Id.*

The FAA guidance points out that:

> When assessing use of Section 4(f) properties located in a quiet setting and where the setting is a generally recognized feature or attribute of the site's significance, the FAA carefully evaluates reliance on the part 150 guidelines. The FAA must weigh additional factors in determining whether to apply the thresholds listed in the part 150 guidelines to determine the significance of noise impacts on noise sensitive areas within Section 4(f) properties (including, but not limited to, noise sensitive areas within national parks, national wildlife and waterfowl

refuges, and historic sites including traditional cultural properties). The FAA may use the part 150 land use compatibility table as a guideline to determine the significance of noise impacts on Section 4(f) properties to **the extent that the land uses specified bear relevance to the value, significance, and enjoyment of the lands in question.** However, the part 150 guidelines may not be sufficient for all historic sites as described above, and **the part 150 guidelines do not adequately address the impacts of noise on the expectations and purposes of people visiting areas within a national park or national wildlife refuge where other noise is very low and a quiet setting is a generally recognized purpose and attribute.**

FAA Desk Reference at 5-7.

As the owner and manager of the Town's parks, the Town believes that even noise levels under 65 DNL are incompatible with relaxing recreation areas such as the Town Beach, and this should be taken into account by the FAA, as the agency's own guidance states that:

**The responsible FAA official must consult all** appropriate Federal, state, and **local officials having jurisdiction over the affected Section 4(f) properties when determining whether project-related impacts would substantially impair the resources**.[44]

FAA Desk Reference at 5-7.

**The EA is Unduly Dismissive of the Potential for the Proposed Action to Take Parks by Restricting Access**

Aircraft noise is not the only potential means for determining that a constructive use of a park will occur due to the Proposed Action. Indeed, the EA notes that:

According to Section 4(f) of the U.S. Department of Transportation Act, a use occurs . . . **when its features are substantially impaired such that its value as a 4(f) resource will be meaningfully diminished or lost (termed a constructive use)**. A constructive use may result from . . . **restricted access** . . . ." EA at 4-23 (emphasis added.)

[44] While the guidance goes on to say that "Following consultation and assessment of potential impacts, the FAA is solely responsible for Section 4(f) applicability and determinations" (FAA Desk Reference at 5-7), this does not mean that the FAA may skip the required step of consultation with appropriate local officials, which is intended to help inform the FAA determination. The Town is unaware of any consultation with appropriate Town officials, as is required by FAA's own guidance.

Thus, a restriction on access to a park may constitute a constructive use under Sec. 4(f). [45] However, the EA simply states without analysis that:

> "Additionally, **any proximity impacts resulting from the increased traffic flow would not substantially impair or interfere with activities, features or attributes that qualify resources for Section 4(f) or Section 6(f) protection.** See Section 5.11 for Traffic Impact Analysis." EA at 5-17 (emphasis added).

The EA provides a cursory look at a few parks (See EA Figure 4-6), but it does not appear that there was any analysis of the traffic impacts on the Town Green as part of the EA process.[46] For instance, the Town Green is not shown on the EA maps, e.g., Figure 4-6, and the EA makes no mention of potential impacts on it.

Moreover, there has certainly been no consultation with Town officials[47] on potential impacts on the Town Green or any other Town parks as required by FAA guidance.

> "The FAA is responsible for soliciting and considering the comments of . . . the appropriate official(s) with jurisdiction over the Section 4(f) property. Evaluations and determinations under Section 4(f) must reflect consultation with these . . . officials. However, the ultimate decisionmaker for Section 4(f) determinations is the FAA.
>
> 1050.1F FAA Desk Reference (v2) February 2020 at 5-3.

The consultation is important from the earliest stages of planning, as "Consultation with agencies having jurisdiction over any public parks, recreation areas, waterfowl or wildlife refuges, or historic sites assists in

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[45] *See also* Order 1050.1F, Exhibit 4-1. Significance Determination for FAA Actions, p. 4-6. ("Department of Transportation Act, Section 4(f) Significance Threshold: "The action "constitutes a 'constructive use' based on an FAA determination that the aviation project would substantially impair the Section 4(f) resource. Resources that are protected by Section 4(f) are publicly owned land from a public park . . . of . . . local significance; and publicly or privately owned land from an historic site of . . . local significance. Substantial impairment occurs when the activities, features, or attributes of the resource that contribute to its significance or enjoyment are substantially diminished.")

[46] As noted above, the "study area" for assessing impacts on Section 4(f) properties was artificially limited to properties within ½ mile of the airport. EA at 4-23 and Figure 4-6.

[47] "In the case of public parks, recreation areas, and wildlife and waterfowl refuges, the officials with jurisdiction are the officials of the agency or agencies that own or administer the property in question, and have authority to represent the agency on matters related to the property." FAA 1050.1F Desk Reference at 5-4. For the parks in question, that is the Town, whose officials thus must be consulted by the FAA on 4(f) issues relating to those parks.

identifying Section 4(f) properties."[48] *Id.* Such assistance is important, because "The FAA should identify as early as practicable in the planning process section 4(f) properties that implementation of the proposed action and alternative(s) could affect." FAA Desk Reference at 5-4.[49]

Preparation of the EA would have benefitted from early consultation with the Town to identify potential Section 4(f) properties, but the Mayor's office is not aware of any such consultation with Town officials by those preparing the EA.[50]

Had the Town been so consulted, the Town would have mentioned at a minimum, that potential impacts on the following parks should be examined: the Town Beach,[51] the Town Green,[52] Momauguin School,[53] East Haven Little League Park,[54] Memorial Field,[55] Margaret Tucker Park,[56] Tuttle School,[57] Overbrook School,[58] and Massachusetts Ave. Park.[59] Of these, only Memorial Field appears on the EA Section 4f/6f Map. EA Figure 4-6.

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[48] See also "Consultation with agencies having jurisdiction over any public parks . . . assists in identifying Section 4(f) properties." FAA Desk Reference at 5-1.

[49] Moreover, FHWA guidance, which FAA states that it consults and finds instructive, though it is not binding on the agency (per FAA Desk Reference at 5-2 to 5-3), states that "Early and frequent coordination with the officials with jurisdiction can lead to the identification and resolution of problems and issues that could otherwise delay the development of a project. In a similar manner, coordination with the officials can, and indeed should, result in the identification and implementation of mutually acceptable mitigation measures to minimize harm. As such, coordination with the officials with jurisdiction can be beneficial not only in terms of project streamlining, but also in resource protection." Coordinating Section 4(f) Compliance | FHWA (dot.gov)

[50] The FAA's obligation to consult with the owner/operators of Section 4(f) properties is an ongoing obligation, not "one and done." "When a draft Section 4(f) evaluation is prepared, it must be provided to the official(s) with jurisdiction over the Section 4(f) resource …. The FAA normally allows a minimum 45-day review period." FAA Desk Reference at 5- 1. Moreover, if the FAA does undertake a rigorous Section 4(f) analysis of the property, and it believes that there is a use of a 4(f) property, "Evidence of concurrence or a description of efforts to obtain concurrence of Federal, state, or local officials having jurisdiction over the Section 4(f) property regarding the proposed action and/or alternative(s) that require the use of the Section 4(f) property and the measures planned to minimize harm must be part of the Section 4(f) documentation." FAA Desk Reference at 5-4. The Town looks forward to working cooperatively with the FAA to identify and analyze Section 4(f) properties in the Town.

[51] 147 Cosey Beach Ave. (recreational sandy beach, splash pad, playground on beach, grove picnic tables, 2 Pavilions).

[52] 153 Main St. (Town-wide activities, concerts, events).

[53] 99 Cosey Beach Rd. (playground).

[54] 165 Cosey Beach Ave. (multiple baseball fields).

[55] Dodge Ave. (Baseball field, 2 Softball fields, playground).

[56] 280 Main St. (Walkways, benches).

[57] 108 Prospect Rd. (Basketball court, playground).

[58] 54 Gerrish Ave. (playground, open field).

[59] 69 Boston Ave. (playground, basketball court).

As the Town has advised the FAA and the Airport Authority, both in the Mayor's October 7, 2022 letter to Colleen M. D'Alessandro, Regional Administrator, New England Region, Federal Aviation Administration (included as Attachment I), and in statements by the Mayor and other Town officials at the April 1 public hearing on the EA, the Town Green is the focal point and the heart of civic life in the Town. Town and community functions are regularly held there, for example weekly summer concerts, senior citizen activities/annual events, regularly scheduled youth recreation programs such as movie nights, family game nights, annual holiday events, including fireworks,[60] and the annual (for 30 years) East Haven Fall Festival,[61] including the Town's annual road race.[62] These are an important part of the Town's character and appeal to its residents.

The Town takes pride in its efforts to bring the community together by hosting a variety of events for residents. Many of these events would be directly impacted or may no longer be feasible if the Airport terminal is moved to the Town and passenger access is solely through local Town streets. The analysis of the Proposed Action gives no consideration at all to the impact of the proposed new access road (and the necessary route through the Town to reach it) on Town and community events that take place at the Town Green.

The Town Green is located along Hemingway Avenue, which will become the primary road for egress and ingress to the new terminal. Because parking at the Town Green is limited, those attending events typically park in the parking lots of neighboring businesses. To get to the Town Green after parking, people must cross Hemingway Avenue on foot. When these events on the Green take

[60] The Town hosts an annual fireworks celebration in the month of June. This is one of the most attended Town events of the year. In previous years, the volume of people attending the fireworks has been estimated to exceed 7,000 people, all within a congested area. Following this display, the Town experiences gridlocked traffic on all main and residential roadways south of Dodge Avenue for approximately two (2) hours. This includes the intersection of Coe Avenue by Proto Drive, a critical intersection for reaching proposed new access road to the relocated terminal at the Airport.

[61] The annual East Haven Fall Festival takes place on the Town Green over the course of three (3) days. Due to the volume of people attending the event, Hemingway Avenue between Main Street and Edward Street is closed for much of those days. Diverting Airport traffic from Hemingway Avenue onto neighborhood streets during this event will cause numerous traffic congestion points and will create hazardous conditions to motorists and pedestrians alike.

[62] During this road race, all major roadways, and most secondary residential roadways, are closed to thru traffic for approximately two (2) hours during peak times. This is a well-known event by Town residents who avoid travel during this time. Traffic must be rerouted into Branford and into New Haven during the race. The additional volume of Airport traffic, particularly those coming from other towns and cities and unfamiliar with the area and trying to reach or leave the Airport, will be a very complex, if not an impossible traffic challenge to overcome.

place, pedestrian traffic and street crossings are high in volume and frequency, and additional police officers must be hired on overtime to ensure pedestrian/increased traffic safely.

Since this is a heavily traveled main roadway, officers must stop traffic to ensure it is safe for pedestrians to cross the road. During the warmer months of the year, there is at least one weekly event that takes place on the Town Green requiring crowds of pedestrians to cross the road. Increased vehicle traffic due to people going to and from the Airport would either make a complicated safety situation exponentially more difficult or would be totally incompatible with the Town activities.

**Conclusion**

For the reasons set forth above, the Town has significant concerns over the likely "constructive use" of the Town Green, the Town Beach and other Town parks, which can result from noise impacts or when "a project results in a restriction in access which substantially diminishes the utility of the property." These potential impacts were required to be studied and evaluated as part of the DOT Act Section 4(f) analysis, but there is no evidence in the EA that these impacts were considered. These impacts should therefore be studied in a new EA or a more rigorous Environmental Impact Statement.

**The EA Does Not Adequately Identify or Discuss Apparent Significant Environmental Impacts From The Proposed Action On The Affected Environment**

NEPA and the Council on Environmental Quality regulations implementing NEPA (40 CFR §§ 1500-1508), require a federal agency to prepare an EIS when "major federal actions significantly affecting the quality of the environment" are proposed. 42 USC § 4332(C). NEPA was enacted by Congress in 1969 with the goal of protecting human health and the environment and promoting environmental quality. A federal agency such as the FAA must prepare an EIS if there is a possibility that a Proposed Action may have a significant impact on the human environment. Direct, indirect and cumulative impacts must be considered when determining significance.[63]

An environmental assessment is a preliminary document that can be the basis for a Finding of No Significant Impact ("FONSI") or a finding that an EIS, which fully considers the Proposed Action pursuant to federal standards, must be conducted. An environmental assessment must be prepared in strict compliance with applicable laws and regulations to support a FONSI. The FAA

[63] Order 1050.1F, Paragraph 3-1.3 Actions Normally Requiring an Environmental Impact Statement and 4-2 Consideration of Impacts.

has noted that "the determination of a significant impact, as used in NEPA, requires consideration of both context and intensity (see 40 CFR § 1508.27)." The agency has further stated, "For a site-specific action, significance would usually depend upon local impacts. Both short and long-term impacts are relevant." It is of course local impacts that are of great concern to the Town. Given the scope of the Proposed Action, the universe of direct, indirect and cumulative impacts will be intense.

In determining whether an EIS is needed, "The FAA uses thresholds that serve as specific indicators of significant impact for some environmental impact categories. FAA proposed actions that would result in impacts at or above these thresholds require the preparation of an EIS, unless impacts can be reduced below threshold levels."[64]

For some categories, the FAA has not established quantitative significance thresholds, but "the FAA has identified factors that should be considered in evaluating the context and intensity of potential environmental impacts. If these factors exist, there is not necessarily a significant impact. Some impact categories may have both a significance threshold and significance factors to consider. In these instances, a conclusion of significance can be determined based on the factors to consider even if the impacts do not meet the significance threshold criteria."[65]

The basic NEPA standard requires a determination of whether an environmental impact is significant. As noted in the EA, per these FAA requirements the significance determination requires examination of (1) the context, or location and nature of the area in which the impact will be experienced, and (2) the intensity of the impact looking at several factors including the degree to which public health or safety is affected. EA at 5-62.

As stated in the EA:

> "The FAA uses thresholds that serve as specific indicators of significant impact for some environmental impact categories. FAA proposed actions that would result in impacts at or above these thresholds require the preparation of an EIS, unless impacts can be reduced below threshold levels. Quantitative significance thresholds do not exist for all impact categories; however, consistent with the CEQ Regulations, the FAA has identified factors that should be considered in evaluating the context and intensity of potential environmental impacts. If these factors exist, there is not necessarily a significant impact. Some impact

[64] Order 1050.1F, Paragraph 4-3.3 Significance Thresholds.
[65] *Id.*

categories may have both a significance threshold and significance factors to consider."

EA at 5-1, footnote 78.

Of course, the FAA may also consider other factors in making its determination of significance.

The EA fails to consider several environmental impacts and unilaterally dismisses others without consideration or analysis. Based on this cursory and faulty foundation, the EA concludes there are no significant impacts. This is incorrect, as has been noted in numerous public statements being provided to the FAA, including written comments provided by Town officials and the Independent Expert Reports included as part of this package.

**Tidal and Inland Wetlands Will be Significantly Impacted by the Proposed Action**

**Tidal Wetlands**

The EA notes that the recommended runway extension discussed in the MPU was reduced by 60 feet to avoid construction impacts within tidal wetlands. EA at 1-9. This point is made a few more times in the EA though the qualifier that the avoidance relates only to construction impacts is omitted. The Proposed Action will, in fact, impact the tidal wetlands due to the unavoidable consequences of the proposed build out immediately adjacent to them. This involves the loss of a large quantity of inland wetlands, the installation of impervious surfaces with attendant stormwater discharges, the placement of fill, and the volume and nature of the uses proposed (4,000 additional parking spaces, air traffic and shuttle bus services) all leading to atmospheric deposition of pollutants directly onto the tidal wetlands and onto impervious surfaces, where they will be washed into the tidal wetlands.

Thus, the EA fails to recognize -- and thus fails to address -- the material detrimental impact the Proposed Action will have on tidal wetlands.

As the Davison Report observes:

> Coastal wetlands (tidal and freshwater) are critically important for the benefits they provide to coastal resiliency, floodwater management including storm surge attenuation, water quality, and wildlife.

Davison Report at 2.

> While the project as proposed would not directly impact tidal wetlands, it would prevent additional tidal wetlands from forming naturally in and around the project area and tidal wetlands may be impacted by stormwater runoff and other aspects of the project.

Davison Report at 2.

The Trinkaus Report provides additional details:

> The primary source of metals and hydrocarbons in stormwater runoff is motor vehicles. Construction of approximately 4,000 additional parking spaces consisting of a combination of surface parking and a parking garage is proposed. The existing 1,128 parking spaces will continue to be utilized with a shuttle service proposed to provide transit between the existing spaces on the west side and the new terminal on the east side. In short there is a planned significant increase of motor vehicles using the site that will also generate higher pollutant loads impacting coastal and tidal wetlands.
>
> Based upon professional literature, approximately 40% of nitrogen and phosphorous loads are the result of atmospheric deposition onto impervious surfaces during all-weather events. When there are large impervious areas, this material will accumulate on these surfaces and then be washed off with a rainfall event. Nitrogen loads are a significant concern as runoff will be directed toward tidal wetlands where nitrogen in the runoff can kill tidal grasses in the wetland areas, thus exposing tidal wetland soils to wave action which results in erosion and loss of tidal wetland areas.

Trinkaus Report at 3 (emphasis added).

The EA's apparent reliance on the decision to truncate the planned runway expansion to avoid construction impacts (and certain permitting requirements) in tidal wetlands does not alleviate the FAA's obligation to consider indirect impacts on tidal wetlands associated with the Proposed Action. This failure of the EA is material and significant. The FAA explicitly recognizes "Unique characteristics of the geographic area (e.g., proximity to historic or cultural resources, parks, . . . wetlands, ecologically critical areas)" The Proposed Action will impact the very sensitive and important environmental receptors which surround the Airport, particularly the area of the proposed expansion, given its proximity to Long Island Sound and tidal wetlands. An Environmental Impact Statement is required to fully identify these impacts and their consequences.

## Inland Wetlands

The EA notes that inland wetlands and watercourses mapping was conducted within the Airport property. Section 4.15.1, Figure 4-13 and Table 4-12 of the EA all contain information regarding inland wetlands and watercourses identified on the airport property. The EA in Table 5-12 states that the Proposed Action will have a direct impact on 9.28 acres of inland wetlands. The EA states that the wetlands to be impacted generally are considered relatively low-value and notes that the natural function, value and quality is low for the disturbed wetlands subject to Proposed Action impacts.

The Davison report details the errors in this assessment as follows:

> 2. The Wetland Report assigned only Sediment/Toxicant Retention and Production Export functions to the affected wetlands (Wetlands 04. 05, 06A, 06B). These wetlands also provide Nutrient Removal/Retention and Floodflow Alteration functions at a principal level due to the fact that these wetlands are low-gradient, densely vegetated, and located within a 100-year floodplain. Nutrient/Removal/Retention functions are closely related to Sediment/Toxicant Retention functions which are almost always provided together. **The loss of 9.3 acres of wetlands providing these functions will result in a loss of these functions and subsequent adverse impact to remaining freshwater and tidal wetland areas.**
>
> 3. The proposed expansion will increase the impervious area by at least 941,922 square feet (21.62 acres) for a total of 1,232,415 square feet when one includes the preexisting 240,493 square feet of impervious surfaces
>
> 4. **There are significant design challenges associated with proper stormwater management on the site considering almost 22 acres of additional impervious cover are proposed**. Section 5.14.1.2 of the EA indicates that "infiltration opportunities are somewhat limited due to the high groundwater levels at the proposed terminal location. Detention and treatment would be provided for stormwater that cannot be infiltrated". Detention must occur below the elevation of the proposed parking garage, surface parking, airfield, terminal, runway and other stormwater generating surfaces (stormwater is gravity fed) and above groundwater which is acknowledged in the EA as "high", or closer to ground, which will limit the depths and volumes of detention basins. Basins will therefore likely need to be large and shallow, occupying large areas. These areas are not depicted on conceptual

design plans. **Without infiltration, these systems are likely to pond water, potentially attracting waterfowl, which present a safety hazard to aircraft.**

5. Trinkaus Engineering's review of proposed stormwater treatment indicates that "The increase of impervious area will result in significant increases of non-point source pollutants, such as Total Suspended Solids (TSS), Total Nitrogen (TN), Total Phosphorous (TP), Metals, Petroleum Hydrocarbons, and chloride based deicing agents"

6. Improperly treated stormwater is the single largest source of water quality degradation in Long Island Sound and surrounding coastal wetlands. Nitrogen is particularly harmful to tidal wetlands.

Davison Report at 2-3 (emphasis added).

The Davison Report concludes that several statements made in the EA in Section 5.14.1.4 which are the basis for the conclusion that there is no significant impact on wetlands and watercourses are incorrect:

1. The Project [the term used in the Davison Report for the Proposed Action] does not have the potential to "Adversely affect a wetland's function to protect the quality or quantity of municipal water supplies, including surface waters and sole source and other aquifers.

Response: **Site wetlands provide principal functions associated with water quality protection (Sediment/Toxicant Retention and Nutrient Removal/Retention). Filling wetlands that provide these functions represents an adverse effect to these functions.**

2. The Project does not have the potential to "Substantially reduce the affected wetland's ability to retain floodwaters or storm runoff, thereby threatening public health, safety, or welfare (the term welfare includes cultural, recreational, and scientific resources or property important to the public).

Response: The Project is projected to require approximately 61,300 cubic yards (or over 4,000 truckloads) of fill within a 100-year flood zone. There is a reasonable chance that more fill will actually be required given actual and required elevations and project components. **The Project plans do not demonstrate the ability to compensate for this volume of fill with cuts at a similar location and elevation.**

3. The project does not have the potential to "Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands".

Response: Properly treating stormwater generated from over 20 acres of additional cover on a site lacking infiltration capacity, with high groundwater and surrounded by wetlands presents significant engineering challenges. Acceptable stormwater treatment measures have not been demonstrated to be feasible on the site. Absent a demonstrable design, the information presented indicates a high likelihood of wetland degradation due to improperly treated stormwater discharges from the site. **The cumulative impact of foreseeably degraded inland and tidal wetlands with the planned loss of a minimum of 9.3 acres of wetlands should be, but is not, considered.**

4. The project does not have the potential to "Be inconsistent with applicable state wetland strategies."

Response: **There are no state wetland strategies that support over 9-acres of wetland filling.**

Davison Report at 6-7 emphasis added.

The Trinkaus Report also discusses the impact of the new access road and fill requirements for the Proposed Action on freshwater and tidal wetlands as follows:

18. There is minimal discussion in the EA about the proposed access road from Proto Drive, the required bridge, and impacts to freshwater and tidal wetlands. **This is a serious deficiency in the EA as these potential impacts must be discussed in detail so a full evaluation can be made by the regulatory agencies. The construction of the access road will require the placement of fill within the 100-year flood plain. No information is provided on how the construction of the proposed road will be accomplished.**

19. The proposal will require the filling of approximately 9.3 acres of freshwater wetlands. This will require review and approval by the East Haven Inland Wetlands and Watercourses Commission. The filling of such a large area is deemed a "significant activity" under the Inland Wetland Regulations and thus "feasible and prudent" alternatives to the proposed filling must be provided. No "feasible and prudent"

alternatives have been provided in the EA. **As no preliminary grading plan has been provided for the expansion in the EA, the extent of filling of freshwater and potentially tidal wetlands could be greater than the 9.3 acres cited in the EA. If fill is brought to the site, there must be a slope from the top of the fill back down to original grade which does not appear to have been considered in the EA.**

Trinkaus Report at 5-6 (emphasis added).

Mr. Trinkaus concludes his report by stating:

> **It is my professional opinion that there are significant deficiencies in the EA as stated above including the lack of information regarding site grading and stormwater management that prevent an accurate assessment of the impacts to the site and the adjacent areas in East Haven that would be caused by the proposed project. However, considering the information provided, such as it is, and taking it at face value, there are clearly grave consequences to the physical environment in the project area and immediately and further adjacent, including to inland and coastal wetlands, watercourses, and water resources.**

Trinkaus Report at 7 (emphasis added).

Mr. Trinkaus also provided a statement on the record at the April 1, 2023 Public Meeting where he said, "I am concerned that the loss of the wetlands, the increase of impervious surfaces, and the filling and raising of the elevation of new airport facilities will make this flooding worse." Regarding the filling of almost 10 acres of wetlands, he noted that, speaking from 40 years of development experience, under current wetlands regulations, "no private developer would be allowed to fill a fraction of that amount."[66]

Per the EA, off-site mitigation and use of a fee program would be used to address the direct loss of 9.3 acres of wetlands. The indirect impacts, including degradation, loss of function and ultimate additional destruction of wetlands are not acknowledged or addressed. These proposed compensatory mechanisms will not in any way address the impact on the local environment that the Proposed Action will have.

The EA, without evidence, simply makes a conclusory statement that there are no wetlands impacts. For example, the EA states "Taking into

[66] See video recording of April 1, 2023 Public Meeting comments https://www.tweedmasterplan.com/meetings

consideration the scope of work, its location, minimization of impacts within wetlands . . . and compensatory mitigation to be negotiated at the permitting phase . . . potential effects would be less than significant." EA at 5-58.

The EA completely ignores the issue of flooding experienced in the surrounding communities that will be exacerbated by the direct and indirect loss of tidal and inland wetlands planned as part of the Proposed Action. Offsite mitigation and payment into a fund controlled by the U.S. Army Corps of Engineers, the measures proposed for mitigation, will not ameliorate the adverse effect that the Proposed Action will have on already unacceptable circumstances.

The FAA's Significant Impact Threshold for impacts on wetlands and surface water resources includes the following:

> The action would:
>
> 1. Adversely affect a wetland's function to protect the quality or quantity of municipal water supplies, including surface waters and sole source and other aquifers;
>
> 2. Substantially alter the hydrology needed to sustain the affected wetland system's values and functions or those of a wetland to which it is connected;
>
> 3. Substantially reduce the affected wetland's ability to retain floodwaters or storm runoff, thereby threatening public health, safety or welfare (the term welfare includes cultural, recreational, and scientific resources or property important to the public);
>
> 4. Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands;
>
> 5. Promote development of secondary activities or services that would cause the circumstances listed above to occur; or
>
> 6. Be inconsistent with applicable state wetland strategies.

FAA Order 1050.1F at 4-11.

As discussed, all six of these significance threshold factors are implicated by the Proposed Action. There are a large number of wetlands including marine, estuarine, riverine, lacustrine and palustrine wetlands present on and immediately adjacent to the Proposed Action area, and activities in or

proximate to these wetlands will have a negative significant impact on wetlands on and off the Airport property. Wetlands resources are inextricably linked to threatened and endangered species, resiliency, coastal resources, flood control and stormwater management. The Proposed Action will clearly and unavoidably have a significant negative impact on wetlands and the entire ecosystem of which they are a part of due to the direct loss of almost ten acres of inland wetlands to development, and due to the degradation associated with construction and hydrologic changes that will impact other wetlands and water systems.

Wetlands are critical to flood management and their loss and degradation will exacerbate already critical issues. The proposition that off-site mitigation and payment of fees will compensate and ameliorate the negative significant impact of the direct and indirect loss of wetlands is wrong, and frankly, incomprehensible. The EA demonstrates that there will be a significant impact to wetlands using FAA criteria and an EIS is required to adequately explore this significant impact and identify alternatives and effective mitigation strategies.

In addition to the estimated direct loss of 9.3 acres of wetlands caused by the Proposed Action, there will be an estimated increase in impervious surfaces at the airport of approximately 941,922 square feet (or 21.62 acres) which will result in a large volume of polluted stormwater runoff that must be properly managed and a planned importation of a minimum of 61,300 cubic yards of fill. These actions will have a profoundly negative impact on the remaining wetlands, exacerbating already severe flooding issues and harming adjacent wetlands and other precious coastal resources. There is ample evidence of the significant impact the Proposed Action will have on wetlands. The EA's failure to recognize this must be corrected and an Environmental Impact Statement prepared.

## Floodplains

The EA addresses floodplains and sea level rise. As stated supra, the EA notes that almost the entire Airport property is located in a FEMA designated special flood hazard area, Zone AE, with a base flood elevation of 12 feet. The EA notes that the Airport is susceptible to tidal flooding and sea level rise flooding and that the mean sea level in Long Island Sound is projected to rise up to 20 inches above the National Tidal Datum Epoch by 2050. The EA also notes that if sea level rises a mere two feet or more the majority of the airport south of Runway 02-20 is expected to be more vulnerable and subject to frequent flooding. EA at 4-66.

Significant impacts associated with the Proposed Action on the floodplain are several. The direct loss of wetlands and negative and debilitating impact on adjacent wetlands just discussed are directly related to significant negative impacts on the floodplain that the Airport is located on.

Additional significant factors that should be considered include:

1. The large and likely underestimated amount of fill required by the Proposed Action;

2. The large and likely underestimated amount of impervious surfaces required by the Proposed Action; and

3. The impact of stormwater runoff on the floodplain.

The EA in Table 5-13 provides an estimate of 61,300 cubic yards as the approximate amount of fill that will need to be placed in the floodplain for the runway profile and safety area improvements, the east terminal and site grading and the parking garage.

The Trinkaus Report raises several significant concerns that call into question the adequacy of the EA's discussion of the fill needed for the Proposed Action:

> 13. No grading plan has been provided in the EA which would allow for the evaluation of the stated amount of fill to be brought in. This is a critical component given the proximity of terminal and runway improvements and the disparity in planned elevations of various critical components. **On its face the information given suggests that the estimated amounts of fill required for construction site wide are grossly underestimated. If additional fill is required, then the extent of fill beyond the area of actual construction will also increase. This would result in greater adverse physical impacts to the delineated wetlands.**
>
> 14. According to topographic maps of Tweed New Haven Airport provided by the town, the average elevation around the proposed terminal is 6.0 MSL thus to raise the terminal building and parking garage above the base flood elevation will require raising the grade by a minimum of 7' for structures which will be used by staff and the public. **No detailed information has been provided as to how this will be accomplished.**
>
> 15. As stated in the EA, the proposed expansion will encompass approximately 31 acres. While it is stated that the runway expansion,

terminal building, and parking garage will be located above the 100-year flood elevation, why isn't the large surface parking area being raised above the base flood elevation? It is stated that 61,300 cubic yards of material will be placed for the runoff expansion, parking garage and terminal building to elevate above base flood elevation. Over an area of 31 acres, 61,300 cubic yards will only raise the elevation by 1.2' which is insufficient to raise the features above the base flood elevation. Looking at 61,300 cubic yards of fill another way would mean that only approximately 4.7 acres of the 31 acres could be raised 7' to be above the base flood elevation. **Frankly, it does not appear that the stated volume of 61,300 cubic yards will be adequate for this project and the estimate is not supported in the EA.**

16. If the 61,300 cubic yards of material is correct this will require over 4,000 dump trucks to bring the structural fill material. There is no discussion in the EA about the importation of this fill volume and the impact on the East Haven road system and neighborhoods surrounding the site. These impacts will be exacerbated if more fill is needed.

17. The filling required for the new terminal and runway expansion **will result in a significant loss of flood storage below the limit of the 100-year base flood elevation**. It is stated that there is an available area along the existing runway where compensating flood storage can be provided for the proposed filling within the 100-year flood plain, but **the EA does not contain adequate information to support this assertion.**

18. There is minimal discussion in the EA about the proposed access road from Proto Drive, the required bridge, and impacts to freshwater and tidal wetlands. **This is a serious deficiency in the EA** as these potential impacts must be discussed in detail so a full evaluation can be made by the regulatory agencies. **The construction of the access road will require the placement of fill within the 100-year flood plain**. No information is provided on how the construction of the proposed road will be accomplished.

19. The proposal will require the filling of approximately 9.3 acres of freshwater wetlands. This will require review and approval by the East Haven Inland Wetlands and Watercourses Commission. The filling of such a large area is deemed a "significant activity" under the Inland Wetland Regulations and thus "feasible and prudent" alternatives to the proposed filling must be provided. No "feasible and prudent" alternatives have been provided in the EA. As no preliminary grading plan has been provided for the expansion in the EA, the extent of filling

of freshwater and potentially tidal wetlands could be greater than the 9.3 acres cited in the EA. If fill is brought to the site, there must be a slope from the top of the fill back down to original grade which does not appear to have been considered in the EA.

20. AE flood zones can also experience wave heights of three (3) feet or less. This is not considered in the EA and given the stated intent to construct much of the site at ground level -- including apparently the surface parking area -- **this is a major problem and deficiency.**

Trinkaus Report at 5-6, emphasis added.

The Davison Report also raises significant concerns regarding the proposed amount of fill necessary to implement the Proposed Action:

1. The EA states that construction of the runway profile and safety area improvements, the east terminal and site grading, and the parking garage will require approximately 61,300 cubic yards (or over 4,000 truckloads) of fill within a 100-year flood zone. As discussed by Mr. Trinkaus, it is likely that more fill will be required to achieve required FEMA elevations in these areas and in the area of the proposed roadway and bridge, and the surface parking area[.]

2. To compensate for floodplain loss, an equal volume of cut is required in the same general location and elevation as the fill. **It is unclear where those cuts can occur at the Terminal Expansion location which is low-lying and surrounded by wetlands**. **Cuts in areas remote from the Terminal Expansion fill and at elevations higher than the fill will not mitigate for the anticipated loss of flood storage capacity**. The Proposed Action plans do not reference locations of cuts and fills.

3. Any loss of flood storage capacity that is not adequately compensated for **will result in increased flooding in the areas surrounding the Proposed Action which are reportedly already experiencing flooding at unacceptable levels.**

Davison Report at 3-4, emphasis added.

The EA notes that under Town Ordinance any floodplain fill must be offset by a corresponding amount of cut and concludes that the estimated 61,300 cubic yards of fill to be placed in the floodplain will be mitigated by a corresponding cut within the floodplain in undeveloped upland areas. EA at 5-61. There is an

unsupported estimate that up to 90,000 cubic yards of volume surface cut is available.

Both the Davison and Trinkaus Reports question several aspects of this "analysis" as reproduced above. The failure of the EA to include basic geotechnical information and a grading plan, the very general statements regarding site grading that cannot be vetted or understood in any meaningful way, the significant negative environmental impacts and failure to articulate a defensible mitigation strategy based on fact all mandate that an Environmental Impact Statement be undertaken.

The Proposed Action will not occur in a vacuum. The Town is compelled once again to note that the area surrounding the Airport is already subject to constant flooding that is expected to worsen as sea levels rise. This will be exacerbated by the addition of fill in the floodplain and there is a realistic potential that the actual quantity of fill needed may be significantly higher than estimated in the EA. See Trinkaus Report at 5. Moreover, the issues associated with mitigating or otherwise addressing this amount of fill are terribly complex and challenging.

The addition of at least 30.99 acres of additional impervious surfaces at the airport is noted in Table 3-10 of the EA which states that the impervious footprint area associated with the terminal building, the terminal apron, the taxiway, vehicle parking and the bridge totals 1,289,717 square feet or 30.99 acres.

The EA states there is a proposed 699 foot runway extension for the southern end of the runway and a 336 foot extension proposed for the northern end of the runway. EA at 3-17. A 355 foot by 200 foot EMAS is also proposed. The runway extensions and EMAS will contribute significant quantities of impervious surfaces which are not quantified or considered at any point in the EA or appendices.

In Section 5.14.1.2 the EA states the proposed expansion will increase the impervious area by 941,922 square feet (21.62 acres). EA at 5-57. This is of course significantly less than the 30.99 acres previously stated in the EA. These numbers are inconsistent, and it is unclear what the true increase in impervious area will be. It appears that the 21.62 acre figure does not include the additional impervious surfaces associated with the bridge. The 30.99 acre estimate explicitly includes this feature of the Proposed Action and the 21.62 acre estimate is based on the following described components of the Proposed Action: the terminal and runway expansion areas.

This significant delta between the amounts of impervious surface to be added to the floodplain is a material flaw in the EA that needs to be corrected.

The EA states that any impact to groundwater associated with the increase in impervious surfaces associated with the Proposed Action will be addressed by use of stormwater detention and infiltration systems and use of best management practices. EA at 5-59.

The EA concludes that the significant impact thresholds associated with groundwater are not exceeded by the Proposed Action. EA at 5-59. There are several material problems with this analysis. As discussed infra it is unlikely that the use of infiltration systems on the property will be successful, due to factors such as topography and available space. The use of unidentified best management practices does not provide any basis for review or comment. The impact on groundwater associated with the Proposed Action due to the large amount of impervious surfaces to be added is significant and should be identified as such. Just as importantly, **the impervious surface addition will have a material effect on the floodplain** and needs to be considered as part of that analysis.

**Stormwater** runoff associated with impervious surfaces in a protected floodplain is a major threat to the physical environment.

The EA states:

> The proposed terminal site would include stormwater detention systems to allow for a controlled release of stormwater from the site, on-site improvement of water quality, and elements of infiltration **where possible.** The site design would allow for some infiltration and filtering of stormwater to recharge groundwater and minimize the amount of stormwater that enters surface waters and adjacent wetlands; **however, infiltration opportunities are somewhat limited due to the high groundwater levels at the proposed terminal location**. Detention and treatment would be provided for stormwater that cannot be infiltrated. The Connecticut 2004 Stormwater Quality Manual would guide the design of the terminal site and the stormwater management system would be further developed in the permitting phase of the Proposed Action. Stormwater best management practices, controls, and management systems would be approved through the CT DEEP Construction Stormwater General Permit that would be obtained for the Proposed Action.
>
> EA at 5-57 (emphasis added).

The Davison Report raises the following concerns regarding infiltration and stormwater:

> 3. The proposed expansion will increase the impervious area by at least 941,922 square feet (21.62 acres) for a total of 1,232,415 square feet when one includes the preexisting 240,493 square feet of impervious surfaces.
>
> 4. There are significant design challenges associated with proper stormwater management on the site considering almost 22 acres of additional impervious cover are proposed. Section 5.14.1.2 of the EA indicates that "**infiltration opportunities are somewhat limited due to the high groundwater levels at the proposed terminal location. Detention and treatment would be provided for stormwater that cannot be infiltrated**". Detention must occur below the elevation of the proposed parking garage, surface parking, airfield, terminal, runway and other stormwater generating surfaces (stormwater is gravity fed) and above groundwater which is acknowledged in the EA as "high", or closer to ground, which will limit the depths and volumes of detention basins. Basins will therefore likely need to be large and shallow, occupying large areas. These areas are not depicted on conceptual design plans. Without infiltration, these systems are likely to pond water, potentially attracting waterfowl, which present a safety hazard to aircraft.
>
> 5. Trinkaus Engineering's review of proposed stormwater treatment indicates that "The increase of impervious area will result in significant increases of non-point source pollutants, such as Total Suspended Solids (TSS), Total Nitrogen (TN), Total Phosphorous (TP), Metals, Petroleum Hydrocarbons, and chloride based deicing agents"
>
> 6. **Improperly treated stormwater is the single largest source of water quality degradation in Long Island Sound and surrounding coastal wetlands**. Nitrogen is particularly harmful to tidal wetlands.
>
> Davison Report at 3, emphasis added.

The Trinkaus Report provides a sobering discussion of the significant impacts the Proposed Action will have on stormwater issues:

> 1. Table 3-10 in the EA states that the impervious footprint area associated with the terminal building, the terminal apron, the taxiway, vehicle parking and the bridge totals 1,289,717 square feet or 30.99 acres. A pervious area of 23,760 square feet or 0.55 acres is proposed

for a stormwater management area. Section 3.3.1.2 states there is a proposed 699 foot extension with a 235 foot displaced threshold for the southern end of the runway and a 336 foot extension with a 336 foot displaced runway end threshold proposed for the northern end of the runway. A 355 foot by 200 foot EMAS is also proposed. The runway extensions and EMAS will contribute significant quantities of impervious surfaces which are not quantified at any point in the EA or appendices. In Section 5.14.1.2 the EA states the proposed expansion will increase the impervious area by 941,922 square feet (21.62 acres). These numbers are inconsistent, and it is unclear what the true increase in impervious areas will be. However, even if we use the 941,922 square feet calculation, it results in 3.2 times the existing impervious area on the site. **This increase of impervious areas will result in significant increases in stormwater runoff volume for all rainfall events.** Obviously, the problem will be further exacerbated if the higher 1,289,717 square feet calculation (or something in between the two figures is accurate.

Section 5.14.1.2 states in part "*The proposed terminal site would include stormwater detention systems to allow for a controlled release of stormwater from the site, on-site improvement of water quality, and elements of infiltration where possible. The site design would allow for some infiltration and filtering of stormwater to recharge groundwater and minimize the amount of stormwater that enters surface waters and adjacent wetlands; however, infiltration opportunities are somewhat limited due to the high groundwater levels at the proposed terminal location. Detention and treatment would be provided for stormwater that cannot be infiltrated*." The above quote from the EA clearly states that infiltration of post-development runoff is unlikely to occur**. If you are unable to infiltrate runoff, then the runoff will be discharged as surface flow which will worsen flooding in the surrounding areas. Even if some type of Low Impact Development (LID) practice such as permeable pavement was to be considered for surface parking areas, it would not result in reductions of runoff volume due to a lack of natural infiltrative capacity in the soils around the expansion.**

2. **The increase of impervious area will also result in significant increases of non-point source pollutants**, such as Total Suspended Solids (TSS), Total Nitrogen (TN), Total Phosphorous (TP), Metals, Petroleum Hydrocarbons, and chloride based deicing agents. The primary source of TSS and deicing agents is maintenance of roadways and exterior parking areas during the winter to provide safe surfaces for vehicles and pedestrians. This of course is different than the

deicing agents associated with aircraft maintenance which are expected to be managed via a collection system installed in the proposed new apron.

3. The primary source of metals and hydrocarbons in stormwater runoff is motor vehicles. Construction of approximately 4,000 additional parking spaces consisting of a combination of surface parking and a parking garage is proposed. The existing 1,128 parking spaces will continue to be utilized with a shuttle service proposed to provide transit between the existing spaces on the west side and the new terminal on the east side. In short **there is a planned significant increase of motor vehicles using the site that will also generate higher pollutant loads impacting coastal and tidal wetlands.**

4. Based upon professional literature, approximately 40% of nitrogen and phosphorous loads are the result of atmospheric deposition onto impervious surfaces during all-weather events. **When there are large impervious areas, this material will accumulate on these surfaces and then be washed off with a rainfall event. Nitrogen loads are a significant concern as runoff will be directed toward tidal wetlands where nitrogen in the runoff can kill tidal grasses in the wetland areas, thus exposing tidal wetland soils to wave action which results in erosion and loss of tidal wetland areas**. Links to Professional Journal Articles are provided at the end of this report which discuss atmospheric deposition of nutrients.

5. The EA vaguely discusses generic possible approaches as to how stormwater management will be handled for the terminal expansion, but no detailed site specific stormwater management information is provided in the EA. **The EA does not address the increase of runoff volumes and pollutant loads which will result from this expansion. <u>This is a major deficiency of the EA.</u>** It is standard civil engineering practice to provide, at a minimum, conceptual plans for how stormwater will be handled on a site. No such plan has been provided by the EA.

6. As stated above, the EA in Section 5.14.1.2 discusses the possibility of using infiltration to handle some or all the expected runoff, however, it is further acknowledged in the EA that the soils may not be suitable for infiltration. **No site evaluation has been conducted to determine the underlying soil conditions in the proposed expansion. <u>This is a major deficiency in the EA.</u>**

7. The EA includes a proposal to extend Runway 02-20 by approximately an additional 639 feet at Runway 02 and 336 at Runway 20 and install a 355 foot by 200 foot EMAS system. **This will result in a further increase in impervious areas that need to be addressed. There is no discussion as to how stormwater associated with the runway expansion, including EMAS, will be managed in the EA**. **<u>This is a major deficiency in the EA</u>**

Trinkaus Report at 1-4 (emphasis added).

The significant impact threshold for floodplains is discussed in the EA which states that per FAA Order 1050.1F "a floodplain impact is significant if it would cause **notable adverse impacts** on natural and beneficial floodplain values. Natural and beneficial floodplain values are defined in Paragraph 4.k of USDOT Order 5650.2, Floodplain Management and Protection. They include natural moderation of floods, water quality maintenance, groundwater recharge, fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, and forestry." EA at 5-61, emphasis added.

The EA goes on to conclude that there will be no significant impact on floodplains from the Proposed Action. This is wrong for a number of reasons.

1. The analysis in the EA does not consider the impact on the floodplain of the large amount of impervious surface and the polluted surface runoff into the floodplain associated with this. The floodplain, now reduced in size, will be periodically inundated with polluted stormwater. This will cause a <u>notable adverse impact on natural and beneficial floodplain values,</u> as defined, including natural moderation of floods, water quality maintenance, groundwater recharge, fish, wildlife, plants, open space natural beauty, and scientific study.

2. The analysis in the EA relies on a dubious at best estimate of fill to be placed on the floodplain. This is clear from the plain language of the EA and as further elaborated on in the Trinkaus Report quoted above. Inadequate information is provided regarding this estimate and it is likely to be grossly underestimated.

3. Even using the amount of fill provided in the EA -- 61,300 cubic yards – again likely a gross underestimate, the EA's conclusion without supporting data that the fill will be offset by on site cut opportunities is called into question in both the Davison and Trinkaus Reports. If appropriate on site cut opportunities are not available there will be a

further notable adverse impact on natural and beneficial floodplain values, as defined, including natural moderation of floods, water quality maintenance, groundwater recharge, fish, wildlife, plants, open space natural beauty, and scientific study.

4. The previously described direct loss of wetlands and indirect negative impact on additional tidal and inland wetlands on the floodplain is not considered in the EA. This direct and indirect loss will lead to yet even further notable adverse impacts on natural and beneficial floodplain values, as defined, including natural moderation of floods, water quality maintenance, groundwater recharge, fish, wildlife, plants, open space natural beauty, and scientific study.

Using the FAA mandated significant threshold value for floodplains: "A floodplain impact is significant if it would cause notable adverse impacts on natural and beneficial floodplain values", it is clear that preparation of an Environmental Impact Statement is warranted due to impacts on the floodplain.

**Coastal Resources**

The FAA has not published a significance threshold for Coastal Resources. It has however published a list of factors to consider which include:

Would the action have the potential to:

- Be inconsistent with the relevant state coastal zone management plan(s);
- Impact a coastal barrier resources system unit (and the degree to which the resource would be impacted);
- Cause an unacceptable risk to human safety or property; or
- Cause adverse impacts to the coastal environment that cannot be satisfactorily mitigated.

FAA Desk Reference at 4-5

The EA notes that the entire Airport property (minus a small area at the far north) is subject to the Connecticut Coastal Management Act ("CCMA") which is administered by the CT Department of Energy and Environmental Protection ("DEEP'). EA at 4-17. The land adjacent to the Airport property which is designated for the Airport access road is also subject to the CCMA per Figure 4.4 of the EA. Specific coastal resources protected under the CCMA that are located on and adjacent to the Airport include:

- General Coastal Resources
- Coastal Hazard Areas
- Freshwater Wetlands and Watercourses
- Tidal Wetlands
- Shoreland

Because tidal wetlands are sensitive and can suffer adverse impacts from adjacent land development and stormwater runoff, they are strictly protected. Section 22a-92(b)(2)(E) of the CCMA requires that activities in coastal areas be undertaken in a manner that prevents the despoliation and destruction of tidal wetlands in order to maintain their vital natural functions.

The EA states that "The Proposed Action is not anticipated to result in adverse impacts to tidal wetlands…wildlife/finfish/shellfish habitat" EA at 5-16, but the Davison Report notes "However no data or analysis is provided to support this supposition or address the reasonably foreseeable impacts from stormwater." Davison Report at 5.

The EA does not address in any meaningful or fact based way the impacts that the Proposed Action will have on Coastal Resources. **Noting that there is a permitting process and flatly stating there will be no adverse impact, without including any material to support this assertion, fails to meet the FAA's stated requirements for compliance with NEPA as set forth below:**

The FAA Desk Reference at 1-2 states: "The CEQ Regulations direct Federal agencies to list all Federal permits, licenses, and other approvals that must be obtained in implementing the proposed action, and, to the fullest extent possible, integrate compliance with such requirements with the NEPA process."

The FAA Desk Reference further elaborates (emphasis added):

> 2-3.1. Early Planning. Environmental issues should be identified and considered early in a proposed action's planning process to ensure efficient, timely, and effective environmental review. Initiating the appropriate level of environmental review at the earliest possible time facilitates the NEPA process. **Preparation for any applicable permit application and other review process requirements should be part of the planning process to ensure that necessary information is collected and provided to the permitting or reviewing agencies in a timely manner.** The FAA or applicant, as applicable, should identify known environmental impact categories that the proposed action and the alternatives could affect, **including**

**specially protected resources**. These tasks should be completed at **the earliest possible time** during project planning to ensure full consideration of all environmental impact categories and facilitate the FAA's NEPA process. Sufficient planning and project justification should be available to support the environmental review.

FAA Desk Reference at 2-7

There is a fundamental failure here: The EA does not mention, never mind address, the plain fact that the Proposed Action, even though truncated for the sole reason to avoid *construction* in tidal wetlands, will still have an impact -- and likely a significant impact -- on tidal wetlands and other coastal resources for many reasons, including the planned increase in impervious surfaces, the loss of inland wetlands, the increase in volume and toxicity of stormwater runoff and the aerial deposition of air pollutants (associated with air and motor vehicle traffic) that will be washed into sensitive areas by rainfall.

The EA does not identify and consider the impact on coastal resources that the Proposed Action would have. It reaches the conclusion that the significant impact threshold is not exceeded. EA at 5-16. This conclusion is made absent any substantive fact-based analysis in apparent reliance on the fact that the Proposed Action, as currently described, will not have a physical footprint in the tidal wetlands and relying on permitting requirements. This requires willfully ignoring the plain fact that the Proposed Action will inevitably impact the tidal wetlands and other coastal resources.

## Hazardous Materials

The EA discusses efforts to identify hazardous materials that may be present at the airport. EA at 4-29. The potential presence of per- and polyfluoroalkyl substances or PFAS is noted due to historic use of PFAS-containing fire suppressing foams at the Airport. PFAS is an emerging contaminant that is the subject of current efforts by state and federal authorities to determine the appropriate approach for identification of historic release areas and remedial requirements. Airports are considered prime locations for PFAS releases due to the historic use of firefighting foam and the periodic equipment testing and drills held at airports.

In his statement during the April 1, 2023 public meeting, Assistant Fire Chief Rosa noted that PFAS "which are found in firefighting foam, have been used for years by the Airport Authority during training exercises and any incidents, and used by crash fire rescue crews in the New Haven fire department. These chemicals are likely still found in the soil surrounding the runways. The

disruption of the soil could cause the PFAS to leach out and contaminate groundwater, or run off into tidal wetlands." The environmental impact "needs to be very carefully considered."

The EA in Section 5.7 does not take into account the potential impact of construction activities including earth moving and the potential release into the environment of historic PFAS contamination associated with the Proposed Action. This is a material omission in the EA and needs to be corrected.

**Socioeconomics, Environmental Justice, and Children's Health and Safety Risks**

**Socioeconomics**

The EA states that that the Proposed Action will not result in a negative or adverse impact or adversely affect public services or businesses. EA at 5-35. Further the EA states without basis that the Proposed Action is not anticipated to negatively affect property owners or business and therefore is not expected to produce a decrease in the community tax base. EA at 5-35. The Town has identified several major concerns over the impact on its community tax base that the EA does not address.

Increased vehicular traffic on Proto Drive will adversely affect local businesses including a number of the Town's largest taxpayers -- manufacturers and distribution centers -- that are located in the industrial park on Proto Drive (one of whom is currently considering expanding operations and acquiring additional property in the industrial park). These businesses only have access to Proto Drive. They will be harmed by experiencing inevitable delays in shipping and receiving due to the nature of their business operations which are dependent on heavy commercial trucks. Proto Drive was simply not designed to handle the increased volume of traffic that is proposed. For instance, the vehicle turning radius for the large commercial vehicles that now enter and exit the businesses located on Proto Drove is necessarily large, but manageable, under current roadway conditions. The Town has seen no analysis of how the existing commercial traffic will be managed with the large increase in number of passenger vehicles associated with the Proposed Action.

The lack of analysis or factual underpinnings for the conclusions drawn on this subject in the EA render those conclusions mere speculation that is contradicted by the above examples provided by the Town.

**Environmental Justice**

The EA briefly notes that the study area for Socioeconomics, Environmental Justice and Children's Health and Safety Risks is consistent with the areas with the highest potential for experiencing direct or indirect effects from traffic, noise, or air quality. EA at 4-39.

A basic and consistent goal for the Proposed Action is articulated in the EA as "the volume of traffic corresponding to the increase in enplanement activity **is not compatible with the surrounding residential neighborhood**. Addressing the access to HVN is critically important to the community." EA at 2-8, emphasis added.

The residential neighborhood referenced here is the relatively affluent one located in New Haven. In fact, the EA notes that providing an access route that avoids residential neighborhoods is a key goal of the Proposed Action. EA at 2-10.

Further on, the EA notes that the area surrounding the Airport is generally residential in both communities and in the Town includes single family, two family, and multi-family residential, commercial, industrial, and land for recreation and entertainment. EA at 4-30.

Figure 4-11 graphically shows the study area. It also shows that the section of New Haven that is the current point of access to the airport does not have any Environmental Justice block groups. The sections of the Town that will be directly impacted by the Proposed Action**, which explicitly seeks to move the traffic out of the more affluent New Haven block groups**, are **all** Environmental Justice block groups and thus entitled to additional consideration.[67] Put simply, **the Proposed Action seeks to satisfy the "key goal" of moving the traffic out of the more affluent New Haven residential neighborhood, where it is deemed unsuitable, into an East Haven Environmental Justice residential neighborhood where it is somehow deemed suitable.**

Environmental Justice concerns are manifold. The entire Town is considered a distressed municipality by the State of Connecticut due to high unemployment and poverty, aging housing stock and low or declining rates of growth in job creation, population and per capita income; it is therefore considered a protected State Environmental Justice community. The State's Environmental Justice program seeks to address the historic placement or expansion of

[67] EA at 4-43

polluting facilities in communities that have historically been exposed to higher than average amounts of environmental pollution.

The federal government has recently reaffirmed its commitment to careful consideration of Environmental Justice issues in its funding and approval decisions under the federal Environmental Justice program.[68] Therefore, one would expect the FAA and the Airport Authority to pay diligent attention to the many Environmental Justice issues relating to the Proposed Action, as well as providing multiple and meaningful opportunities for the community to be informed and participate in the NEPA process. This has not occurred.

The EA concludes that "No disproportional and adverse effects on Environmental Justice populations are expected from the Proposed Action." EA at 5-36. This conclusion relies on:

The faulty conclusions regarding air pollution, noise and other impacts based on the illusory "net benefit" to the Proposed Action theory already discussed herein.

The failure to identify the impact of -- at the very least -- 4,000 dump trucks carrying fill required to build on a protected floodplain through this community.

The dismissal of construction traffic as temporary and "almost identical to existing conditions". EA at 5-37

The dismissal of the increase in vehicle traffic that the residents in the East Haven Environmental Justice neighborhood will experience -- that was unacceptable in New Haven -- even though the volume of traffic will be much higher in the Town due to the increase in enplanements, 4,000 additional parking spaces, and running of shuttles through the neighborhood as discussed earlier in these comments. Further, as noted in the VN Report, "Traffic generated to and from airport may be routed on local roads by GPS software to avoid delays. The report [the Draft EA] does not evaluate the traffic impact on local roads." VN Report at 2 of 4.

The simple fact is that as was stated in the EA: "the volume of traffic corresponding to the increase in enplanement activity is not compatible with the surrounding residential neighborhood. Addressing the access to HVN is critically important to the community." EA at 2-8. **This is equally as true for the Town residential neighborhood, that is entitled to special**

[68] https://www.federalregister.gov/documents/2023/04/26/2023-08955/revitalizing-our-nations-commitment-to-environmental-justice-for-all

**consideration as an Environmental Justice community, as it is for the New Haven neighborhood currently experiencing this traffic.**

FAA Order 1050.1F does not provide significance thresholds related to Environmental Justice. However, FAA Order 1050.1F provides factors that should be considered when making a significance determination:

> The action would have the potential to lead to a disproportionately high and adverse impact to an environmental justice population, i.e., a low-income or minority population, due to:
>
> · Significant impacts in other environmental impact categories; or
>
> · Impacts on the physical or natural environment that affect an environmental justice population in a way that the FAA determines are unique to the environmental justice population and significant to that population.

FAA Desk Reference at 4-9.

The conclusions drawn in the EA that no disproportional and adverse effects on Environmental Justice populations are expected from the Proposed Action[69] are not supported by the information provided in the EA as discussed herein. Significant impacts in several of the other environmental impact categories will be experienced in the Environmental Justice community including with regard to air quality, biological resources, climate, coastal resources, noise, water resources, and traffic impacts.

The impacts associated with coastal resources, climate and water resources, particularly the filling of wetlands and buildout in the floodplain, will be unique to the Environmental Justice population and significant to that population as it will exacerbate already existent flooding experienced by this community.

The EA graphically demonstrates that the significant negative impacts currently experienced in one (New Haven) neighborhood will be completely shifted to an Environmental Justice community where such impacts will be increased and exacerbated, in direct contravention of purposes of the Environmental Justice requirements. An Environmental Impact Statement should be prepared to further examine this issue and allow for informed decision making.

[69] EA at 5-36

## Air Quality

The significance threshold for air quality is that the action would cause pollutant concentrations to exceed one or more of the National Ambient Air Quality Standards (NAAQS), as established by the Environmental Protection Agency under the Clean Air Act, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations.

The EA in Section 5.1 erroneously relies on the fundamental inconsistency discussed previously in this document to utilize a "net change" analysis that results in a conclusion that is on its face wrong. The EA relies on a critical assumption that is not supported by the appendices or any factual study; specifically, that the assumed number of aircraft flying into the Airport would increase at exactly the same pace over the future year scenarios regardless of whether the Proposed Action was implemented. Therefore the EA uses identical numbers for enplanement estimates for the "No Action" alternative and the "Proposed Action" alternative. There is no evidence whatsoever to support the idea that the Airport as it exists now would be able to support this level of enplanements as discussed supra.

Table 5-2 of the EA reflects this error by showing a reduction in air emissions associated with the Proposed Action when compared with the "No Action" baseline. Because this conclusion is based on the erroneous and unacceptable fundamental inconsistency previously discussed it does not withstand scrutiny. As there are no materials provided to support this startling assumption it fails on its face.

The EA does not achieve NEPA mandated standards by virtue of its failure to meaningfully analyze air quality emissions associated with the Proposed Action. Testimony was provided at the April 1, 2023 FAA hearing[70] that if air impacts were analyzed in a transparent and factual manner, air quality emissions will demonstrate significant impact on air quality utilizing FAA standards and that implementing the Proposed Action would have a significant effect on the environment.

This problematic and faulty analysis which does not use a true No Action baseline for comparison of air impacts and relies on a spurious belief that fewer larger airplanes will be used under the Proposed Action is then referenced in other sections of the EA including socioeconomic, environmental justice and children's health and safety risks. Thus the conclusions drawn in these areas are all based on faulty and incomplete information.

[70] See video recording of April 1, 2023 Public Meeting comments https://www.tweedmasterplan.com/meetings

**Biological Resources (including fish, wildlife, and plants)**

The FAA articulates a basic significance threshold that must be considered when evaluating the environmental impact category for federally listed threatened or endangered species. The FAA has not established a significance threshold for non-listed species but has provided several factors to consider including the following (emphasis added):

- Adverse impacts to special status species (e.g., state species of concern, species proposed for listing, migratory birds, bald and golden eagles) **or their habitats**; or

- **Substantial loss, reduction, degradation, disturbance, or fragmentation of native species' habitats** or their populations;[71]

Indirect impacts must be considered as part of the consideration of significance thresholds.

**Essential Fish Habitat**

The EA concludes that there is no essential fish habitat identified within the Proposed Action site as there is no work now proposed in the tidal creeks or tidal wetlands that are immediately adjacent and down gradient[72] to the Proposed Action work area. EA at 4-7. Indeed the Proposed Action described in the EA was explicitly modified from that initially contemplated in the MPU to avoid work in tidal wetlands and thus avoid additional regulatory scrutiny.

This is problematic for several reasons. As noted in the Trinkaus and Davison Reports, the Proposed Action will have a significant detrimental effect on the immediately adjacent tidal wetlands and tidal creeks (Morris Creek and Tuttle Brook), due to the destruction of a large area of inland wetlands and due to the release of pollutants associated with stormwater runoff into the tidal wetlands and tidal creeks which are, as noted in the EA itself and in the Davison Report, essential fish habitat for several fish and shellfish species. Morris Creek is an active oyster restoration site as part of an effort spearheaded by University of Connecticut researchers.

Additionally, given the immediately adjacent location of the tidal creeks and tidal wetlands, the many material changes the Proposed Action has already gone through, and the incomplete and extremely preliminary nature of the

[71] Order 1050.1F, Exhibit 4-1 Significance Determination for FAA Actions.
[72] General Site Description in the EA notes that "A gradual downhill slope radiating outward from the airfield directs runoff into Morris Creek and Tuttle Brook to the southeast and southwest, respectively." EA at 4-1.

described Proposed Action components, it is highly likely that the Proposed Action as constructed will in fact be located in the tidal wetlands and will have an even more significant impact on the essential fish habitats located in the tidal creeks.

Contrary to the assertion in the EA, essential fish habitats are present where the Proposed Action will occur. Per FAA guidance, the impact of the Proposed Action on essential fish habitat should have been evaluated as part of the EA analysis. Using the significant impact thresholds for biological resources per FAA Order 1050.1F, it is clear that due to the demonstrated substantial loss, reduction, degradation, disturbance, or fragmentation of native species' habitats and subsequent adverse effects on the habitats, the impact thresholds would be met by the Proposed Action. The EA is inadequate and does not provide even a minimum of required information on this point. Nonetheless, it is clear that per FAA requirements, an Environmental Impact Statement is mandated due to the indirect impacts on essential fish habitats as a result of construction in the floodplain and loss of wetlands discussed supra.

**Threatened and Endangered Species**

The EA in Section 5.2.1.1 fails to identify or discuss the potential for indirect impacts of the Proposed Action on wildlife. The Davison Report contains a list of the many indirect impacts that will occur in habitats located adjacent to the Proposed Action including noise and light pollution, pollutants contained in stormwater discharges, and impacts associated with the volume of stormwater and increased water temperature. Any such impact on habitat would negatively impact wildlife, including threatened and endangered species and should have been considered carefully.

The EA also fails to account for the indirect impacts of the Proposed Action on fish and shellfish. This is addressed in the Davison Report as follows:

> 3. The potential for secondary impacts from stormwater on fish and shellfish is not discussed. The only mention of shellfish includes Section 4.15.2, "Morris Creek has a Surface Water Quality Classification "SA" designated for: habitat for marine fish, other aquatic life and wildlife; shellfish harvesting for human consumption.." They go on to mention in section 5.4 Coastal Resources, "The Proposed Action is not anticipated to result in adverse impacts to tidal wetlands...wildlife/finfish/shellfish habitat." However no data or analysis is provided to support this supposition or address the reasonably foreseeable impacts from stormwater. Morris Creek is an active oyster restoration site being led by UCONN Marine Science Researcher Zofia Baumann (an article

> highlighting the oyster restoration efforts was posted as recently as November 7, 2022; link: https://marinesciences.uconn.edu/tag/morris-creek/). The EA mentions nothing of any ongoing research in the adjacent areas to the project

Davison Report at 4-5.

The EA does not achieve mandated standards by virtue of its failure to identify the threatened and endangered species and their habitats that will be indirectly impacted by the Proposed Action or examine these impacts to determine if, as is likely, they are significant using FAA mandated criteria.

**Climate Change Adaptation**

The FAA has not established a significance threshold for climate or published factors to consider. Rather, Order 1050.1F directs one to the desk reference on this point. The 1050.1F Desk Reference (v2) contains the following information regarding impact category Climate Change Adaptation.

> The environmental consequences section should include a discussion of the extent to which the proposed action or alternatives(s) could be affected by future climate conditions, based on published sources applicable to the study area. For example, a project area's ability to sustain impacts caused by climate changes should be described (e.g., identify current robustness and height of seawalls for coastal airports). This discussion should include any considerations to adapt to forecasted climate change conditions.

FAA 1050.1F Desk Reference at 3-7.

The EA notes that the entire Airport property is located in a FEMA designated special flood hazard area, Zone AE, with a base flood elevation of 12 feet. The EA notes that the Airport is susceptible to tidal flooding and sea level rise flooding and that the mean sea level in Long Island Sound is projected to rise up to 20 inches above the National Tidal Datum Epoch by 2050. The EA also notes if sea level rises a *mere* two feet or more the majority of the Airport south of Runway 02-20 is expected to be more vulnerable and subject to frequent flooding. EA at 4-66.

The EA considers Climate Change Adaptation noting that the Airport is susceptible to tidal flooding and sea level rise flooding. EA at 5-13. Per the EA the Proposed Action will address the potential effects of sea level rise on the runway through "life cycle management, which would involve periodic maintenance and upgrades to the runway to offset the impact of sea level

rise." EA at 5-14. Additionally, the proposed new terminal would be constructed with a finished floor elevation at or above 13 feet above mean sea level base flood elevation which the EA asserts would help to assure it remains functional during major storm events. Roads and surface parking would be constructed at current grade and thus subject to forecast increases in flooding due to climate change.

The EA's dismissal of climate change adaptation concerns based on "periodic maintenance and upgrades" with no details or explanations as to how this will address climate change adaptation and its failure to discuss the adequacy of a one foot elevation above flood elevation for the terminal is deeply problematic.

The Davison Report addresses this noting:

> The airport property and many of the surrounding neighborhoods lie within FEMA Flood Zones with mandatory flood insurance purchase requirements and floodplain management standards (VE and AE). Neighborhoods surrounding the airport are currently affected by flooding, absent further adverse impacts from anticipated sea level rise, storm intensity and frequency increases from climate change. The Sea Level Affecting Marshes Model ("SLAMM") is a widely adopted and effective model to predict wetland response to long-term sea-level rise and has been applied in every coastal state. Figures 1 & 2 depict SLAMM generated projected sea level rise on marshes proximate to the project area in 2025 and 2085. **These figures demonstrate that 1. Areas within and immediately surrounding the project area would be affected by sea level rise; and 2. While the project area as proposed would not directly impact tidal wetlands, it would prevent additional tidal wetlands from forming naturally in and around the project area and tidal wetlands may be impacted by stormwater runoff and other aspects of the project.**

Davison Report at 2 (emphasis added.)

This problem is further exacerbated by the fact that the flooding that will be experienced at the Airport and the surrounding residential communities will be significantly worsened by the installation of many acres of impervious material and the destruction of wetlands as part of the Proposed Action, thus removing existing natural flood storage resources and magnifying the impacts of major storm events. This will only occur in the Proposed Action scenario and needed to be considered, but was completely ignored in the EA.

A recommendation to develop a resiliency plan that includes mitigation measures for sea level rise and development of a drainage study is made in the MPU.[73] The Town in prior correspondence attached here[74] to the FAA has asked that a resiliency plan that includes mitigation measures for sea level rise and a drainage study that includes the low-lying areas surrounding the Airport be prepared as part of this effort. This has not happened. There is **no mention** in the EA of the flooding associated with even very minor rain events or just high tides that coincide with a full moon and windy conditions. Flooding is occurring with increasing frequency due to climate change and is already having a significant negative effect on the community in their homes and on roadways near the airport. Vastly increased traffic levels relating to the Proposed Action will run through roads, including the Town's primary evacuation route, that are already subject to this dangerous flooding, which all-too-frequently renders roads impassable.

Shoreline communities like the Town are already experiencing the effects of climate change. The Proposed Action will undoubtedly exacerbate these effects on the community. The failure to recognize this in the EA is unacceptable. Notwithstanding the inadequacies of the EA, there is adequate information available to conclude that the Proposed Action would have a significant impact on the physical environment due to climate change. An Environmental Impact Statement to further identify and quantify this is required.

The FAA Desk Reference requires the following elements be considered: "the extent to which the proposed action or alternatives(s) could be affected by future climate conditions, based on published sources applicable to the study area." FAA 1050.1F Desk Reference at 3-7. This discussion is not provided in the EA and thus the EA does not meet FAA standards.

**The EA Engages in Improper Segmentation by Not Including All Elements Necessary to Make the Runway Extension Fully Functional for Aircraft Operations in Compliance with FAA Safety Standards, and Therefore Not Describing or Analyzing the Environmental Impacts of Those Necessary Elements**

The EA fails to study the impacts of the complete project necessary to meet its stated purpose and need. **This failure is classic segmentation** of the project. The most glaring and repeated example of segmentation is the

[73] MPU Section 6.5.5 page 6-35.

[74] Letter dated October 7, 2022 from Mayor Joseph A. Carfora to Ms. Colleen D'Alessandro, Regional Administrator FAA, included as Attachment I to this letter and incorporated by reference as if fully set forth herein.

focus on the need for a runway extension without addressing all of the connected actions for taxiway facilities and associated runway and taxiway safety standards, lighting, marking and navigational aid relocations that are covered in the MPU and FAA-conditionally-approved Airport Layout Plan (the "ALP").

Repeatedly the EA states that the Proposed Action "fully complies with the FAA design and safety standards" while ignoring the facilities and safety areas identified in the ALP necessary to meet these standards and accommodate the Runway extension. By not including these needed changes to the airfield as part of the Proposed Action, at a minimum, wetlands disturbances are not fully evaluated. Also, by failing to address the FAA's Runway Protection Zone (RPZ) clearing requirements, the full scope of potential impacts on residences off the ends of the runway are not studied in the EA.

A full accounting of the project components would be needed in the EA's Proposed Action description, or the FAA would need a connected action to approve a Modification of Standards ("MOS") allowing the Airport's non-standard and deficient airfield conditions to exist as part of the Proposed Action description and Proposed Action justification. Further, the FAA, as part of its connected action for Proposed Action approval, would need to approve a revision to the ALP addressing each of these non-standard conditions to ensure that the Airport Authority is in compliance at a minimum with its federal Grant Assurances. The following points address these deficient airfield conditions studied in the MPU and FAA-conditionally-approved ALP that are not included or analyzed in the EA.

1. Parallel Taxiway A – The FAA-approved ALP and MPU justification identifies the need for Taxiway A to be 400 feet from runway centerline to parallel taxiway centerline to meet FAA Airport Design Group III (Boeing 737[75]).

   Page 6-16 of the MPU notes: Taxiway A is an entrance/exit, partial parallel taxiway providing access to the approach end of Runway 20 and is 50 feet wide. The taxiway centerline is located 275 feet from the Runway 2-20 centerline, which does not meet ADG III runway-taxiway separation standards of 400 feet. A multiphase project is in the planning stages to partially address the non-standard separation.

[75] With Avelo Airlines already operating at HVN, the minimum threshold of 500 operations per year has been met for the Boeing 737 to officially be the Design Aircraft for the HVN ALP as identified in the MPU and FAA-approved ALP.

The EA is silent on the requirement for the Taxiway A relocation and extension to the full-length of the proposed runway extensions to both the north and south ends of the runway. The northeast end of Taxiway A has already been rebuilt to this standard over the last two years but is not addressed or shown in any of the EA exhibits. The MPU uses operational activity levels from the MPU forecast to justify when certain airfield improvements would be made. These operational activity levels are already exceeded in the EA's baseline (2022 actual) and subsequent 2026 and 2031 activity level forecasts for the EA analysis. The MPU forecast and capital improvement program should be updated, and the EA needs to acknowledge all the planned projects in the MPU and how the new activity levels and forecast impact these planned improvements (not just the runway extension and new terminal).

The EA proposed runway extensions depict turn-around pavements added to each runway end. The EA is silent on the fact that the only way an aircraft can reach these full runway length extensions is to taxi on the deficient existing taxiways, back taxi on the active runway to the end of the runway, turn around 180 degrees, receive a departure clearance from the air traffic control tower (when open; the tower is only open between 6AM and 10PM daily) and then depart full length. This is not a safe or efficient operation, particularly for regularly scheduled airline operations. The EA is silent on how runway safety will be maintained, particularly as airline operations increase to the level identified in the EA. While the preferred terminal alternative justifies moving the terminal to the east side of the airfield so that it "precludes commercial aircraft from having to cross Runway 2-20 in all takeoff and landing situations" (pg. 7-30 of the MPU), the EA fails to address how aircraft will access the ends of the extended runway without a full-length parallel taxiway.

The MPU and FAA-conditionally-approved ALP show and study relocated parallel Taxiway A and connector taxiways that meet ADG III design standards as is required when modifying a runway using Airport Improvement Program (AIP) funding. However, the EA does not address the measures needed to meet appropriate design standards. There are additional taxiway system sub-standard conditions that are also not addressed in the EA.

2. Runway Protection Zone (RPZ) – The FAA provides specific guidance on the allowable land uses in the RPZ. Even though the Proposed Action

shows the extension of the runway ends, the EA fails to address the impacts associated with meeting the FAA's RPZ clearance and allowable land use requirements. Full RPZ clearance and land use control is required when a runway extension changes the existing non-standard condition. The MPU and FAA-conditionally-approved ALP address the required easements, and obstruction and land use clearing required for the RPZs to meet current FAA safety standards.

The MPU recommends that consideration be taken to assess the acquisition of land within the existing and future RPZs in fee simple ownership, or an avigation easement that prevents the future development of incompatible land uses. The EA does not address this safety deficiency.

3. Runway Safety Area (RSA) – The EA fails to address the RSA deficiencies. Page 6-10 of the MPU notes: "At the approach end of Runway 20, the Airport perimeter fence, and Dodge Avenue are located within the northernmost portion of the RSA. On the west edge, the RSA is a full 1,000 feet, but tapers to only approximately 940 feet due to the presence of the perimeter fence and Dodge Ave."

   The FAA has approved an RSA Determination deeming this a safe condition. If changes to the Runway 20 end are made, alternatives should review if a full dimensional RSA is feasible. Preliminary analysis shows potential non-standard lateral grading in portions of the RSA may be present. Lateral grade compliance should be confirmed through more precise survey methods during design of the next runway reconstruction.

   The MPU recommends that the RSA be clear of objects. If a full dimensional RSA cannot be achieved, the Airport should seek an RSA Determination from the FAA. Lateral grade compliance should be confirmed during design of the runway reconstruction. And yet, the Proposed Action, as defined and illustrated in the EA, fails to address these safety design deficiencies.

   The proposed action in the EA states that the total proposed runway length would be 6,575 feet, which results in a 60-foot reduction in length from the runway proposed in the MPU (to avoid direct impacts [0.44 acre] to tidal wetlands) and that a displaced threshold is necessary to meet FAA's Runway Safety Area dimension standards. It does not address whether a full dimensional RSA will be achieved, whether obstructions will be removed, or whether a connected RSA Determination (modification to standards) will be sought.

4. Runway Object Free Area (ROFA) – Page 6-13 of the MPU notes: Like the RSA, the Airport perimeter fence, and a portion of Dodge Avenue are located within the ROFA. Also, small structures that house equipment that powers and controls the Runway 2 glideslope and localizer are sited within the ROFA. These NAVAIDS and their associated structures are owned and maintained by the FAA at HVN. Also, a portion of Dodge Ave is located within the ROFA.

   The MPU recommends that the ROFA be clear of objects or the Airport pursue a modification of standards (MOS) for the presence of objects in the ROFA. The Airport should preserve space outside the ROFA for NAVAID structures and Dodge Ave should be relocated outside of the ROFA. The EA does not address the ROFA deficiencies.

5. Runway Approach and Departure Surfaces Obstruction Clearing – The EA fails to study the clearing of obstructions from the runway approach and departure surfaces located immediately north and south of the runway ends. The MPU and FAA-conditionally-approved ALP address the disposition of these obstruction clearing requirements, and yet the EA is silent on these actions necessary to make the additional runway length useable.

6. Navigational Aid Relocation – The EA fails to study the relocation and addition of navigational aids as part of the runway extension. The existing glideslope antenna and associated equipment, Precision Approach Path Indicator (PAPI) and other critical airfield equipment are relocated in the MPU and new facilities are needed on the north end of the runway with the extension of the runway on both ends. The EA is silent on these actions as part of the Proposed Action description and analysis.

7. Approach and Departure Procedure Revisions – Approach and departure procedures associated with the Proposed Action will require connected FAA action to revise these procedures consistent with the new runway extensions and any lowering of visibility minimums, which are expected as per the MPU. The EA fails to address the required FAA changes to these procedures. Likewise, the noise analysis fails to address these required FAA changes and their potential impacts to the surrounding communities.

8. Runway and Taxiway Lighting, Marking and Signage – The EA fails to address the runway and taxiway edge and centerline lighting, marking

and signage changes and relocations necessitated by the Proposed Action to extend the runway.

9. One-Engine Inoperative Departure Surface Clearing – The EA fails to address the effects of clearing obstructions for the one-engine inoperative departure procedure. To safely use the proposed runway length and operate at an increased aircraft weight, Avelo will be required to ensure that their operations have adequate one-engine inoperative clearance. The EA is silent on the clearance of this surface and the potential need to clear obstructions to make this additional runway length operationally safe and useable.

By failing to completely describe the Proposed Action and connected actions required to approve it, the EA fails to fully disclose and analyze all the Proposed Action impacts. This is a clear case of segmentation. Either the Proposed Action must include all of the elements necessary to comply with FAA design and safety standards or provide compelling justification for modifications to these standards so that they are disclosed, analyzed, and approved by the FAA.

The EA instead attempts to limit the impacts of the project on wetlands and RPZ land use by failing to fully describe the project and thereby failing to analyze all of its impacts. By not describing the full extent of connected federal actions necessary to address and remedy sub-standard safety conditions, the project is improperly segmented.

**Conclusion**

To an astonishing extent, the EA is internally inconsistent and fundamentally flawed. It overstates the future traffic handling capabilities of the existing Airport facilities after citing chapter and verse how woefully inadequate those facilities are to handle existing passenger traffic levels -- much less the predicted explosive future growth at the Airport.

At the same time, the EA discounts the likelihood that the proposed new facilities will facilitate increased flights and destinations served by Avelo and other airlines, including Allegiant, which has stated that it wants to serve the Airport but cannot do so unless the runway is extended. This defies credulity, particularly since the facilities will be developed and operated by a private operator that has every incentive to maximize passenger traffic growth to recoup its massive investment in those facilities.

The EA twists itself into these contortions to come up with the monumentally implausible conclusion that new facilities designed to accommodate much

more passenger traffic will, in fact, **not handle any more** passengers than the No Action scenario would, and that operations at the new facilities would actually result in **fewer** commercial passenger flights – and therefore less environmental impacts -- than operations at the existing facilities.

These fundamental flaws – and their consequences for the resulting noise and air quality analyses – by themselves demonstrate that the EA is unreliable for honestly assessing the environmental impacts of the Proposed Action compared to the No Action alternative. But there is more.

In proposing a new Airport passenger access road that connects to the Town, the proponents of the Proposed Action, the Airport Authority and the City of New Haven, totally ignored the well-known flooding problems at a crucial intersection through which virtually all Airport traffic would have to pass.

Astonishingly, the EA pretends that this access route nonetheless meets the purpose and need of providing suitable and efficient roadway access to the terminal area. This flooding issue -- as well as analysis of other traffic issues, including special Town events that gridlock the access route for hours, and chronic traffic problems that will be worsened by Airport traffic at critical intersections identified by the Town's independent traffic expert -- further demonstrate that, at the very least, an alternative access road (such as the existing access road) to the Airport must be provided for passengers.

The EA also ignores the exacerbation of the flooding problem that would be caused by dumping at least 4,000 truckloads of fill into the floodplain and paving over 21 acres of Airport land with impervious surfaces. The Town's independent experts have debunked the EA's staggering contention that these planned actions will not cause significant direct and indirect environmental impacts in this sensitive coastal area. They have further detailed the myriad ways the EA falls short of properly considering the impacts of the Proposed Action on wetlands, stormwater issues, biological resources, and Climate Change Adaptation.

The EA also fails to provide adequate analysis of potential constructive use of 4(f) properties due to noise and access impacts of the Proposed Action. This inadequacy likely stems from the failure to properly consult with Town officials in identifying potential 4(f) sites and potential impacts thereto.

The EA engages in classic "segmentation" by leaving out important elements (e.g., taxiway enhancements, safety zones, lighting, and navigational aids) that must be part of the runway extension Proposed Action in order to make the runway operationally safe and efficient for aircraft use and compliant with FAA design standards. As a result, the EA does not address the full range of

environmental impacts that would be associated with the runway extension. This is not allowed under NEPA.

The City of New Haven and the Airport Authority (a majority of whose Board is appointed by the City) seem content to dump the environmental burdens of the Proposed Action on the Town of East Haven and its residents and businesses, while reaping the economic rewards in New Haven. The private operator of the Airport (pursuant to the long term lease and development agreements entered into with the operator by the Airport Authority) is a for profit company that will of course prioritize profit over any other interests. The private operator here is obligated under the long term lease and development agreement to make substantial investments in the Airport. It will need to recoup those investments and, again, make a profit regardless of the impacts on the Town. While disturbing, this is understandable from the City's and the private operator's self-interested perspectives.

However, what is not understandable is that the FAA has not expressed any concern about the Environmental Justice implications of alleviating current environmental burdens in a New Haven neighborhood which does **not** meet the criteria to be designated a federal Environmental Justice neighborhood, at the expense of the East Haven neighborhood, which is in fact an Environmental Justice neighborhood per federal standards as stated in the EA. This is exactly what the federal Environmental Justice requirements are intended to prevent.

These concerns and more, as detailed in the above comments and the Town's Independent Expert Reports, amply demonstrate that the EA does not provide a sufficient basis for analyzing the potential environmental impacts of the Proposed Action. Moreover, they show the need for the FAA to prepare an Environmental Impact Statement to analyze thoroughly the significant impacts identified, with extensive public input.

If it does not commence an EIS at this point, then at the very least, the agency should direct the preparation of a new Environmental Assessment that corrects the deficiencies in the EA that have been pointed out by the Town, its independent experts, and other commenters.

**Attachments to Comments Submitted by the Town of East Haven on The Draft Environmental Assessment for Tweed New Haven Airport Regarding The Proposed Extension of Runway 02-20 and Construction of a New Enlarged Airport Terminal and Associated Facilities**

Attachment A – Johnson Aviation, Inc. Resumes

Attachment B – Davison Engineering Report on Environmental Assessment dated April 21, 2023

Attachment C – Trinkaus Engineering. LLC Report on Environmental Assessment dated April 18, 2023

Attachment D – VN Engineers, Inc. Report on Environmental Assessment dated April 27, 2023 with attached independent Tweed New Haven Airport Expansion Traffic Impact Study

Attachment E – Letter dated April 26, 2023 from the Honorable Joseph A. Carfora, Mayor, Town of East Haven, Connecticut

Attachment F – Letter dated April 26, 2023 from Edward R. Lennon, Jr., Police Chief, Town of East Haven, Connecticut

Attachment G – Letter dated April 26, 2023 from Christopher Rosa, Assistant Fire Chief, Town of East Haven, Connecticut

Attachment H – Letter dated April 26, 2023 from Michael J. Luzzi, Esquire, Town Attorney, Town of East Haven, Connecticut.

Attachment I – Letter dated October 7, 2022 from the Honorable Joseph A. Carfora, Mayor, Town of East Haven, Connecticut

Attachment J – Email dated April 28, 2023 from Fire Chief Marcarelli re flooding Coe/Hemingway Short Beach

Attachment K – Hemingway Avenue/Coe Avenue Corridor Study Final Report (SCRCOG/CDM Smith)

Attachment L – Email dated July 11, 2022 From Melissa Pfaffinger, Connecticut DOT re East Haven Drainage

Attachment M – Letter dated 04.21.2023 from Connecticut DOT re Notification of Scoping Efforts

COMMENTS OF THE TOWN OF EAST HAVEN ON THE
TWEED NEW HAVEN AIRPORT NEPA DRAFT
ENVIRONMENTAL ASSESSMENT RUNWAY 02-20
EXTENSION AND TERMINAL EXPANSION PROGRAM

Attachment A

Johnson Aviation, Inc. Resumes

**NICK JOHNSON**

**PRESIDENT & CEO – JOHNSON AVIATION, INC.**

**Nick Johnson** is a Complex Strategy Advisor leading airport land use, regulatory, facilities and financial project solutions. He has over 30 years of experience and expertise in airport planning and development at airports of all sizes. His experience includes project development on airports, nearby and through-the-fence by applying a broad array of expertise from business and financial analysis to airspace and operational procedures improvement. He does so as a collaborator with teams of all sizes to meet client needs and expectations. Specialties include lease negotiations, business strategy, facilities planning, ownership transfer, environmental entitlements, regulatory certification, security planning, real estate strategy and construction planning. Nick founded Johnson Aviation in 2004 providing leadership on high profile and contentious airport master planning and environmental projects.

Nick is working closely with the San Diego County Regional Airport Authority (SDCRAA) on its Airport Development Program (ADP) to complete the long-term redevelopment of San Diego International Airport. He is part of the Authority's team to entitle a replacement to Terminal 1, develop airfield improvements to optimize the efficiency of the busiest single-runway airport in the US and optimize landside access. He has also supported the Authority's CFR Part 150 study update to reduce community noise impacts and improve land use compatibility.

From 2011 to 2018, Nick worked closely with the City of Ontario and the Ontario International Airport Authority (OIAA) to transfer ownership and operation of Ontario International Airport (ONT). He worked with a small team to develop the strategic business plan adopted in 2013 that defines and guides the Authority's mission. In 2015 and 2016, Nick led a large and diverse ownership transfer team to meet all regulatory, operational, financial, environmental, and legal requirements of the FAA. That team successfully transferred the ownership and operation of the Airport in 15 months. Johnson Aviation staff continued as the Airport's planning and development program managers for 20 months during the staffing transition negotiating long-term leases for the airport's FBO redevelopment and for a FedEx Regional Sorting Hub relocation and expansion that is currently under construction.

Since 2017 Nick has assisted Google with the Master Planning and development of their Proposed San Jose Campus in the City of San Jose, California and within the Mineta San Jose International Airport (SJC), Airport Influence Area (AIA) in Santa Clara County California. The Google Campus has the potential to transform Downtown San Jose with many new and expanded live/work development options. By focusing on the expansion of the existing Diridon Station, the Google Campus will complete station infrastructure for the California High Speed Rail, BART and Valley Transit Authority systems. The project will both improve and potentially modify SJC air service depending on the various building heights and locations on the site. The total campus development is likely to exceed 10 million square feet of office, residential and retail uses that will be developed over the next eight years. The San Jose City Council approved the proposed building height plan in March 2019 and design of the project is underway. This work led to additional current assignments for redevelopment of the YouTube campus in San Bruno, California near San Francisco International Airport.

Property redevelopment and land use compatibility near airports taking full advantage of the airport economic engine is one of Nick's unique contributions to communities near airports. Currently he is working with the Colorado Springs Airport on an updated airport land use plan to balance airport operations and the Peterson Air Force Base mission with unprecedented regional growth. Also, he is serving the City of Perris and various developers near March Air Reserve Base in Riverside County to both preserve and expand the vitality of the Base and its civilian cargo operations. He has worked with Boeing

and their development successors to redevelop manufacturing facilities at Long Beach Airport, El Segundo, Seal Beach and Mesa Arizona. Other current airport land use compatibility planning includes the City of Goleta, City of San Luis Obispo and Mendocino County.

Nick worked with the FAA on updates and revisions to its key airport planning guidance documents. The FAA's Master Plan Advisory Circular (AC) was revised and updated to address innovations and lessons learned in the field of airport planning. The FAA's Airport Land Use Compatibility AC was completely rewritten to address the challenges of effective land use planning near airports to ensure the safe and compatible use of nearby land while maximizing the economic development characteristics of these surrounding areas. The FAA's Solar Guidance document was updated to consider the most recent findings of solar panel glare analyses and the effects on safe air navigation.

Nick worked closely with Los Angeles World Airports (LAWA) to secure City Council approval of the LAX Master Plan entitlements that were ultimately approved in December 2004. He provided technical planning support to the legal defense team on the LAX Master Plan when it was sued in State and federal courts. Four legal challenges related to the California Environmental Quality Act (CEQA) Environmental Impact Report (EIR) and to the National Environmental Policy Act (NEPA) ROD were successfully settled in December 2005. Nick also facilitated a required review and approval of key settlement provisions by the Federal Aviation Administration.

Nick worked with LAWA and its consulting team in the early phase of a multi-year study of key components of the LAX Master Plan. Together, they crafted an approach in close coordination with airline and community stakeholders. This planning initiative by LAWA was intended to modernize LAX and expand regional airport capacity throughout Southern California.

Nick provided strategic guidance to a team of airport planners from HNTB Corporation on the San Diego International Airport Master Plan. This plan was developed to meet the immediate needs of the airport and airline community while the policy for the long-term future of the airport was resolved. The Green Build terminal project was the first major plan component completed in 2013. As stated previously, Nick is currently providing strategic planning for the Airport Development Plan as the Airport Authority seeks state and federal environmental entitlements to replace Terminal 1.

Prior to starting Johnson Aviation, Nick was a Vice President with Landrum & Brown in the firm's airport planning practice. He served as Landrum & Brown's Project Manager for the Los Angeles International Airport (LAX) Master Plan. He led the way in developing a plan for LAX that balanced the needs of the regional economy while finding practical solutions for the local impact to nearby communities as part of a multi-discipline consultant team. Nick also led various land re-use and property development projects for Landrum & Brown at other major California airports.

***Education***

Master of Public Administration, Aviation Administration – Southern Illinois University
Bachelor of Science, Aviation Management - Southern Illinois University
Air Traffic Control Internship – Federal Aviation Administration
Aviation Flight Program– Southern Illinois University
Active General Aviation Pilot

# Selected Projects

A wide array of planning and development projects working with airports of all sizes.

**Los Angeles International Airport**
- Master Plan Study
- Environmental Impact Statement/ Environmental Impact Report
- International Gateway Analysis
- Strategic Planning Analysis
- Airport Land Use Plan
- Stipulated Settlement Agreement
- South Airfield Improvement Project EIR
- North Airfield Safety Study

**Denver International Airport**
- Airspace Redesign Program for 32 new RNAV arrival and departure procedures
- Aircraft De-ice Facility analysis and use program

**San Diego International Airport**
- Airport Development Plan EIR and EA
- Airport Master Plan
- Environmental Impact Report/EA
- Airport Site Selection Program Phase 1
- Gate Allocation Study
- 1996 Strategic Plan

**Ontario International Airport**
- Strategic Plan
- Adaptive Property Reuse Study
- Master Plan Study

**John Wayne-Orange County, CA Airport**
- Settlement Agreement Extension (representing the City of Newport Beach)
- Master Plan Update

**Boeing Realty Corporation**
- Long Beach Airport Commercial Property Reuse Study
- Huntsville Alabama Commercial Property Reuse Study
- Corporate Headquarters Relocation Team

**The Boeing Company**
- Douglas Park FAA Land Use Coordination
- Douglas Park Rezone Land Use Support
- Boeing Helicopter Aviation Compatibility

**City of Phoenix, Aviation Department**
- Airspace Feasibility Assessment

**US Airways**
- Philadelphia Hub Development Study

**Miami International Airport**
- Capital Improvement Program Verification

**Chicago O'Hare International Airport**
- Cargo Forecast
- Long-Range Strategic Forecast
- Terminal Development Program

**Chicago Midway Airport**
- General Aviation Tie-down Rates and Charges Policy
- Privatization capacity analysis

**Greater Rockford Airport, Rockford, IL**
- UPS Regional Hub Site Location Study and Implementation Plan
- Layout Plan for Air National Guard/Air Force Reserve Units Relocation Study (under BRAC)
- Passenger Facility Charge Application
- FAR Part 107 Airport Security Plan
- Annual Capital Improvement Program/AIP Grant Applications

**Capital Airport, Springfield, Illinois**
- Layout Plan for Air National Guard/Air Force Reserve Units Relocation Study (under BRAC)

**Dane County Regional Airport, Madison, WI**
- Noise Mitigation Home Owners Assistance Program

**Chicago Executive Airport, Wheeling/Prospect Heights, IL**
- Eminent Domain Land Acquisition Program (37 Parcels)
- Annual Capital Improvement Program/AIP Grant Applications
- Airport Layout Plan and Report

**Dupage Airport, West Chicago, IL**
- Airport Layout Plan and Report
- Runway 1L/19R and 1R/19L Extension Justification Report
- Annual Capital Improvement Program/AIP Grant Applications

**Aurora Municipal Airport, Aurora, IL**
- Airport Layout Plan and Report
- Environmental Assessment for New Runway 15/33
- Annual Capital Improvement Program/AIP Grant Applications
- Layout Plan for Army Helicopter Unit Location Study

**Schaumburg Airpark, Schaumburg, IL**
- Environmental Assessment for Public Acquisition of Privately-owned Airport
- Land Acquisition Program Development and Implementation
- Land Use Development Plan

**Freeport Albertus Airport, Freeport, IL**
- Master Plan Study
- Environmental Assessment of Runway 6/24 Extension and Widening
- Land Acquisition Program Development and Implementation
- Installation of Non-Federal Localizer/DME

**Elmhurst Memorial Hospital, Elmhurst, IL**
- Rooftop Heliport Siting and Layout Study
- Expert Testimony on Rooftop Heliport

**RotoCraft Partnerships, Ltd.**
- Heliport Siting and Layout Study

**Southern Illinois Airport, Carbondale, IL**
- Southern Illinois Radar Coverage Study/Simulation

**Illinois Department of Transportation, Division of Aeronautics**
- Illinois State Airport/Heliport System Plan

# Airport Compatibility & Land Use Projects

Planning and developing property on airports, nearby and through-the-fence for the highest and best economic return to local communities interested in maximizing airport proximity while reducing noise impacts.

**Los Angeles International Airport**
- Comprehensive Airport Land Use Plan
- Overrule of Los Angeles County Airport Land Use Commission
- Stipulated Settlement Agreement including Los Angeles County ALUC issues

**Ontario International Airport**
- Adaptive Property Reuse Study

**Boeing Realty Corporation**
- Long Beach Airport Commercial Property Reuse Study
- Huntsville Alabama Commercial Property Reuse Study
- Corporate Headquarters Relocation Team

**The Boeing Company**
- Douglas Park FAA Land Use Coordination
- Douglas Park Rezone Land Use Support
- Boeing Helicopter Aviation Compatibility
- Boeing B717 Facility Reuse, Long Beach, California
- Boeing Buildings S30/S31 Aviation Compatibility, El Segundo, California
- Boeing Building S50 Aviation Compatibility, El Segundo, California

**AEG Worldwide**
- Airport Compatibility Study and Land Use Plan – Riverside County California Airport Land Use Commission

**Lee Homes**
- Hawthorne Central Park Airport Compatibility Study and Land Use Plan – Los Angeles County California Airport Land Use Commission

**City of Perris, California**
- March Air Reserve Base & Joint Powers Authority Coordination on Airport Land Use Compatibility Planning – Riverside County California Airport Land Use Commission
- March Joint Land Use Study Coordination - Riverside County Airport Land Use Commission
- Perris Valley Airport Compatibility Study – Riverside County California Airport Land Use Commission Coordination
- City General Plan and selected Specific Plan Updates based upon Adopted Airport Land Use Compatibility Plan.

**Kohl Ranch – Thermal, California**
- Kohl Ranch Specific Plan Amendment Study – Airport Compatibility Plan – Riverside County Airport Land Use Commission
- Thermal Motorsports Park (TMP) Race Track Plan – Riverside County Airport Land Use Commission

**Thermal Motorsports**
- Race Track land use planning and approvals adjacent to Jacqueline Cochran Regional Airport.
- BMW Performance Center West ALUC review and approval.
- Specific Plan Amendment

**Sanders Industries**
- New Manufacturing and Distribution Facility Aviation Compatibility Planning – Long Beach, California

**Xebec Incorporated**
- New Manufacturing and Office Facility Aviation Compatibility Planning – Long Beach, California

**Nexus Development Corporation**
- Hotel and Office Facility Aviation Compatibility Planning – Long Beach, California

**Sares-Regis Group**
- Redevelopment and reuse of aviation manufacturing facilities – Long Beach, California
- Land use planning for manufacturing, industrial, distribution and office facilities – Long Beach, California
- Land use planning near March Air Reserve Base – Solar Glare Analysis
- Land use planning near Chino Airport
- Land use planning near Ontario International Airport

**Los Angeles Meto**
- Crenshaw/LAX Transit Corridor design and construction planning through the LAX Section
- Crenshaw/LAX Line Maintenance Yard land use planning, site clearing and business relocation support.

**Dollar Thrifty Automotive Group**
- Project manager for relocation and consolidation of LAX-area facilities and operations

**San Luis Obispo Airport Land Use Commission**
- Update to the City of San Luis Obispo Land Use and Circulation Elements of its General Plan
- Airport Land Use Plan update and revisions.
- Land use planning guidance and strategy.

**Google – San Jose, California**
- Diridon Station Area Plan for new Google headquarters and related development

**Oltmans Construction – Moreno Valley, California**
- Land use planning near March Air Reserve Base – Solar Glare Analysis

# Technical Consultant, Litigation Support & Expert Witness

***United Air Lines, Inc., v. The City of Los Angeles***
- Technical airport planning consultant, expert witness for defendant – deposition and trial

***Boca Airport, Inc., d/b/a Boca Aviation v. Proskauer Rose***
- Technical airport planning consultant and expert witness for plaintiff – deposition and trial

***Silverwing at Sandpoint, LLC v. Bonner County (Idaho)***
- Technical airport planning consultant, expert witness for defendant – deposition and trial

***City of Ontario v. City of Los Angeles***
- Technical airport planning consultant and litigation support for plaintiff – deposition and settlement

***Eagles Nest II, Inc. v. Chino Development League, Inc.; Celso M. Palafox***
- Technical airport planning consultant and expert witness for plaintiff – designated expert (to date)

***Dryden Oaks, LLC; and Durkin-CAC LOT 24, LLC v. San Diego County Regional Airport Authority; County of San Diego***
- Technical airport planning consultant and expert witness for defendant, San Diego County Regional Airport Authority – retained consultant and expert (to date)

**DOROTASKRZYPEK**

**SENIOR AVIATION CONSULTANT**

**Dorota Skrzypek** began her aviation career as a commercial pilot ferrying aircraft. After earning her BSc in Aviation Management she moved to solving airport problems. Her airport work includes analysis for large master planning efforts at Los Angeles International Airport, managing smaller planning projects at Banning Municipal Airport, airspace analysis for Syracuse Hancock International Airport, and regulatory evaluation of Part 150 noise studies and environmental reports. Dorota was part of the team that that successfully transferred ownership of Ontario International Airport (ONT) to the Ontario International Airport Authority (OIAA) from Los Angeles World Airports (LAWA). Dorota was responsible for managing the ALTA Survey, ALP, and Exhibit A update efforts, updating the Airport Certification Manual and Airport Security Program, and coordinating transfer of engineering and environmental records. Dorota worked with the OIAA to build a Capital Improvement Program, structure and manage engineering and environmental teams/departments and create project approval and procurement processes internally and with the City of Ontario.

Recently, Dorota was part of the 2022 Airport Layout Plan Update for the Southern California Logistics Airport (SCLA), which focused on strategic land use analysis, aeronautical versus non-aeronautical land uses, and funding for failing pavements.

In 2020, Dorota was project manager for the Master Plan Update for Sacramento International Airport, which included coordination with other planning to create a comprehensive, strategic, and realistic 20-year capital improvement document. Customer parking and aircraft gate facilities were the focus of the update.

For the Richmond International Airport, she worked with airport staff to update GA demand and requirements at the Airport, including those for CBP operations; the driver being two FBO contracts expiring in 2026. Dorota worked with her team to validate the inventory, operations, GA facilities requirements, CBP requirements for GA processing, and devise alternatives and recommendations.

Dorota has provided technical, policy, and regulatory analysis for the following projects: Los Angeles County Transportation Authority Crenshaw/LAX Transit Corridor Project Construction Safety & Phasing Plan (CSPP), Federal Aviation Administration (FAA) Advisory Circulars (ACs) for master planning and solar guidance; San Luis Obispo Airport Land Use Compatibility Report, Ontario Airport Noise Exposure Map Update, and Perris Valley Airport comprehensive land use planning.

For the Crenshaw/LAX Transit Corridor Project, Dorota managed over twenty authors and eight volumes of content that made up the design-build documents for L.A. Metro's $2 billion Crenshaw/LAX Transit Corridor Project. She led the team through publishing and quality control checks, and facilitated meetings to report on status and technical findings to the client.

Dorota was Project Manager for the following master planning efforts: Oswego County Airport Master Plan Update; Cortland County Airport Master Plan Update; Banning Municipal Airport Master Plan Update.

Dorota provided regulatory evaluation for the following environmental documents: New York/New Jersey/Philadelphia Metropolitan Area Airspace Redesign Draft Environmental Impact Statement; Las Vegas Four Corner-Post Plan Draft Supplemental Environmental Assessment; Baltimore International Airport Part 150 Update.

Other airport planning efforts include Syracuse Hancock International Airport General Aviation Expansion Feasibility Study; Tompkins County Airport Runway Safety Area Study; Erie International Airport Parking Analysis; Erie International Airport Revised Air Cargo Forecast; Los Angeles International Airport Master Plan; San Diego International Airport Taxiway Charlie Analysis; Fire Island, Alaska Airport Site Concept Feasibility Assessment; San Diego International Airport Gate Utilization Study; City of Phoenix Aviation Department Site Selection Study.

COMMENTS OF THE TOWN OF EAST HAVEN ON THE TWEED NEW HAVEN AIRPORT NEPA DRAFT ENVIRONMENTAL ASSESSMENT RUNWAY 02-20 EXTENSION AND TERMINAL EXPANSION PROGRAM

Attachment B

Davison Engineering Report on Environmental Assessment dated April 21, 2023

April 21, 2023

Ms. Jean Perry Phillips, Esq.
Pullman & Comley, LLC
90 State House Square
Hartford, Connecticut 06103-3702

**RE: Environmental Assessment Review, Tweed New Haven Airport, Runway 02-20 Extension and Terminal Expansion Program**

Dear Ms. Phillips,

At the request of the Town of East Haven, I have reviewed the following McFarland Johnson materials submitted by Tweed New Haven Airport for the proposed runway and terminal expansion project.

1. NEPA Draft Environmental Assessment (EA), Runway 02-20 Extension and Terminal Expansion Program, March 2023, including the following Appendices:
    a. Appendix A: Runway 02-20 Length Eligibility Analysis.
    b. Appendix B: FAA Section 163 Determination
    c. Appendix C: Agencies Correspondence
    d. Appendix D: Public Involvement/Public Comments
    e. Appendix E: PGAL Tweed Airport New Haven East Terminal Expansion
    f. Appendix F: Wetland Report
    g. Appendix G: Environmental Background Information
    h. Appendix H: SHPO Project Review Package
    i. Appendix I: Noise and Air Quality Technical Report
    j. Appendix J: Environmental Justice Screening Report
    k. Appendix K: Traffic Study for New Terminal, Traffic Study for Existing Terminal.

2. Trinkaus Engineering: Tweed New Haven Airport, Runway 02-20 Extension and Terminal Expansion Program, letter dated April 18, 2023

We offer the following comments relative to our review:

General

1. Coastal wetlands (tidal and freshwater) are critically important for the benefits they provide to coastal resiliency, floodwater management including storm surge attenuation, water quality, and wildlife.
2. The Long Island Sound Study ("LISS") is a cooperative effort formed in 1985 by the U.S. EPA, and the states of Connecticut, and New York. It consists of federal and state agencies, user groups, concerned organizations, and individuals dedicated to restoring and protecting the Sound. In 1994, the LISS developed a Comprehensive Conservation and Management Plan ("CCMP") to protect and restore Long Island Sound. This plan was updated in 2015 with targets to drive further progress through 2035.
3. The first theme of the 2015 CCMP is "Clean Waters and Healthy Watersheds" with a goal of improving water quality by reducing contaminant and nutrient loads from the land and waters impacting Long Island Sound.
4. The airport property and many of the surrounding neighborhoods lie within FEMA Flood Zones with mandatory flood insurance purchase requirements and floodplain management standards (VE and AE). Neighborhoods surrounding the airport are currently affected by flooding, absent further adverse impacts from anticipated sea level rise, storm intensity and frequency increases from climate change. The Sea Level Affecting Marshes Model ("SLAMM") is a widely adopted and effective model to predict wetland response to long-term sea-level rise and has been applied in every coastal state. Figures 1 & 2 depict SLAMM generated projected sea level rise on marshes proximate to the project area in 2025 and 2085. These figures demonstrate that 1. Areas within and immediately surrounding the project area would be affected by sea level rise; and 2. While the project as proposed would not directly impact tidal wetlands, it would prevent additional tidal wetlands from forming naturally in and around the project area and tidal wetlands may be impacted by stormwater runoff and other aspects of the project.

Wetland Impacts

1. The project as described will require the filling of at least 9.3 acres of freshwater wetlands. Remaining developed areas will directly abut freshwater and tidal wetlands.

2. The Wetland Report assigned only Sediment/Toxicant Retention and Production Export functions to the affected wetlands (Wetlands 04. 05, 06A, 06B). These wetlands also provide Nutrient Removal/Retention and Floodflow Alteration functions at a principal level due to the fact that these wetlands are low-gradient, densely vegetated, and located within a 100-year floodplain. Nutrient/Removal/Retention functions are closely related to Sediment/Toxicant Retention functions which are almost always provided together. The loss of 9.3 acres of wetlands providing these functions will result in a loss of these functions and subsequent adverse impact to remaining freshwater and tidal wetland areas.
3. The proposed expansion will increase the impervious area by at least 941,922 square feet (21.62 acres) for a total of 1,232,415 square feet when one includes the preexisting 240,493 square feet of impervious surfaces
4. There are significant design challenges associated with proper stormwater management on the site considering almost 22 acres of additional impervious cover are proposed. Section 5.14.1.2 of the EA indicates that "infiltration opportunities are somewhat limited due to the high groundwater levels at the proposed terminal location. Detention and treatment would be provided for stormwater that cannot be infiltrated". Detention must occur below the elevation of the proposed parking garage, surface parking, airfield, terminal, runway and other stormwater generating surfaces (stormwater is gravity fed) and above groundwater which is acknowledged in the EA as "high", or closer to ground, which will limit the depths and volumes of detention basins. Basins will therefore likely need to be large and shallow, occupying large areas. These areas are not depicted on conceptual design plans. Without infiltration, these systems are likely to pond water, potentially attracting waterfowl, which present a safety hazard to aircraft.
5. Trinkaus Engineering's review of proposed stormwater treatment indicates that "The increase of impervious area will result in significant increases of non-point source pollutants, such as Total Suspended Solids (TSS), Total Nitrogen (TN), Total Phosphorous (TP), Metals, Petroleum Hydrocarbons, and chloride based deicing agents"
6. Improperly treated stormwater is the single largest source of water quality degradation in Long Island Sound and surrounding coastal wetlands. Nitrogen is particularly harmful to tidal wetlands.

<u>Floodplain Impacts</u>

1. The EA states that construction of the runway profile and safety area improvements, the east terminal and site grading, and the parking garage will require approximately 61,300 cubic yards (or over 4,000 truckloads) of fill within a 100-year flood zone. As discussed by

Mr. Trinkaus, it is likely that more fill will be required to achieve required FEMA elevations in these areas and in the area of the proposed roadway and bridge, and the surface parking area

2. To compensate for floodplain loss, an equal volume of cut is required in the same general location and elevation as the fill. It is unclear where those cuts can occur at the Terminal Expansion location which is low-lying and surrounded by wetlands. Cuts in areas remote from the Terminal Expansion fill and at elevations higher than the fill will not mitigate for the anticipated loss of flood storage capacity. The project plans do not reference locations of cuts and fills.
3. Any loss of flood storage capacity that is not adequately compensated for will result in increased flooding in the areas surrounding the project which are reportedly already experiencing flooding at unacceptable levels.

Biological Impacts

1. Due to intensive use of the existing project area and ongoing mowing, the habitat value of the Project Area would be considered low overall, as described in the EA. The EA does acknowledge that the State-listed field bentgrass (*Paspalum laeve*) and potentially the state-listed two-flower Cynthia (*Krigia biflora*) will be directly impacted by the Project. These species are dependent upon anthropogenic habitat maintenance, making their presence less notable than a natural occurrence. But complete surveys and mitigation plans would be required to receive a Final Determination from the CTDEEPs Natural Diversity Database program which is required for a Stormwater General Permit.
2. No discussion was provided regarding the potential for secondary impacts of the project on wildlife, including both inland wetland and tidal species. Secondary impacts are those that occur to habitats adjacent to a project. They include noise and light pollution (which can disrupt audial communications and nocturnal behaviors), the discharge of stormwater pollutants such as nitrogen, phosphorus, hydrocarbons, heavy metals, sediment or de-icing agents that can impair water quality, and the impact of increased stormwater volume that can alter wetland hydroperiod (i.e., change the depth and duration of standing water within a wetland) and increase water temperatures (i.e., thermal impacts) which can impact tidal marsh vegetation (i.e., marsh dieback), and aquatic habitat in downstream Morris Creek.
3. The potential for secondary impacts from stormwater on fish and shellfish is not discussed. The only mention of shellfish includes Section 4.15.2, “Morris Creek has a Surface Water Quality Classification “SA” designated for: habitat for marine fish, other aquatic life and

wildlife; shellfish harvesting for human consumption.." They go on to mention in section 5.4 Coastal Resources, "The Proposed Action is not anticipated to result in adverse impacts to tidal wetlands…wildlife/finfish/shellfish habitat." However no data or analysis is provided to support this supposition or address the reasonably foreseeable impacts from stormwater. Morris Creek is an active oyster restoration site being led by UCONN Marine Science Researcher Zofia Baumann (an article highlighting the oyster restoration efforts was posted as recently as November 7, 2022; link: https://marinesciences.uconn.edu/tag/morris-creek/). The EA mentions nothing of any ongoing research in the adjacent areas to the project.

4. The list of potential fish species in Section 4.3.3 does not include species that may utilize tidal creeks at various life stages, including: Mummichog, Atlantic Silversides or Alewife. Juvenile fish may utilize Morris Creek as a refuge site, especially given the increased habitat present due to the shellfish restoration projects that are ongoing. There is also potential for other fish species not listed in Section 4.3.3 to swim in and out of these tidal waters for feeding purposes. While the impacts to migratory fish species may be minimal, there is no discussion whatsoever of any potential impacts. Existing and proposed runways drain to Morris Creek and Tuttle Brook. There are several published scientific papers[1] detailing the potential adverse impacts of certain deicing chemicals used at

[1] Koryak, Michael, et al. "The impact of airport deicing runoff on water quality and aquatic life in a Pennsylvania stream." *Journal of Freshwater Ecology* 13.3 (1998): 287-298.

Pillard, David A. "Assessment of benthic macroinvertebrate and fish communities in a stream receiving storm water runoff from a large airport." *Journal of Freshwater Ecology* 11.1 (1996): 51-59.

Swietlik, William. *The Environmental Impacts of Airport Deicing--Water Quality*. Environmental Protection Agency, Washington DC Office of Water, 2010.

Sulej-Suchomska, Anna Maria, Piotr Przybyłowski, and Żaneta Polkowska. "Potential toxic effects of airport runoff water samples on the environment." *Sustainability* 13.13 (2021): 7490.

Chung, Kyong-Hwan, Sang-Chul Jung, and Byung-Geon Park. "Eco-friendly deicer prepared from waste oyster shells and its deicing properties with metal corrosion." *Environmental Technology* 42.21 (2021): 3360-3368.

Frank, M. D. *Chemical deicers and the environment*. CRC Press, 1992.

Hartmann, Jason T., et al. "Establishing mussel behavior as a biomarker in ecotoxicology." *Aquatic Toxicology* 170 (2016): 279-288.

airports that impact shellfish and fisheries populations without proper stormwater treatment.

EA Section 5.14.1.4, Significant Impact Threshold - Wetlands and Surface Water Features

The EA in Section 5.14.1.4 contains statements that are not supported by the information presented in the EA, including the following:

1. The project does not have the potential to "Adversely affect a wetland's function to protect the quality or quantity of municipal water supplies, including surface waters and sole source and other aquifers."

   Response: Site wetlands provide principal functions associated with water quality protection (Sediment/Toxicant Retention and Nutrient Removal/Retention). Filling wetlands that provide these functions represents an adverse effect to these functions.

2. The project does not have the potential to "Substantially reduce the affected wetland's ability to retain floodwaters or storm runoff, thereby threatening public health, safety, or welfare (the term welfare includes cultural, recreational, and scientific resources or property important to the public)".

   Response: The project is projected to require approximately 61,300 cubic yards (or over 4,000 truckloads) of fill within a 100-year flood zone. There is a reasonable chance that more fill will actually be required given actual and required elevations and project components. The project plans do not demonstrate the ability to compensate for this volume of fill with cuts at a similar location and elevation.

3. The project does not have the potential to "Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands".

   Response: Properly treating stormwater generated from over 20 acres of additional cover on a site lacking infiltration capacity, with high groundwater and surrounded by wetlands presents significant engineering challenges. Acceptable stormwater treatment measures have not been demonstrated to be feasible on the site. Absent a demonstrable design, the information presented indicates a high likelihood of wetland degradation due to improperly treated stormwater discharges from the site. The cumulative impact of foreseeably degraded inland and tidal wetlands with the planned loss of a minimum of 9.3 acres of wetlands should be, but is not, considered.

4. The project does not have the potential to “Be inconsistent with applicable state wetland strategies.”

   Response: There are no state wetland strategies that support over 9-acres of wetland filling.

Respectfully submitted,

Matthew Davison
*Registered Soil Scientist*
*Professional Wetland Scientist*
*Certified Professional in Erosion and Sediment Control*
*CT Certified Forester*
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Eric Davison
*Wildlife Biologist*
*Registered Soil Scientist*
eric@davisonenvironmental.com

*Attachments: Figures 1 and 2*


## Projected 2025 Sea Level Rise Effects on Marshes

Tweed Airport
New Haven & East Haven, CT

***Legend***

- Approximate Project Site
- Approximate Airport Property
- Municipal Boundary

**2025 Likelihood of Coastal Marsh**

- 1-20%
- 20-40%
- 40-60%
- 60-80%
- 80-100%

*Map Notes:*
*Sea Level Affecting Marshes Model (SLAMM) data derived from www.longislandsoundstudy.net/slamm*
*Base Map: CTECO 2019 Aerial Imagery*
*Map Date: March, 2023*

SCALE

1 inch = 1,250 feet

0 625 1,250 Feet

N W E S

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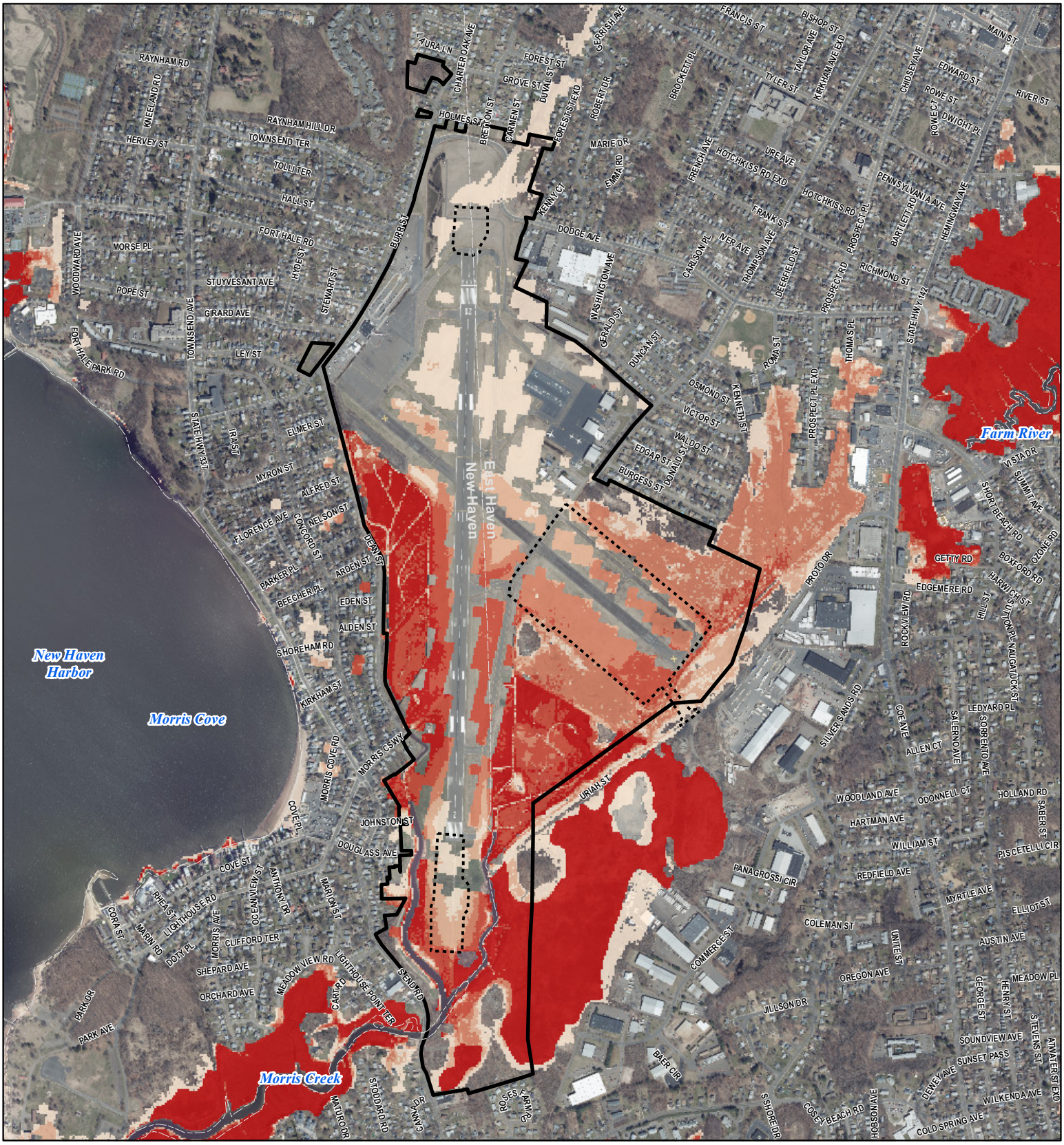


# Projected 2085 Sea Level Rise Effects on Marshes

Tweed Airport
New Haven & East Haven, CT

***Legend***

- Approximate Project Site
- Approximate Airport Property
- Municipal Boundary

**2085 Likelihood of Coastal Marsh**

- 1-20%
- 20-40%
- 40-60%
- 60-80%
- 80-100%

*Map Notes:*
*Sea Level Affecting Marshes Model (SLAMM) data derived from www.longislandsoundstudy.net/slamm*
*Base Map: CTECO 2019 Aerial Imagery*
*Map Date: March, 2023*

SCALE

1 inch = 1,250 feet

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**MATTHEW DAVISON**
**Professional Wetland Scientist**
**Professional Soil Scientist**
**Certified Professional in E&S Control**
**Connecticut Certified Forester**

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**10 Maple Street**
**Chester, CT 06412**
**860-836-6576**
**matt@davisonenvironmental.com**

## General Background

Mr. Davison has been providing environmental consulting services in Connecticut since 1998. He is a Professional Wetland Scientist (PWS), Professional Soil Scientist (PSS), Certified Professional in Erosion and Sediment Control (CPESC), and Connecticut Certified Forester. His experience includes local, state, and federal permitting, wetland delineation, soil mapping and classification, wetland evaluation, wetland impact assessments, habitat surveys, erosion and sedimentation control design, review and monitoring.

Mr. Davison has managed environmental efforts and mapping for a variety of Eversource projects over the past ten years, including new transmission lines, transmission line rebuilds, reconductoring, optical ground wire installation, maintenance, substation expansions, gas pipelines, and distribution lines. He has served as Eversource's Environmental Compliance Monitor on several projects, including providing contractor training, development and maintenance of project regulatory compliance matrices, and stormwater compliance monitoring.

Matthew is the co-owner of Davison Environmental LLC along with Eric Davison. Davison Environmental, LLC provides consulting services in the areas of biological, wetland, and soil sciences. In addition to the identification, description, and classification of natural resources, the firm also provides functional evaluation of wetlands and other biological systems, guidelines for mitigation of potential adverse impacts, and permit support through expert testimony and public representation. Services provided revolve around the impact of human activities on terrestrial, wetland, aquatic, and marine resources.

## Representative Projects

### Eversource, Various Transmission Line Rebuild Projects (2016 – Present)

Matthew managed environmental efforts for the 1508 Line (Guilford to Madison), 1342 Line (Madison to Old Saybrook), 1555 Line (New Milford), and 1655 Line (Wallingford to Branford) Rebuild Projects. Responsibilities included natural resource identification and delineation, mapping, rare species surveys and authorizations, environmental permitting, contractor training, and regulatory compliance matrix development and maintenance. Matthew also assisted with the development of SWPCPs as required for the CTDEEP Stormwater GP (NPDES). For projects that have been constructed or are currently under construction, Matthew was/is responsible for the oversight of erosion and sedimentation controls, coordination with site contractors regarding environmental compliance, stormwater monitoring, and Stormwater GP/NPDES compliance.

### Eversource, Frost Bridge to Campville 115-kV Line Project (2016 – 2018)

Managed environmental surveys, permits, provided expert testimony at the CSC and mapping for a new 10.4-mile 115-kV transmission line in Watertown, Thomaston, Litchfield, and Harwinton, Connecticut. As part of his project responsibilities Matthew drafted portions of the CSC Application, SWPCP, D&M Plan, and assisted with the layout of roads and work pads, and erosion and sedimentation controls. Matthew managed permit compliance on behalf of Eversource, including compliance with the CTDEEP Stormwater GP, and D&M Plan. His responsibilities included oversight of installation and maintenance of erosion and sedimentation controls, coordination with site contractors, rain event monitoring, attending weekly site meetings, and submission of weekly monitoring reports.

**Eversource, Branford to Guilford Distribution Line Removal Project (2016 – Present)**
Managed environmental permitting for the removal of a distribution line between Branford and Guilford, Connecticut. Project responsibilities included managing natural resource surveys including rare plants, rare plant protection measures, required agency consultations, mapping, and preparation of a CTDEEP LWRD (formerly OLISP) Certificate of Permission (COP) which was approved in fall 2018.

**Eversource, Norwalk Bridge Transmission Line Relocation Project (2017 – Present)**
Managing environmental tasks for the proposed relocation of a 115-kV transmission line, which requires an HDD crossing beneath the Norwalk River. Project responsibilities include managing natural resource surveys, preparing required agency consultations, attending pre-application meetings with CTDEEP and ACOE, and preparation of applicable CTDEEP LWRD and ACOE Section 10 permits.

**Eversource, Various Gas Pipeline Projects (2017 – Present)**
Managed or is currently managing environmental efforts for portions of the Wallingford to Durham Resiliency Project and Southeast Resiliency Project. Responsibilities include natural resource identification and delineation, mapping, rare species surveys and authorizations, environmental permitting, and attending meetings with local officials regarding natural resource concerns. The SE Resiliency Project includes a proposed gas pipeline HDD crossing beneath the Connecticut River between Middletown and East Hampton, Connecticut. Project responsibilities include preparing required agency consultations, attending pre-application meetings with CTDEEP and ACOE, and preparation of applicable CTDEEP LWRD and ACOE Section 10 permits.

**Eversource, Millstone Line Separation Project (2012 – 2014)**
Conducted full-time compliance monitoring for the separation of existing 345-kV double circuit transmission lines over 4.1 miles in Waterford, Connecticut. Responsibilities included oversight of installation and maintenance of E&S controls, coordination with site contractors, rain event monitoring, attending weekly site meetings, and submission of weekly monitoring reports.

**Eversource, NERC Alert Project (2012 – 2014)**
Managed environmental surveys, permits, and mapping for compliance with the North American Electric Reliability Corporation (NERC) rating recommendations.

**BNE Energy, Wind Energy Projects, Colebrook and Prospect, Connecticut (2010 – 2012)**
Managed environmental permitting efforts for siting of commercial wind farms at three locations in Connecticut. Conducted natural resource inventories including wetlands, existing flora and fauna, and habitat evaluations. Compiled technical documents and assisted in permitting with federal and state agencies. Provided expert testimony at the Connecticut Siting Council.

| | |
|---|---|
| **Education** | B.S. University of Massachusetts, Forestry, 1997<br>New England Regional Soil Science Certificate Program,<br>University of Massachusetts, 1998-2000 |
| **Registration** | Professional Soil Scientist, Society of Soil Scientists of Southern New England, since 2000. |
| **Certifications** | Professional Wetland Scientist #2302<br><br>Certified Professional in Erosion and Sediment Control #6828<br>Connecticut Certified Forester #193 |

**ERIC DAVISON**
**Wildlife Biologist**
**Professional Soil Scientist**
**Senior Wetland Scientist**

**Davison Environmental, LLC**
**10 Maple Street**
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**860-803-0938**
**eric@davisonenvironmental.com**

### General Background

Eric Davison is a wildlife biologist who holds professional certifications as a Wetland Scientist through the *Society of Wetland Scientists* (SWS) and Soil Scientist through the *Society of Soil Scientists of Southern New England* (SSSNE). Eric has been a practicing wildlife biologist in Connecticut for 20 years. Skills and experience include the ability to identify resident and migrant avian species by sight and sound, and the ability to locate and identify all of Connecticut's native amphibians and reptiles.

Eric has significant experience identifying and mapping vernal pools, including cryptic and range restricted vernal pool indicator species. Eric holds a Scientific Collectors Permit from the Connecticut Department of Energy and Environmental Protection authorizing the study (including handling and trapping) of state-listed wildlife. Eric also has extensive experience in local, state, and federal wetland permitting, and has worked on numerous Connecticut Siting Council dockets along with providing expert testimony at Council hearings over the past 8 years.

Eric Davison is the co-owner of Davison Environmental LLC, which provides consulting services in the areas of biological, wetland, and soil sciences. In addition to the identification, description, and classification of natural resources, the firm also provides functional evaluation of wetlands and other biological systems, guidelines for mitigation of potential adverse impacts, and permit support through expert testimony and public representation. Services provided revolve around the impact of human activities on terrestrial, wetland, aquatic, and marine resources.

## Representative Projects

### Eversource Transmission Line Reconductoring and Structure Replacement Project
### 667 Line, Salisbury and Canaan, CT

Conducted wetland and biological surveys along a ten-mile utility right-of-way. Work included the delineation and mapping of State and Federal jurisdictional wetlands and watercourses; identification and mapping of vernal pools via minnow trapping, dip-netting, call-surveys and larval sampling; and surveys for the state and federally endangered Bog Turtle (*Glyptemys muhlenbergii*).

### NDDB Compliance Surveys, Eversource 1505/1607 Lines Hazard Tree Removal
### Brooklyn and Canterbury, CT

Conducted surveys for two State-listed birds, the American Kestrel (*Falco sparverius*) and Brown Thrasher (*Toxostoma rufum*). Work included the field identification of all breeding birds within the work area by sight and sound and led to the confirmation of a nesting pair of Kestrel. Protection strategies were developed to prevent disturbance to these birds during vegetation management work in compliance with NDDB protocols.

### NDDB Compliance Surveys, Eversource 1732 Line Vegetation Management
### Canton and New Hartford, CT

Conducted surveys for State-listed plants and host plants for the State-listed Frosted Elfin (*Callophrys irus*) including Wild Indigo (*Baptisia tinctoria*), Wild Blue Lupine (*Lupinus perennis*), Slender Mountain Ricegrass (*Piptatherum pungens*), Low Frostweed (*Crocanthemum propinquum*) and Needlegrass (*Aristida longespica* var. *geniculata*) as required under the CT DEEP's Natural Diversity Database Program review. Protection strategies were developed to mitigate impacts to these plants during vegetation management work in compliance with NDDB protocols.

**NDDB Compliance Surveys, Eversource 348-364 Structure Replacement Project**
**East Haddam, Lyme and East Lyme, CT**

Conducted vernal pools surveys as well as surveys for State-listed plants and host plants for the State-listed Frosted Elfin (*Callophrys irus*). Plants identified and mapped including Dillenius' Ticktrefoil (*Desmodium glabellum*), Wild Indigo (*Baptisia tinctoria*) and Needlegrass (*Aristida longespica var. geniculata*). Vernal pools surveys identified the presence of two State-listed reptiles, the Spotted Turtle (*Clemmys guttata*) and Common Ribbonsnake (*Thamnophis s. saurita*). Protection strategies were developed to mitigate impacts to vernal pools, plants and animals during the proposed maintenance work in order to comply with NDDB protocols.

**CPV Towantic Energy Center, Oxford, CT**

Lead biologist responsible for herpetological and avian surveys for a proposed 785 MW dual-fueled combined cycle electric generating facility. Work included expert testimony at numerous Connecticut Siting Council hearings.

## Employment History

Davison Environmental, 10 Maple Street, Chester, CT
- Owner, 2015 to present

Environmental Planning Services, 89 Belknap Road, West Hartford, CT
- Biologist/Senior Wetland Scientist, 2000-2015

Cary Institute of Ecosystems Studies, 2801 Sharon Turnpike, Millbrook, NY
- Biodiversity Specialist, 2009-2011 (part time, grant funded term position)

. . . . . .

**Education**

B.S. University of Massachusetts, Wildlife Conservation and Management, 1998

New England Regional Soil Science Certificate Program, 2000

**Affiliations**

Member, Chester Inland Wetlands and Watercourses Commission, since 2013.

**Registrations/ Certifications**

Professional Soil Scientist, Society of Soil Scientists of Southern New England, since 2000.

Certified Professional Wetland Scientist, Society of Wetland Scientists, since 2007

# QUALIFICATION STATEMENT

Davison Environmental, LLC provides consulting services in the areas of biological, wetland, and soil sciences, environmental impact assessment and mitigation planning to public agencies and private clients; including design professionals, attorneys, site developers, municipalities, and public interest groups.

In addition to identification, description, and classification of natural resources, the firm also provides functional evaluation of wetlands and other biological systems, guidelines for mitigation of potential adverse impacts, and permit support through expert testimony and public representation. Services provided revolve around the impact of human activities on terrestrial, wetland, aquatic, and marine resources. The firm specializes in biological and wetland surveys, impact assessment, and mitigation planning.

## SERVICES

- Wetland delineation and assessment (CT and federal)
- Environmental impact assessments
- Site plan review
- Local, state and federal permitting
- Wetland mitigation
- Sediment and erosion control review
- Coastal site plan (CAM) applications
- Biodiversity studies (herpetiles, birds, vernal pools)
- Threatened and endangered species surveys
- Natural resource mapping and interpretation
- GIS mapping

For more information please visit our website at www.davisonenvironmental.com or contact Eric Davison by phone at 860-803-0938 or by email at eric@davisonenvironmental.com.

COMMENTS OF THE TOWN OF EAST HAVEN ON THE TWEED NEW HAVEN AIRPORT NEPA DRAFT ENVIRONMENTAL ASSESSMENT RUNWAY 02-20 EXTENSION AND TERMINAL EXPANSION PROGRAM

Attachment C

Trinkaus Engineering. LLC Report on Environmental Assessment dated April 18, 2023

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April 18, 2023

Ms. Jean Perry Phillips, Esq.
Pullman & Comley, LLC
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Hartford, Connecticut 06103-3702

RE: Impacts on Stormwater and
Surrounding Environment
Tweed New Haven Airport
Runway 02-20 Extension and
Terminal Expansion Program
Draft Environmental Assessment

Dear Attorney Phillips,

At the request of the Town of East Haven, I have reviewed the following documents published by Tweed New Haven Airport Authority for a proposed runway and terminal expansion project. All the following documents were provided by McFarland Johnson.

a. NEPA Draft Environmental Assessment (EA), Runway 02-20 Extension and Terminal Expansion Program, March 2023
b. Appendix A: Runway 02-20 Length Eligibility Analysis prepared by McFarland Johnson
c. Appendix B: FAA Section 163 Determination prepared by the FAA.
d. Appendix C: Agencies Correspondence prepared by select state and federal agencies.
e. Appendix D: Public Involvement/Public Comments prepared by McFarland Johnson/compiled by McFarland Johnson
f. Appendix E: PGAL Tweed Airport New Haven East Terminal Expansion prepared by PGAL.
g. Appendix F: Wetland Delineation Report prepared by FHI Studio
h. Appendix G: Environmental Background Information Authorship Unknown
i. Appendix H: SHPO Project Review Package prepared by CT DECD
j. Appendix I: Noise and Air Quality Technical Report prepared by HMMH.
k. Appendix J: Environmental Justice Screening Report data available from federal agencies
l. Appendix K: Traffic Study for New Terminal, Traffic Study for Existing Terminal .prepared by FHI Studio

The focus of my review is on how the proposed improvements will impact stormwater management and the environment surrounding Tweed New Haven Airport.

**Summary of Proposed Improvements:**

A. The construction of a new terminal building, a parking garage, surface parking and gate area to be in the East Haven portion of the airport property.
B. A new access driveway with a bridge to provide access from Proto Drive in East Haven to the new facilities.
C. A lengthening of Runway 02-20 to 6,535 feet at the current southern terminus of this runway.

I have the following comments for your consideration.

1. Table 3-10 in the EA states that the impervious footprint area associated with the terminal building, the terminal apron, the taxiway, vehicle parking and the bridge totals 1,289,717 square feet or 30.99 acres. A pervious area of 23,760 square feet or 0.55 acres is proposed for a stormwater management area. Section 3.3.1.2 states there is a proposed 699 foot extension with a 235 foot displaced threshold for the southern end of the runway and a 336 foot extension with a 336 foot displaced runway end threshold proposed for the northern end of the runway. A 355 foot by 200 foot EMAS is also proposed. The runway extensions and EMAS will contribute significant quantities of impervious surfaces which are not quantified at any point in the EA or appendices. In Section 5.14.1.2 the EA states the proposed expansion will increase the impervious area by 941,922 square feet (21.62 acres). These numbers are inconsistent, and it is unclear what the true increase in impervious areas will be. However, even if we use the lower 941,922 square feet calculation, it results in 3.2 times the existing impervious area on the site. This increase of impervious areas will result in significant increases in stormwater runoff volume for all rainfall events. Obviously, the problem will be further exacerbated if the higher 1,289,717 square feet calculation (or something in between the two figures) is accurate.

   Section 5.14.1.2 states in part " *The proposed terminal site would include stormwater detention systems to allow for a controlled release of stormwater from the site, on-site improvement of water quality, and elements of infiltration where possible. The site design would allow for some infiltration and filtering of stormwater to recharge groundwater and minimize the amount of stormwater that enters surface waters and adjacent wetlands; however, infiltration opportunities are somewhat limited due to the high groundwater levels at the proposed terminal location. Detention and treatment would be provided for stormwater that cannot be infiltrated.*" The above quote from the EA clearly states that infiltration of post-development runoff is unlikely to occur. If you are unable to infiltrate runoff, then the runoff will be discharged as surface flow which will worsen flooding in the surrounding areas. Even if some type of Low Impact Development (LID) practice such as permeable pavement was to be considered for

surface parking areas, it would not result in reductions of runoff volume due to a lack of natural infiltrative capacity in the soils around the expansion.

2. The increase of impervious area will also result in significant increases of non-point source pollutants, such as Total Suspended Solids (TSS), Total Nitrogen (TN), Total Phosphorous (TP), Metals, Petroleum Hydrocarbons, and chloride based deicing agents. The primary source of TSS and deicing agents is maintenance of roadways and exterior parking areas during the winter to provide safe surfaces for vehicles and pedestrians. This of course is different than the deicing agents associated with aircraft maintenance which are expected to be managed via a collection system installed in the proposed new apron.

3. The primary source of metals and hydrocarbons in stormwater runoff is motor vehicles. Construction of approximately 4,000 additional parking spaces consisting of a combination of surface parking and a parking garage is proposed. The existing 1,128 parking spaces will continue to be utilized with a shuttle service proposed to provide transit between the existing spaces on the west side and the new terminal on the east side. In short there is a planned significant increase of motor vehicles using the site that will also generate higher pollutant loads impacting coastal and tidal wetlands.

4. Based upon professional literature, approximately 40% of nitrogen and phosphorous loads are the result of atmospheric deposition onto impervious surfaces during all-weather events. When there are large impervious areas, this material will accumulate on these surfaces and then be washed off with a rainfall event. Nitrogen loads are a significant concern as runoff will be directed toward tidal wetlands where nitrogen in the runoff can kill tidal grasses in the wetland areas, thus exposing tidal wetland soils to wave action which results in erosion and loss of tidal wetland areas. Links to Professional Journal Articles are provided at the end of this report which discuss atmospheric deposition of nutrients.

5. The EA vaguely discusses generic possible approaches as to how stormwater management will be handled for the terminal expansion, but no detailed site specific stormwater management information is provided in the EA. The EA does not address the increase of runoff volumes and pollutant loads which will result from this expansion. <u>This is a major deficiency of the EA</u>. It is standard civil engineering practice to provide, at a minimum, conceptual plans for how stormwater will be handled on a site. No such plan has been provided by the EA.

6. As stated above, the EA in Section 5.14.1.2 discusses the possibility of using infiltration to handle some or all the expected runoff, however, it is further acknowledged in the EA that the soils may not be suitable for infiltration. No site evaluation has been conducted to determine the underlying soil conditions in the proposed expansion. <u>This is a major deficiency in the EA.</u>

7. The EA includes a proposal to extend Runway 02-20 by approximately an additional 639 feet at Runway 02 and 336 feet at Runway 20 and install a 355 foot by 200 foot EMAS system. This will result in a further increase in impervious areas that need to be

addressed. There is no discussion as to how stormwater associated with the runway expansion, including EMAS, will be managed in the EA. This is a major deficiency in the EA.

8. As this site is located within 500 feet of a tidal resource, the CT DEEP 2004 Storm Water Quality Manual requires that the Runoff Capture Volume (RCV) be calculated and observed. Per the DEEP Manual, the objective of the RCV is to capture stormwater runoff to prevent the discharge of pollutants, including "unpolluted" fresh water, to sensitive coastal receiving waters and wetlands. The RCV is defined as the runoff generated by the first inch of rainfall which must be retained on site. For the proposed expansion as described in the EA, the RCV would be a minimum of 1.71 acre-feet of runoff which is 74,556 cubic feet. There is no discussion in the EA of how compliance with the RCV requirement will be accomplished.

9. The EA states that approval of any stormwater management system will be done through the CT DEEP Construction Stormwater General Permit. This is incorrect. The CT DEEP General Permit is a certification process only for a stormwater management/erosion control plan which has been previously reviewed and approved by local land use agencies. In this case, the agency with review and approval of the stormwater management system is the Town of East Haven Inland Wetlands and Watercourses Commission and Flood & Erosion Commission.

10. The EA in Section 5.14.3 states that the proposed alternative for Runway 02-20 will require that the existing runway will need to be raised vertically by 0-4 feet and that the runway extension and safety area will be raised by 3-6 feet to achieve FAA Runway design standards and accommodate the EMAS above the State-projected sea level rise for year 2050. In this section it is also noted that paved sections in the terminal area including roadways, parking, aircraft apron, taxiways and lanes would be constructed at or close to existing grade. The terminal however would be constructed with a finished floor elevation at or above 13 feet above MSL elevation, or 8 feet above existing grade. The terminal would be constructed on columns with a crawlspace underneath the terminal to allow passage of floodwaters. The proposed parking garage would include construction of a ground level pad and other items to achieve the 13 feet base flood elevation. Given the close proximity and interdependence of the various components of this project, proposing that the runway expansion, the new terminal and parking facilities, the access road and the bridge will be at varying stated elevations (some of these will be substantially elevated above grade, while others will be maintained at grade), does not appear to produce a cohesive final grading of the site.

11. Tweed New Haven Airport is in an AE Flood Zone as defined by FEMA. According to the submitted EA, the 100-year flood elevation is 12.0 MSL (Mean Sea Level). According to the EA, the elevation of the first floor of the terminal building and the base elevation of the parking garage will be at 13.0 MSL. This is only 1' above the FEMA 100-year flood elevation of 12.0 MSL. The FEMA document entitled "Floodplain Management Requirements – A Study Guide and Desk Reference for Local Officials – FEMA 480", dated February 2005 states on page 5-31 that an extra margin of protection

requires the lowest floor to be one or more feet above the Base Flood Elevation (BFE). The EA does not discuss if 1' above BFE is adequate to protect the new terminal building and vehicles in the parking garage from flooding.

12. No geotechnical data has been provided in the EA regarding the proposed runway improvements, new terminal, parking garage and surface parking area which would provide information on the subsurface soil conditions around the expansion and allow an evaluation of the type of construction proposed.

13. No grading plan has been provided in the EA which would allow for the evaluation of the stated amount of fill to be brought in. This is a critical component given the proximity of terminal and runway improvements and the disparity in planned elevations of various critical components. On its face the information given suggests that the estimated amounts of fill required for construction site wide are grossly underestimated. If additional fill is required, then the extent of fill beyond the area of actual construction will also increase. This would result in greater adverse physical impacts to the delineated inland wetlands.

14. According to topographic maps of Tweed New Haven Airport provided by the town, the average elevation around the proposed terminal is 6.0 MSL; thus to raise the terminal building and parking garage above the base flood elevation will require raising the grade by a minimum of 7' for structures which will be used by staff and the public. No detailed information has been provided as to how this will be accomplished.

15. As stated in the EA, the proposed expansion will encompass approximately 31 acres. While it is stated that the runway expansion, terminal building, and parking garage will be located above the 100-year flood elevation, why isn't the large surface parking area being raised above the base flood elevation? It is stated that 61,300 cubic yards of material will be placed for the runoff expansion, parking garage and terminal building to elevate above base flood elevation. Over an area of 31 acres, 61,300 cubic yards will only raise the elevation by 1.2' which is insufficient to raise the features above the base flood elevation. Looking at 61,300 cubic yards of fill another way would mean that only approximately 4.7 acres of the 31 acres could be raised 7' to be above the base flood elevation. Frankly, it does not appear that the stated volume of 61,300 cubic yards will be adequate for this project and the estimate is not supported in the EA.

16. If the 61,300 cubic yards of material is correct, this will require over 4,000 dump trucks to bring the structural fill material. There is no discussion in the EA about the importation of this fill volume and the impact on the East Haven road system and neighborhoods surrounding the site. These impacts will be exacerbated if more fill is needed.

17. The filling required for the new terminal and runway expansion will result in a significant loss of flood storage below the limit of the 100-year base flood elevation. It is stated that there is an available area along the existing runway where compensating flood storage

can be provided for the proposed filling within the 100-year flood plain, but the EA does not contain adequate information to support this assertion.

18. There is minimal discussion in the EA about the proposed access road from Proto Drive, the required bridge, and impacts to freshwater and tidal wetlands. This is a serious deficiency in the EA as these potential impacts must be discussed in detail so a full evaluation can be made by the regulatory agencies. The construction of the access road will require the placement of fill within the 100-year flood plain. No information is provided on how the construction of the proposed road will be accomplished.

19. The proposal will require the filling of approximately 9.3 acres of freshwater wetlands. This will require review and approval by the East Haven Inland Wetlands and Watercourses Commission. The filling of such a large area is deemed a "significant activity" under the Inland Wetland Regulations and thus "feasible and prudent" alternatives to the proposed filling must be provided. No "feasible and prudent" alternatives have been provided in the EA. As no preliminary grading plan has been provided for the expansion in the EA, the extent of filling of freshwater and potentially tidal wetlands could be greater than the 9.3 acres cited in the EA. If fill is brought to the site, there must be a slope from the top of the fill back down to original grade which does not appear to have been considered in the EA.

20. AE flood zones can also experience wave heights of three (3) feet or less. This is not considered in the EA, and given the stated intent to construct much of the site at ground level -- including apparently the surface parking area -- this is a major problem and deficiency.

21. The Town of East Haven has presented testimony from various town officials including the Police and Fire Departments regarding frequent road and property flooding outside the limits of Tweed New Haven Airport during all levels of rainfall events and high tides that coincide with full moons and high winds. The flooding events documented include those on the proposed new access route, a state roadway, to the airport. There is no discussion in the EA as to how the proposed raising of the grade for the terminal and runway expansion and the increase of impervious area will affect the current flooding situation of roads and private properties outside the limit of the airport. It is clear however that the project as proposed will increase the frequency and duration of flooding in this area. Photographs, videos, and other documentation of this problem are available here. (https://easthavenct-my.sharepoint.com/personal/thedley_easthaven-ct_gov/_layouts/15/onedrive.aspx?id=%2Fpersonal%2Fthedley%5Feasthaven%2Dct%5Fgov%2FDocuments%2FFlooding%20Photos&ga=1 )

22. According to Section 33.14 Flood Plain Districts of the East Haven Zoning Regulations, any Site Plan or Special Exception application shall contain assurances that the flood-carrying capacity is maintained with any altered or relocated portion of any watercourse. What this means is if filling is to occur within a designated flood plain which would reduce the storage capacity of the flood plain, then compensating flood storage must be

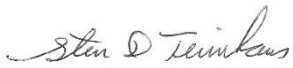
provided. There is no discussion in the EA of how or where compensating flood storage will be provided though the requirement is noted in Section 5.14.3.

23. It is understood that the existing storage area for aviation fuel will increase as part of the proposal. A containment system must be provided around all types of above ground liquid fuel storage tanks. No such system has been discussed in the EA.

Conclusion:

It is my professional opinion that there are significant deficiencies in the EA as stated above including the lack of information regarding site grading and stormwater management that prevent an accurate assessment of the impacts to the site and the adjacent areas in East Haven that would be caused by the proposed project. However, considering the information provided, such as it is, and taking it at face value, there are clearly grave consequences to the physical environment in the project area and immediately and further adjacent, including to inland and coastal wetlands, watercourses, and water resources.Please feel free to contact my office with any questions about the information provided in this report.

Respectfully Submitted,
Trinkaus Engineering, LLC



Steven D. Trinkaus, PE

Link: https://d1wqtxts1xzle7.cloudfront.net/73492852/j.scitotenv.2008.04.04420211023-13380-1kzb7sj-libre.pdf?1635028946=&response-content-disposition=inline%3B+filename%3DAtmospheric_deposition_of_carbon_and_nut.pdf&Expires=1681907364&Signature=RUL0KbIamrLpL9WwGIg1kV-7I1oEpNGgoiKlTsofWBVzp4DPZJtjmLYKBpInE7w3nE1Kyy6ZYG5WP02CtStyZqb~e~06mc-bSGEIb~99AiMOnm4cG6b3pBFXGiRNj5JbU8w5g5uV5ok~y7BMEpAZC6vGBwAzURvMcj63XXjH27m-dsETU3FvQNWv~4zptwKmJTItN2P4LFQjZxwPDEH~VFMazjEX96RSFd56fgUPx293ZjgmZgBs4SjUKvctcInT6z0nb342iWhEB8pvhP~kcmq8Obk5QX2~9pAFBCuX1GaJA~nYf5yARj5P0zbKEzJc~w5kzesG94g1TsksqjJ2WQ__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA

Link: https://www.mdpi.com/2306-5338/5/3/45

Link: https://pubs.usgs.gov/wri/wri034241/pdf/wrir034241.pdf

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|---|---|
| **Qualifications** | B.S. / Forest Management/1980<br>University of New Hampshire |
| **Licenses/Certifications** | Licensed Professional Engineer- Connecticut (1988) |
| **Professional Societies** | American Society of Civil Engineers<br>Connecticut Society of Professional Engineers<br>International Erosion Control Association |
| **Professional Awards** | Steve was named an Industry Icon by Storm Water Solutions in July 2015 http://editiondigital.net/publication/?i=263831&p=16 for his work in the Low Impact Development field. |

**International Experience**

**South Korea – July 2017, June 2016, April 2015, October 2014, April 2014, October 2013 and June 2013**

- Steve was invited by Dr. Leeyoung Kim of Kongju University to make a presentation at the Seoul International Symposium for water cycle held on July 27, 2017 at Seoul City Hall. Steve's presentation was entitled "Sustainable Urban Water Cycle Management, Low Impact Development Strategies for Urban Retrofits". Steve also made a presentation to Master and PhD Engineering students at Kongju University on designing LID treatment systems. He also visited the research office of Land & Housing Institute in Daejeon to inspect recent LID retrofits consisting of Bioretention systems, Bioswales and Permeable Paver systems.
- Steve was invited by Dr. Shin to visit the Korean GI/LID research center in July of 2017. The purpose of the visit was to inspect the LID research systems which had been in place for a year to observe how well they were functioning and also to observe the current research on infiltration of LID systems and evaportranspiration of green roof systems.
- Steve was an invited attendee to the official opening of the Korean GI & LID Research Center recently constructed at the Yangsam Campus of Pusan National University. Steve was a consultant on the design of the research center for Dr. Hyunsuk Shin of Pusan National University.
- Steve was an invited presenter at the World Water Forum by Dr. Hyunsuk Shin of Pusan National University. He presented case studies of GI/LID applications in the United States.
- Steve was invited by Dr. Yong Deok Cho of Kwater to participate in the Water Business Forum at the World Water Forum. Steve presented an overview of his business and expertise in Low Impact Development.

- Steve was invited by Dr. Hong-Ro Lee of Kunsan National University and made a presentation entitled "Understanding Low Impact Development in the Urban-Rural Interface" for the **Ariul Brainstorming Working Group** on April 16, 2015 in Gunsan, South Korea. He also toured portions of the proposed land reclamation area to assess how Low Impact Development strategies could be incorporated to address water quality issues from the proposed agricultural, residential, commercial and industrial land uses for this area.
- Steve was a Contributing Author as well as an Advisory Reviewer for a report prepared by Land & Housing Institute (LHI) entitled " Pyeongtaek Godeok New City Low Impact Development techniques (LID), A study on the introduction of measures (I) " dated: January 2015. This report by LHI also cited the Town of Tolland LID Design Manual as a foreign LID Manual to be used as a reference document.
- Steve was an invited presenter at the International Water Forum 2014 held in conjunction with the Nakong River International Water Week in Gyeongju, South Korea sponsored by DaeGyeong Water Foundation & the International Hydrologic Environmental Society. His presentation focused on urban stormwater and the benefits of LID in these areas.
- Steve was an invited presenter at the IWA Water Reuse & Energy Conference 2014 held in Daegu, South Korea. His presentation was on the regulatory barriers to implementation of LID and how to overcome these barriers. He also participated in a panel discussion with other presenters.
- He also made a presentation at The 1st GI & LID Technical Education Workshop held at Pusan National University on October 22nd on an overview of LID and the application of LID concepts. He was invited by Dr. Kyung Hak Hyun of Land & Housing Institute (LHI) to make two presentations of LID case studies at Sangyung University and at a seminar hosted at LHI along with Kwater.
- Steve met with Jong-Pyo Park, Director and Kyoung-Do Lee, CEO of HECOREA, a water resource consulting firm to discuss LID in dense urban areas. Steve signed a MOU with HECOREA to provide consulting services on LID monitoring approaches and maintenance protocols for the Go-Deok International Planning District near Pyeongtaek, South Korea.
- Steve was invited by Dr. Kyung Hak Hyun of Land & Housing Institute to present at the 2nd Low Impact Development Forum in Daejeon, South Korea on October 31, 2013. He also inspected the site of Asan-tangjeong which is an expansion of residential housing for the city of Asan. This expansion will incorporate LID stormwater strategies.
- Steve was invited to make a presentation of the implementation of LID on commercial sites by Dr. Reeho Kim of the Korea Institute of Construction Technology in Seoul.
- Steve met with Dr. Sangjin Lee of Korean Water and Dr. Woo Young Heo, CEO of LID Solution Co, Ltd to review the initial concept plans for the Eco-Delta City project. Eco-Delta City is a new city located near the Gimhae International Airport of 13 square kilometers and will incorporate LID concepts throughout the new city.
- Steve signed a MOU with Dr. Shin of Pusan National University to provide consulting services for the Smart GI/LID Research Facility at Pusan National University. Steve was asked by Dr. Shin to review the design plans for the GI/LID research facility to be constructed at Pusan National University with a focus on the exterior LID research facilities. He provided a written comprehensive review for consideration by PNU.
- Steve was invited by Dr. Hyunsuk Shin of Pusan National University in South Korea to present a workshop on Low Impact Development on June 24, 2013. The presentation was made to research professors, graduate engineering students and practicing engineers at K-water headquarters in Daejeon, South Korea. He also met with representatives of other agencies tasked with the development of a new city, called Eco-Delta City which will implement LID practices from the ground up and comprises approximately 3,500 acres.

**Nanjing, China, September 2018**
Steve was invited by the organizing committee for the third China Sponge City International Exchange Conference to make three presentations on LID. The presentations were entitled: "LID: The Good, the Bad and the Ugly", "Permeable Pavement Case Studies" and "The regulatory framework to adopt LID". The conference was held September 27th and 28th in Nanjing, China.

**Beijing/Zhenjiang, China – August 2017**
Steve was invited to make a presentation entitled "Urban LID in China and South Korea" at the 2017 Second China Sponge City International Exchange Conference held in Beijing on August 16-1, 2017.
He also made a presentation for Dr. Nian She, Director of Smart Sponge City Planning and Construction Research Institute in Zhenjiang, China on modeling approaches for LID treatment systems as well as inspecting some recent LID retrofits currently under construction in Zhenjiang.
Steve also made a presentation at Reschand entitled "LID Case Studies from US" at the request of Yuming Su of Reschand.

**Nanjing, China – September 2016**
Steve was invited to present at the 2016 First China Sponge City International Exchange Conference held in Nanjing, China. The presentation focused on several case studies of LID systems in the US.

**Zhenjiang, China – June 2015**
Was retained by Dr. Nian She to design Urban LID retrofits for a 2.5 hectare (6.5 acres) dense residential area in the city of Zhenjiang. The LID retrofits had to fully treat runoff from the existing impervious areas (building roofs, driveways and parking areas) for 65 mm (2.6") of rainfall in 24 hours. The LID systems also had to attenuate the peak rate of runoff for a rainfall event of 150 mm (5.9") rainfall event. A combination of Bioretention systems, and permeable pavers with a filter course and reservoir layer were used to meet these stormwater requirements.

**Zhenjiang, China – May 2015**
Steve was invited by Professor Nian She of Shenzhen University to make a presentation entitled "Using LID to Attenuate Large Rainfall Events and Reduce Flood Potential" at the 2015 First Sino US Sponge City LID Technology Practice Conference held on May 4-5, 2015 in Zhenjiang, China organized by Zhenjiang Water Supply and Drainage Management Office. (http://www.c-water.com.cn/2015lid/en/index_e.html). In addition to the presentation, field inspections were made of several new LID installations in the city consisting of Bioswales, permeable pavement systems and rainwater harvesting.

**Guangzhou, China – December 2012**
- Steve was an invited attendee at the 15th Annual Guangzhou Convention of Chinese Scholars in Science and Technology in Guangzhou, China on December 17 – 21, 2012 to present a project narrative on how Low Impact Development and sustainable development can be applied to address water quality issues in urban and rural areas of China to implement sustainability concepts and conservation of resources. He attended with Dr. Jim Su, PE of Golder Associates of Mt. Laurel, New Jersey. While at the convention he met with representatives from Sichuan University, Chang'an University, Guangdong University of Technology, Shenzhen University and the South China Institute of Environmental Sciences, MEP to discuss LID being incorporated into their engineering programs.
- Steve also met Dr. Hongbin Cheng of New China Times Technology which is located in Stellenbosch, South Africa. Steve has signed a three year partnership agreement with New China Times Technology to introduce LID concepts to the west cape area of South Africa.

**Taiwan – December 2011**

- Steve was invited by Hung Kwai Chen, Director of the Water Resources Planning Institute, Water Resource Agency, Ministry of Economic Affairs of Taiwan and Dr. Yong Lai of the US Bureau of Reclamation to present a 12-hour presentation on Low Impact Development on December 8th and 9th, 2011 in Taichung, Taiwan. The presentation focused on applying LID strategies in both urban and rural environments to address runoff volumes and water quality issues.
- Steve is an invited consultant to a project team headed up by Xiaoyan Zhou, PhD of the Institute for Taiwan Water Environment Research (TIIWE) along with The National Taiwan Ocean University, Hohai Engineering Professor Liao Chaoxuan, Ting Engineering Consultants Co., Ltd and University of Colorado professor Guo Chunyuan to develop a LID demonstration project in New Taipei City along with LID policy strategies to further the use of LID in New Taipei City, Taiwan.

## Low Impact Development

- Review of existing municipal land use regulations to identify barriers to the implementation of Low Impact Development
- Preparation of regulatory language changes to facilitate the adoption of Low Impact Development
- Preparation of design manuals for the implementation of Low Impact Development strategies and processes with an approach that simplifies the design process
- Application of environmental site design strategies to focus development concepts on land most suitable for development while enhancing the protection of environmentally sensitive areas
- Design of Low Impact Development treatment systems, such as Bioretention areas, wet/dry swales, vegetated level spreaders, vegetated filter strips, subsurface gravel wetlands, constructed wetlands and/or pond systems, infiltration basins & trenches
- Hydrologic analyses of current and post-development conditions to assess impacts of proposed development on storm water flows
- Design of storm water control systems including detention and water quality basins and appropriate planting plans
- Perform hydrologic modeling of stormwater management systems to demonstrate compliance with regulatory benchmarks
- Prepare Pollutant loadings analyses to evaluate the effectiveness of stormwater treatment designs in reducing pollutant loads

## Wastewater Management:

- Soil testing to determine suitability of land to support on-site sewage disposal systems for residential and commercial projects and assistance with identifying optimal location for both small and large scale systems.

- Perform necessary calculations to model and design large scale subsurface sewage disposal systems under CT DEEP criteria and State Department of Public Health

- Design of on-site sewage disposal systems in accordance with state and local health codes

- Perform construction oversight of both small and large scale subsurface sewage disposal systems and provide certifications of compliance.

## Site Engineering:

- Development feasibility studies

- Layout concepts to maximize development, while preserving environmentally sensitive areas

- Design of horizontal and vertical road geometry

- Preparation of grading, drainage and erosion and sedimentation control plans

- Use AutoCAD Land Development, Civil3D, HydroCAD and Pondpack software packages

- Layout and design of sanitary sewers

- Bid estimates

- Construction oversight

- Third party technical reviews

- Expert testimony

## Professional Committees

- Chairman and primary author of EWRI/ASCE LID Model Ordinance Task Committee (goal is to create a National LID Guidance document to further the adoption of LID)
- Chairman of EWRI/ASCE LID Task Committee on Filter Strips and Bioswales (goal is to review & evaluate literature and design specifications for filter strips and Bioswales and create uniform design standards for different geographical regions)
- Member of EWRI/ASCE LID National Guidelines Task Committee

## Published Articles

- **"Easier Said Than Done – Overcoming common errors when installing bioretention systems"** – October 2018 edition of Storm Water Solutions by Scranton Gillette Communications.
- **"Large-scale LID Design for urban expansion in South Korea**" with co-author, Dr. Kyung Hak Hyun of South Korean Land and Housing Institute – Volume 3/Issue 4, August/September 2015 – Worldwater Stormwater Management by the Water Environmental Federation.
- "**Research team leads LID deployment in South Korea**" – Volume 2/Issue 1, Spring 2014 – Worldwater Stormwater Management by the Water Environmental Federation.

- "**Low Impact Development, Sustainable Stormwater Management**" – English article converted to Chinese and published in the Chinese Edition of Global Water Magazine, July 2013.
- "**A Case Study: Southbury Medical Facility and Low Impact Development**" - January/February 2014 issue of Land and Water.
- "**A True Pioneer of Low Impact Development – Member Spotlight**" – January/February 2014 Issue of Erosion Control – Official Journal of the International Erosion Control Association.
- "**Low Impact Development: Changing the Paradigm**" published in the March 2012 edition of PE, The Magazine for Professional Engineers by the National Society of Professional Engineers. Article was also republished in the Spring 2012 addition of EWRI Currents (with permission of NSPE).
- "**Stormwater Retrofit of Existing Detention Basins**" published in the March/April 2012 Land and Water, The Magazine of Natural Resource Management and Restoration with co-author Sean Hayden of the Northwest Conservation District.
- "**Out in the Open; Creating a Stormwater Park in the Heart of a Community**" published in the April 2013 issue of WaterWorld by Pennwell Corporation.
- "**Creating a Stormwater Park in the City Meadow of Norfolk, Connecticut**" published in the July/August 2013 edition of Land and Water

## Volunteer Organizations

- President (elected 11/2013) and Connecticut Representative to the Board of Directors for the Northeast Chapter of IECA,
- Alternate member of Inland Wetlands Commission Town of Southbury (served three years),
- Northwest Conservation District Board of Directors (served 18 months)

## Software Development

Developed a proprietary software application called **A**ssessment of **P**ollutant **L**oads and **E**valuation of **T**reatment **S**ystems (**A.P.L.E.T.S.**). This application calculates the pollutant loads for current and future land use conditions for the seven most common pollutants in non-point source runoff (TSS, TP, TN, Zn, Cu, TPH, & DIN) for a total of twenty-two different types of land uses. The application then allows the evaluation of the effectiveness of thirty-four Conventional and Low Impact Development treatment systems in removing these pollutants. Up to four treatment systems can be used in a row as a treatment train to achieve water quality goals.

## Future Presentations

- Steve will be making two presentations entitled "Stormwater Management for Ground Mounted Solar Arrays in New England" and "LID in Connecticut – Are Designs Improving" at the **2023 World Environmental & Water Resources Congress** to be held in Henderson, Nevada on May 21 – 24, 2013. https://www.ewricongress.org/

- Steve will be presenting a 6.5-hour webinar over two days entitled "Low Impact Development" on June 6th and 7th, 2023 for design professsionals sponsored by Halfmoon Seminars.

- Steve will be making two presentations entitled "Designing LID Systems: What do you need to know and why?" and LID in Connecticut – Are Designing Improving?" at the 2023

International LID conference to be held in Oklahoma City, Oklahoma on August 6 – 9, 2023. https://www.lidconference.org/

**Invited Speaker Presentations:**

- Steve made a presentation entitled "Making Rainfall Disappear using Bioretention and Permeable Pavement" for a webinar entitled " Groundwater: Making the Invisible Visible" sponsored by the **Philippine-American Academy of Science and Engineering** (PAASE) on March 11, 2002 at 8 am (Philippine Time) https://paase.org/?fbclid=IwAR1KNhxJ69qpo1COxxCT4omfefLysKCfLDN9cw-Ygizs2DtLiJMfO-Nk8Pg

- Steve made a two-hour presentation via zoom on November 22, 2021, for the Green Infrastructure & Low Impact Development Specialized Graduate School at **Pusan National University** at the request of Dr. Hyun Suk Shin. The topics presented were "Why we need LID" and "Bioretention systems and the design".

- Steve made two presentations at the **IWA Dipcon 2019**; The 19th IWA International Conference on Diffuse Pollution and Eutrophication being held in Jeju, South Korea in October 2019. The presentations were entitled "How Low Impact Development strategies can mitigate high intensity rainfall events" and "If LID is so easy to implement, how come we keep getting it wrong". (http://iwadipcon2019.org/dipcon/about.asp )

- Steve made the following presentations at **St. Andrews University in Scotland** on October 19th , 2017 for the Sustainable Development program. The first presentation is entitled "Improving the environment with Low Impact Sustainable Development Strategies". The second presentation is entitled "Addressing Water Quality and Runoff Issues in a changing weather world".

- Steve was invited by Dr. Jae Ryu of the University of Idaho Water Center to make a presentation entitled "Designing Low Impact Development treatment systems for **Urban & Agricultural Environments" at the Annual US-Korea Conference on Science, Technology, and Entrepreneurship** being held in Atlanta, Georgia on July 29 to August 1, 2015. ( http://www.ukc.ksea.org/UKC2015/ )

- Steve was invited by the Lake George Waterkeeper to make a presentation entitled "Applying LID Concepts in the Real World" at the 5th Annual Low Impact Development Conference being held in Lake George, NY on May 7, 2015. ( http://fundforlakegeorge.org/2015LID )

- Steve was invited by Dr. Hyunsuk Shin and made a presentation entitled "Real Adaptation and Implementation of GI and LID Technology in USA" at the **World Water Forum** (http://eng.worldwaterforum7.org/main/) being held in Daegu, South Korea on April 14, 2015.

- Steve prepared a presentation for a workshop to civil and environmental engineering students at **Pusan National University** (http://www.pusan.ac.kr/uPNU_homepage/kr/default.asp) in Busan, South Korea on April 17, 2015, entitled "Designing LID System - What do you need to know and why".

- Steve was invited by Dr. Hong-Ro Lee of Kunsan National University and made a presentation entitled "Understanding Low Impact Development in the Urban-Rural Interface" for the **Ariul Brainstorming Working Group** on April 16, 2015, in Gunsan, South Korea. It will focus on how

Low Impact Development concepts can be applied to made land areas filled in off the west coast of South Korea to address water quality issues.

- Steve was an invited speaker at the **2014 Low Impact Development Conference** sponsored by the Lake George Waterkeeper and the Fund for Lake George in Lake George, NY on May 1, 2014, for land use professionals and regulatory agencies. He will be presenting case studies focusing on the application of LID concepts for commercial and residential projects.

- Steve was invited by Justin Kenney, Green Infrastructure Coordinator of the Vermont Department of Environmental Conservation Watershed Management Division to present an eight-hour workshop entitled "From Bioretention to Permeable Pavement: An In-depth Introduction to Low Impact Development and Green Stormwater Infrastructure" in Montpelier, Vermont on December 5, 2013. The presentation was hosted by the **Vermont Green Infrastructure Initiative** with support from the following Vermont Agencies and Divisions, **Building and General Services, Ecosystem Restoration Program and Agency of Transportation.**

- Steve was invited to attend and present on the Application of LID Concepts for the Urban Environment and LID Case Studies at the 2nd Low Impact Development, Stormwater Management Forum hosted by the **Land & Housing Institute, Korean Land & Housing Corporation** to be held in South Korea in on October 31, 2013. He also made presentations at the **Korean Institute of Construction Technology** and **Pusan National University** on various aspects of LID during this time.

- Steve was an invited speaker at the **2013 Low Impact Development Conference** sponsored by the Lake George Waterkeeper and the The Fund for Lake George in Lake George, NY on May 2, 2013 for land use professionals and regulatory agencies. Over 80 design professionals and regulatory people were in attendance. He made a presentation entitled "Barriers to the implementation of LID".

- Steve was an invited presenter at a closed-meeting of the **National Association of Home Builders (NAHB) and the Water Environment Federation (WEF)** on October 10, 2012 focusing on progressive stormwater management. The presentation focused on the application of LID strategies on actual development projects and discussed the hydrologic performance and cost effectiveness of LID design.

- Steve was the invited presenter for a 1-hour long webinar presented by **Stormwater Solutions and Stormwater USA** on Low Impact Development and the Basics of Bioretention held on September 18, 2012. Over 760 individuals watched the webinar.

- Steve was an invited speaker at and **EPA/WEF Stormwater Technical Meeting** on July 18, 2012 in Baltimore, MD to discuss the application of Low Impact Development strategies for actual projects with a focus on cost effectiveness when compared to conventional stormwater management as well as field performance of the LID designs. The purpose of this meeting was to assist EPA in the development of a National Stormwater Rule.

- Site Design using Low Impact Development Strategies and What are the impacts of Impervious Cover on Water Quality and Quantity were presented at a workshop entitled "Challenges and Solutions using Low Impact Development", sponsored by the **Lake George Waterkeeper** in Lake George, NY on May 5, 2011, for land use professionals and regulatory agencies. 90 design professionals and regulators in attendance.

- Steve was an invited speaker at the **2012 Low Impact Development Seminar** sponsored by the Lake George Waterkeeper in Lake George, NY on April 25, 2012, for land use professionals and regulatory agencies. 100 design professionals and regulatory people were in attendance. He made a presentation entitled "The Hydrologic Benefits of Vegetation in Site Design".

## Conference Presentations:

- Steve made a presentation entitled "Stormwater Management for Ground Mounted Solar Arrays in the Real World". The presentation was made on Tuesday, February 7, 2023, at 10:30 to 11:00 am CST in Room 2203 at the **2023 IECA Annual Conference**. https://www.eventscribe.net/2023/IECA/

- Steve made two presentations at the International Erosion Control Association (IECA) Annual Conference being held at the Minneapolis Convention Center in Minneapolis, MN from February 15th to February 18th, 2022. (http://www.eventscribe.net/2022/IECA2022). The first presentation is entitled "Low Impact Sustainable Development Design Manual for Morris, Connecticut". The second presentation is entitled "LID in Connecticut – Are Designs Improving?".

- Steve made two presentations at the UKC 2021 which is sponsored by the Korean-American Scientists and Engineers Association being held at the Hyatt Regency Orange County, CA from December 15th to December 18th, 2021. (https://ukc.ksea.org/ukc2021/wp-content/uploads/2021/12/UKC-2021_PB_v1.pdf ). The first presentation is entitled "Implementing LID Retrofits to address Nutrient Loads in Lake Pocotopaug in East Hampton, CT". The second presentation is entitled "How to Design Stormwater Management for Ground Mounted Solar Arrays".

- Steve made the following presentations: "Implementing LID Retrofits to Address Nutrient Loads in Lake Pocotopaug in East Hampton, Connecticut" and "How to Design Stormwater Management for Ground Mounted Solar Array" at the Virtual IECA Annual Conference and Expo on February 22 – 25, 2021https://ieca.org/IECA/2021%20Annual%20Conference%20Home/IECA/IECA_Events/2021_Events/2021_Virtual_Annual_Conference.aspx?hkey=2dc821ad-cb72-4b2e-80ed-69ad51367611 .

- Steve made one presentation at UKC 2019 by The Korean-American Scientists and Engineers Association in Chicago, IL in August 2019. The presentation is entitled "Designing Low Impact Development Treatment Systems for Agricultural Environments". (https://ukc.ksea.org/ukc2019/about/about-ukc-2019/)

- Steve made two presentations at the 2019 Annual Conference of IECA being held in Denver, CO in February 2019. The presentations were entitled "A Study on Introduction Plan of Low Impact Development Techniques for Widespread Application in South Korea" and "If LID is so easy to implement, how come we keep getting it wrong".

- Steve made a presentation entitled "LID in China and South Korea" at the 2018 Annual Conference of the Northeast Chapter of IECA in Concord, NH on October 1, 2018.

- Steve made a presentation entitled "If LID is so easy to implement, how come we keep getting in wrong" at the **2018 International Low Impact Development** conference being held in Nashville, TN on August 12 – 15, 2018. The conference is sponsored by ASCE and EWRI. ( https://www.lidconference.org/ )

- Steve made two presentations at the **2018 TRIECA Conference** being held on March 21 & 22, 2018 at the Pearson Convention Center in Brampton, Ontario. The presentations are entitled "Addressing Stormwater in China with Low Impact Development" and "Implement Low Impact Development in South Korea." This conference is sponsored by the Toronto and Region Conservation Authority and the Canadian Chapter of the International Erosion Control Association.

- Steve made the following presentations at the **2018 IECA Annual Conference** being held in Long Beach, CA in February of 2018. The presentations are entitled "How Low Impact Development strategies can mitigate high intensity rainfall events" and Designing Low Impact Sustainable Development treatment systems for Agricultural Environments".

- Steve was invited by the Dylan Drudul, President of the Mid-Atlantic Chapter of IECA to present the keynote address at a one-day event called "Sediment Control Innovations Roadshow on July 14th in Columbia, Maryland. The keynote is entitled **"A Worldwide Perspective on Municipal Stormwater Issues".**

- Steve made a presentation entitled **"Designing LID Systems: What do you need to know and why"** at the 27th Annual Nonpoint Source Pollution Conference being held in Hartford, CT on April 20-21, 2016, as sponsored by the New England Interstate Water Pollution Control Commission.

- Steve will be presenting four one-hour long webinars through Halfmoon Seminars on Low Impact Development. The first entitled **"Introduction to Low Impact Development"** will be on May 10, 2016 at 12 pm. The second entitled **"Bioretention System Design"** will be offered on May 10, 2016 at 1:30 pm. The third entitled **"Applying LID Concepts to Residential Development"** will be offered on May 12, 2016 at 12 pm. The fourth entitled **"LID Case Studies"** will be offered on May 12, 2016 at 1:30 pm.

- Steve will be making a presentation entitled **"Designing LID Systems: What do you need to know and why**" at the UKC2016 conference, sponsored by KSEA (Korean-American Scientists and Engineers Association) at the Hyatt Regency DFW in Dallas, Texas, August 10 – 13, 2016.

- Steve made five presentations at the **2016 Environmental Connection** conference by IECA (www.ieca.org) being held in San Antonio, Texas on February 16 – 19, 2016. The presentations were entitled "Designing LID Systems: What do you need to know and why", "Construction Site Stormwater: The Ignored Problem", "Solving Construction Stormwater Problems in the Field", "Developing Effective LID Municipal Regulations", and "LID Demonstration Projects in Connecticut, a study of Contrasts".

- Steve made two presentations at the **EPA Region Stormwater Conference 2015** (http://epa.gov/region6/water/npdes/sw/ms4/2015conference/index.html) being held in Hot Springs, AR on October 18-23, 2015. The presentations are entitled "Designing LID systems: What do you need to know and why" and "Designing LID treatment systems for Urban and Agricultural Environments."

- Steve made a presentation entitled "Applying LID strategies to residential and commercial developments to address water quality and runoff volumes" at the KSEA Northwest Regional Conference 2015 held at the Idaho Water Center in Boise, Idaho on October 11, 2015.

- Steve made a presentation entitled "Solving Construction Stormwater Problems in the Field" at **WEFTEC 2015** (http://www.weftec.org ) in Chicago, IL on September 29, 2015.

- Steve made three presentations entitled: "Korean GI/LID Research Facility", Applying LID concepts to High Density Residential Developments, and Municipal LID Regulations" at the 2015 Environmental Connection IECA Annual Conference being held in Portland, Oregon on February 16 – 18, 2015. He also presented a half day workshop entitled: "Designing LID Projects". He moderated an Expert Panel on Low Impact Development with Seth Brown, (Water Environment Federation), Bob Adair (Construction Ecoservices, Inc.) and Roger Sutherland (AMEC)

- Steve made two presentations at International Low Impact Development Conference 2015 in Houston, Texas which is sponsored by ASCE-EWRI. The presentations are entitled "Korean GI/LID Research Facility", and "LID Demonstration Projects in Connecticut: The Good and the Bad".

- Steve made presentations entitled "Overview of Low Impact Development" and "The Application of Low Impact Development Strategies for Land Development Projects" along with Dr. Jae Ryu of the University of Idaho and Dr. Hyun-Suk Shin of Pusan National University at the annual meeting of the **American Water Works Association** in Tyson Corners, VA on November 6, 2014.

- Steve made two presentations entitled "Construction Site Stormwater: The Ignored Problem" and "Applying LID Concepts to High Density Residential Development" at the **2014 Annual Conference and Trade Show of the Northeast Chapter of IECA** held at Lake Morey, Vermont on November 4 – 5, 2014.

- Steve made the following presentations entitled: "A Case Study – Southbury Medical Facility and Applying LID concepts on undeveloped land and in the urban environment" at Municipal Wet Weather Stormwater Conference, hosted by the **Southeast Chapter of IECA** in Charlotte, NC on August 18th and 19th, 2014.

- Steve made the following presentations: "The Incorporation of LID on Affordable Housing Projects, A Case Study – Southbury Medical Facility and LID' and Municipal LID Regulations" at the **16th Annual EPA Region 6 Stormwater Conference** sponsored by the South Central Chapter of IECA in Fort Worth, TX on July 27th through August 1st, 2014.

- Steve made oral presentations at the **2014 Environmental Connection** sponsored by the International Erosion Control Association in Nashville, Tennessee on February 25 – 18, 2014. The presentations were entitled "A Case Study – Southbury Medical Facility and LID", "The Implementation of the Highland Estates Detention Basin Retrofit water quality impairment in Northfield Lake", and "Creating Effective Municipal LID Regulations".

- Steve co-presented an all day workshop on Low Impact Development with Jamie Houle of the University of New Hampshire Stormwater Center at the **2013 International Erosion Control Association Northeast Chapter Conference and Trade Exposition** on November 19 – 21, 2013 in Warwick, RI.

- Steve made three oral presentations at the **2013 International Low Impact Development Symposium** held at the Saint Paul RiverCentre in Saint Paul, Minnesota on August 18 – 21, 2013. The presentations were entitled "A Case Study – Southbury Medical Facility and LID", "LID regulations in Connecticut: The Long and Tortured Road", and "Creating a Stormwater Park in the City Meadow of Norfolk, Connecticut."

- Steve presented two papers at the **2013 EWRI World Environmental and Water Resources Congress** held in Cincinnati, Ohio on May 19- 23, 2013. The papers are entitled: "Municipal LID

Regulations - What is important to include to be successful?" and "Creating a Stormwater Park in the City Meadow of Norfolk, Connecticut". http://content.asce.org/conferences/ewri2013/index.html

- Steve made a presentation at the **Soil and Water Conservation Society Winter Conference** held in Berlin, Connecticut on February 15, 2013. The presentation focused on erosion and sedimentation control issues with Low Impact Development treatment systems.

- Steve presented two papers at the **2013 Environmental Connection** held in San Diego, CA on February 10 – 13, 2013. The papers are entitled "LID Demonstration Project for Seaside Village in Bridgeport, Connecticut" and "Creating a Stormwater Park in the City Meadow of Norfolk, Connecticut". He also presented a full day LID workshop entitled "Next Generation Low Impact Development and Meet Today's Needs" and a half day workshop on Low Impact Development covering Environmental Site Design, Water Quality Issues, Pollutant Loading Analyses, Designing different types of LID treatment systems and actual case studies.

- Steve made three presentations at the **2012 Annual Conference of the Northeast Chapter of IECA** in Fishkill, NY on November 7, 8, & 9, 2012. The presentations are entitled: "LID Demonstration Projects in Connecticut, A Study of Contrasts, Environmental Site Design and LID Hydrologic Issues, and Siting and Designing LID Treatment Systems with Case Studies"

- Steve made two oral presentations entitled "Applying Environmental Site Design Strategies to Design a Residential Subdivision" and "The incorporation of LID on Affordable Housing Projects" at the **2012 Ohio Stormwater Conference** in Toledo, Ohio sponsored by the Ohio Stormwater Association on June 7th and 8th, 2012.

- Presented two papers at the **ASABE Watershed Technology Conference** in Bari, Italy, May 28 – 30, 2012. The papers were entitled "LID Demonstration Project for Seaside Village in Bridgeport, Connecticut" and "The creation of a Stormwater Park in the City Meadow of Norfolk, Connecticut".

- Steve made one oral presentation entitled "LID Demonstration Project for Seaside Village in Bridgeport, Connecticut" and presented one poster entitled "The Incorporation of LID on Affordable Housing Projects" at the **2012 World Environmental & Water Resources Congress** in Albuquerque, New Mexico sponsored by EWRI/ASCE on May 20 - 24, 2012.

- "Stormwater Retrofit of Highwood Estates Detention basins to address Water Quality Issues and How the application of Environmental Site Design Strategies can provide a resource for carbon sequestering" were presented at the **2011 International Erosion Control Associated Northeast Chapter Annual Conference** on December 1 – 3, 2011 at the Crowne Plaza Hotel in Natick, Massachusetts.

- Stormwater Retrofit of Highwood Estates Detention Basins to enhance Water Quality Benefits; A Low Impact Development (LID) Model Ordinance and Guidance Document and The Farmington River Enhancement Grants: A tale of three towns and the path to Low Impact Development were presented at the **Philadelphia Low Impact Development Symposium "Greening the Urban Environment"** in Philadelphia, PA (September 2011) sponsored by EWRI, Villanova University, North Carolina University and the University of Maryland.

- Stormwater Retrofit of Highwood Estates Detention Basins to enhance Water Quality Benefits; The Farmington River Enhancement Grants: A tale of two towns and the path to Low Impact Development and A Low Impact Development (LID) Model Ordinance and Guidance Document was

presented at the **EWRI/ASCE 2011 World Environmental & Water Resources Congress** in Palm Springs, CA (May 2011).

- Stormwater Retrofit of Highwood Estates Detention Basins to enhance Water Quality Benefits was presented at the "Annual Nonpoint Source Pollution Conference", sponsored by the **New England Interstate Pollution Control Commission** in Saratoga Springs, NY, on May 17-18, 2011.

- Stormwater Pollutant Load Modeling presented at the **Northeast Chapter of IECA Annual Conference** at the University of New Hampshire Stormwater Center in Durham, NH (December 2010).

- How the application of Environmental Site Design Strategies and Low Impact Development Storm Water Treatment Systems can mimic the Natural Hydrologic Conditions in a watershed and provide a resource for carbon sequestering and The Importance of Assessing Pollutant Loads from Land Development Project and the Design of Effective Storm Water Treatment Systems at the **EWRI/ASCE Watershed Management Conference** in Madison, WI (August 2010).

- The Tolland Low Impact Development Design Manual: The Changing Paradigm for Land Development, The application of Environmental Site Design Processes to design a residential subdivision and A Low Impact Development (LID) Model Ordinance and Guidance Document at the **ERWI/ASCE 2010 World Environmental and Water Resources Congress** in Providence, RI (May 2010).

- The application of Form-Based Zoning and Low Impact Development for the Revitalization of the Town Center of Simsbury, Connecticut and The Integration of Low Impact Development to enhance the application of Smart Code Zoning to create a Gateway District to the Historic Town Center of Tolland, Connecticut at the **EWRI/ASCE 2010 International Low Impact Development Conference** in San Francisco, CA (April 2010).

- The application of Environmental Site Design Processes to design a residential subdivision and Assessing Pollutant Loads and Evaluation of Treatment Systems to achieve Water Quality Goals for Land Development Projects at the **EWRI/ASCE 2009 World Environmental & Water Resources Congress** in Kansas City, Missouri (May 2009).

- Ahead of the Curve – Tolland, CT adopts Low Impact Development Regulations and Preparing a Pollutant Loading Analysis for Land Development Projects at the **Urban Water Management Conference** in Overland Park, KS sponsored by National Association of Clean Water Agencies (NACWA) and the City of Independence Water Pollution Control Department (March 2009).

- Ahead of the Curve – Tolland, Connecticut adopts Low Impact Development Regulations and Trade Winds Farm – Winchester, Connecticut – How to create a LID subdivision along with the preparation of a poster on Preparing a Pollutant Loading Analysis for Land Development Projects at **EWRI/ASCE 2008 International Low Impact Development Conference** in Seattle, WA (November, 2008).

- Trade Winds Farm – Winchester, Connecticut – How to create a LID subdivision and Preparing a Pollutant Loading Analysis for Land Development Projects at the **IECA Northeast Chapter's Annual Conference & Trade Exposition** in Portland, ME (October, 2008).

- The Preparation of a Valid Pollutant Loading Analysis at the **National StormCon 2008 Conference** in Orlando, FL (August, 2008).

- Panelist with Linda Farmer, AICP for Profiles of Partnerships for Addressing NPS Pollution at **NEIWPCC Annual Non-point Source Pollution Conference** in Groton, CT (May, 2008).

## Workshop Presentations:

- Steve presented a two-hour webinar entitled "Bioretention System Design" on Wednesday, November 2, 2022 at 1:00 pm CST, sponsored by Halfmoon Seminars. Link: https://halfmoonseminars.org/product/webinars/biorentention-system-design-2/?variation=142422

- Steve presented a 6.5-hour webinar entitled "Low Impact Development" on Wednesday, April 20, 2022 from 10:00 am to 2:00 pm and then on Thursday, April 21, 2022 from 10:00 am to 12:45 pm sponsored by Halfmoon Seminars.

- Steve presented a two-hour webinar entitled "Bioretention System Design" on March 28, 2022. ( https://halfmoonseminars.org/product/webinars/biorentention-system-design/ ).

- Steve made a two-hour webinar entitled "How to Design for Stormwater Management for Ground Mounted Solar Arrays" on Wednesday, December 29, 2021 sponsored by Halfmoon Seminars ( https://halfmoonseminars.org/product/webinars/how-to-design-for-stormwater-management-for-ground-mounted-solar-arrays-3/ )

- Steve made a 6.5-hour presentation on Erosion and Sediment Control on Tuesday, January 25, 2022 for Halfmoon Seminars.

- Steve made an all-day (6.5 hour) webinar entitled "New York Erosion and Sediment Control" on February 3, 2022. ( https://halfmoonseminars.org/product/webinars/new-york-erosion-and-sediment-control/ ).

- Steve presented a 2-hour webinar entitled "How to Design Stormwater Management for Ground Mounted Solar Arrays" on July 14, 2020. This webinar is hosted by Halfmoon Seminars.

- Steve presented a two-day webinar encompassing 6.5 hours entitled "Low Impact Development" on July 15, 2020 and July 16, 2020. The webinars are hosted by Halfmoon Seminars.

- Steve presented an all-day workshop on Low Impact Development for continuing education for design professionals in Little Rock, Arkansas on February 28, 2020 which is sponsored by Halfmoon Seminars.

- Steve presented an all-day workshop on Low Impact Development for continuing education for design professionals in Nanuet, NY on December 19, 2019 which is sponsored by Halfmoon Seminars.

- Steve presented a webinar entitled "Construction Stormwater Regulation Strategies: Best Practices to Assure NPDES Compliance" on Thursday, November 12, 2015 at 2:00 pm to 3:00 pm eastern time. The webinar is sponsored by Business and Legal Resources.

- Steven presented a full day workshop entitled "Stormwater Management 2015" in Columbia, Maryland on August 13, 2015 which focused on applying the State of Maryland Stormwater Manual. The workshop was sponsored by Halfmoon Seminars, LLC and 113 people attended the workshop.

- Steve presented a full day workshop on "Stormwater Regulations in Connecticut", sponsored by Halfmoon Seminars, LLC in North Haven, Connecticut on June 25, 2014. More than 30 engineers and landscape architects attended the workshop.

- Steve was the facilitator in a live chat as part of the Stormwater Solutions Virtual Trade Show on April 2, 2014. The topic of the live chat will be LID with a focusing on Bioretention systems.

- Steve made a presentation entitled "What is Low Impact Development and how do you apply it to residential projects" for the Connecticut Chapter of the American Institute of Architects in New Haven, Connecticut on April 22, 2014.

- Steve made a presentation entitled "Wastewater to Stormwater; Designing a subsurface flow gravel wetlands" at the annual meeting of the Connecticut Association of Wetland Scientists on March 20, 2014 in Southbury, Connecticut.

- Steve made a presentation entitled " Low Impact Development and the Connecticut General Stormwater Permit" at the annual meeting of the Southern New England Chapter of the Soil and Water Conservation Society on March 14, 2014 at Eastern Connecticut State University.

- He co-taught an ASCE Short Course entitled, "Introduction to Low Impact Development" with Mike Clar at the 2013 Low Impact Development Symposium held in St. Paul, Minnesota on August 18, 2013.

- Steve presented a workshop on Low Impact Development to the Town of Naugatuck Inland Wetlands Commission on June 5, 2013 to demonstrate how the implementation of LID can reduce stormwater impacts in the urban area of the community.

- Steve presented a webinar entitled "The Basics of Low Impact Development on Wednesday, April 17, 2013.

- Steve presented a webinar entitled "Changing the Regulatory Framework to Adopt LID Strategies" on Thursday, March 7, 2013 and on Thursday, August 8, 2013 from 11:30 am to 1:00 pm through **ASCE and EWRI.** Link for more information.

- Steve presented a three-hour workshop on Low Impact Development on June 5, 2012 at the Oxford town hall for municipal land use staff and officials at the request of the **Oxford Inland Wetlands and Watercourses Commission**. Approximately 20 individuals attended the workshop.

- Steve presented an eight-hour short courses on Low Impact Development at the **EWRI/ASCE 2011 World Environmental & Water Resources Congress** in Palm Springs, CA (May 2011). The following topics will be covered: Understanding and Implementing Principles of Low Impact Development, Applying LID Strategies to a Site, Low Impact Development Hydrologic Considerations, The Regulatory Framework and LID, LID Integrated Management Practices, Erosion and Sedimentation Controls for the Implementation of LID Practices and Case Studies (Applying LID and Regulations). 12 attendees took the course, including professors from Mississippi State

University, Oklahoma State University, Adelaide University (Australia) and Pusan National University (South Korea).

- Understanding and Implementing Principles of Low Impact Development, Applying Low Impact Development to a Site, Low Impact Development Hydrologic Considerations, Low Impact Development Integrated Management Practices, Erosion and Sediment Control for the Implementation of Low Impact Development Practices, and Case Studies of LID (Residential and Commercial) at workshops on Low Impact Development sponsored by **HalfMoon, LLC** (https://www.halfmoonseminars.com ) in Albany, NY, Ronkonkoma, NY, North Haven, CT, Manchester, NH, Nanuet, NY, Cleveland, OH, Natick, MA, Portland, ME Fort Washington, PA, Springfield, MA, Wilmington, DE, White River Junction, VT, Somerset, NJ, and White Plains, NY for continuing education credit for design professionals. A total of 322 land use professionals have attended these workshops.

- Pollutant Loads and the Design of Effective Stormwater Treatment Systems was presented at the Virtual H2O conference on February 22, 2011 as presented by **PennWell Publishing**. 25 professionals in attendance.

- LID Stormwater Treatment Systems: Siting, Design and Installation for Maximum Environmental Benefit. What are the aesthetic, financial and maintenance implications? presented at a seminar for the **AIA Connecticut, Committee on the Environment** in New Haven, CT (December 2010). 70 architects in attendance.

- Low Impact Development and the Environmental Site Design process to create sustainable sites at a seminar for the **AIA Connecticut, Committee on the Environment** in New Haven, CT (September 2010). 40 architects in attendance.

- Workshop entitled Using Environmental Site Design Strategies and LID stormwater systems for commercial development at the **Connecticut Conference on Natural Resources** at the University of Connecticut (March 2010). 10 design professionals and regulatory staff in attendance.

- Implementing Low Impact Development in Your Community for the **Connecticut Technology Transfer Center** in Glastonbury, CT (November, 2009). 40+ professionals in attendance.

- What towns can do to encourage LID at the "Low Impact Development Forum" presented by the **Housatonic Valley Association** in Shelton, CT. (October 2009). 12 professionals in attendance.

- Town of Tolland, CT; Low Impact Development Regulations and Design Manual at the **Community Builders Institute** for the workshop entitled: "Swift, Certain & Smart: Best Practices in Land Use" (May 2009). 30+ professionals in attendance.

- Low Impact Development, Environmental Site Design and Water Quality issues and strategies to local municipalities (**Greenwich, and Old Lyme**) to provide an educational opportunity about the many benefits of Low Impact Development in 2009. 30+ design professionals, regulatory commissioners and staff in attendance for each presentation.

- Low Impact Development, Environmental Site Design and Water Quality issues and strategies to local municipalities (**Bolton, Farmington, and Guilford** to date) on a pro bono basis to provide an educational opportunity about the many benefits of Low Impact Development in 2009. 25+ design professionals, regulatory staff and commission members in attendance for each presentation.

- Workshop entitled Using Environmental Site Design Strategies to create a residential subdivision at the **Connecticut Conference on Natural Resources** at the University of Connecticut (March 2009). 20 design professionals and regulatory staff in attendance.

- The Need for Pollutant Loading Analyses for Land Development Projects to storm water engineers at **CT DEP** (March 2009). 6 DEP staff in attendance.

- A review of existing land use regulations and storm water management issues for the Middle Quarter Districts in Woodbury, CT and how the implementation of Environmental Site Design and Low Impact Development strategies can improve water quality of storm water runoff for the Woodbury land use agencies (August 2008). 15 regulatory commission members in attendance.

- Low Impact Development at meeting of the **Connecticut Association of Zoning Enforcement Officers** (October 2007). 30+ professionals in attendance.

- Low Impact Development and adoption of LID regulations by municipalities at workshops of the **Land Use Leadership Alliance (LULA)** (2007, 2010 and 2011). 20+ professionals in attendance at each presentation.

- Stormwater management and Low Impact Development at workshop sponsored by the **Northwest Conservation District** held for land use officials (March 2006). 20+ professionals in attendance.

## Conferences Attended

- Bioretention Summit: Ask the Researcher – Annapolis, MD by the University of Maryland (Dr. Alan Davis), North Carolina State University (Dr. Bill Hunt) and Villanova University Stormwater Partnership (Dr. Rob Traver) – (July 2010).

- Workshop at the University of New Hampshire Stormwater Center on permeable pavements. This full-day training included field visits to a variety of on-the ground porous pavement installations throughout the region. Participants learned key design principles necessary to successfully design, evaluate, specify, and install porous pavement for stormwater management. (December 2009).

- Two workshops at the University of New Hampshire Stormwater Center in Durham, NH to observe conventional and Low Impact Development storm water treatment systems in operation. The Stormwater Center is independently verifying the effectiveness of the various treatment systems to remove pollutants from runoff and reduce impacts associated with storm flows. (March 2006 and May 2007).

- 2$^{ND}$ National Low Impact Development Conference – North Carolina State University held in Wilmington, NC, (March 2007).

- Designing Bio/Infiltration Best Management Practices for Stormwater Quality Improvement – University of Wisconsin (Madison, WI) (November 2005).

- Stormwater Design Institute – Center for Watershed Protection (White Plains, NY), (December 2004).

- Engineering and Planning Approaches/Tools for Conservation Design – University of Wisconsin (Madison, WI) (December 2003).

- Law for Design Professionals in Connecticut – Lorman Education Services in Trumbull, CT (September 2002).

- On-site Wastewater Facility Design – University of Massachusetts in Amherst, MA (May 2002).

- The Northeast Onsite Wastewater Short Course & Equipment Exhibition – New England Interstate Water Pollution Control Commission in Newport, RI (March 2002).

- Designing On-site Wetland Treatment Systems, University of Wisconsin, (Madison, WI) (October 1999).

- Cost Effective Drainage System Design – University of Wisconsin (Atlanta, GA) (November 1997).

- Treatment Wetlands, University of Wisconsin, (Madison, WI). "Creating and Using Wetlands for Wastewater Disposal and Water Quality Improvement" (April 1996).

- Alternative On-site Wastewater Treatment Systems, New England Intrastate Pollution Control Commission's On-Site Wastewater Task Force in Westford, MA (November 1994).

- Stormwater Quality, University of Wisconsin, (Portland, ME). "Designing Stormwater Quality Management Practices" (June 1994).

LOW IMPACT SUSTAINABLE
LISD
DEVELOPMENT
TRINKAUS ENGINEERING

# LOW IMPACT SUSTAINABLE DEVELOPMENT PROJECTS

## LID and LISD Regulations and Design Manuals

- **Town of Tolland. CT –** Prepared amendments to Town of Tolland Zoning, Subdivision, Inland Wetland regulations and Road Design Manual to incorporate Low Impact Development standards. Wrote "Design Manual – Low Impact Development – Storm Water Treatment Systems – Performance Requirements – Road Design & Storm Water Management" prepared for the Town of Tolland; October 2007. The Town of Tolland was awarded the Implementation Award by the CT-APA for the LID regulations and design manual in December 2008.

- **Town of Plainville, CT –** Planimetrics was the lead consultant on this project. This office performed the technical regulatory audit to identify barriers to the implementation of LID. These barriers were removed from the regulations to provide for the implementation of LID. A LID design manual was written by Steve Trinkaus to address specific development/stormwater issues for the Town of

Plainville. The regulatory changes and LID manual were adopted by the Planning and Zoning Commission in September 2010. This work was funded by the Farmington River Enhancement Grants from CT DEP.

- **Town of Harwinton, CT –** In conjunction with Planimetrics of Avon, CT, the existing land use regulations were evaluated for barriers to the implementation of Low Impact Development (LID). The project team suggested changes to the land use regulations to encourage the application of LID in the community. Steve Trinkaus defined design processes and strategies to encourage the implementation of LID in the town. This work was funded by the Farmington River Enhancement Grants from CT DEP.

- **Town of East Granby, CT –** Planimetrics was the lead consultant on this project. This office performed the technical regulatory audit to identify barriers to the implementation of LID. These barriers were removed from the regulations to provide for the implementation of LID. Steve Trinkaus prepared a LID Design Manual and LID Educational document for the town working with Gary Haynes, the town planner. This work was funded by the Farmington River Enhancement Grants from CT DEP.

- **Town of Morris, CT** - This office performed the technical regulatory audit to identify barriers to the implementation of LISD. These barriers were removed from the regulations to provide for the implementation of LISD. A LISD design manual was written by Steve Trinkaus to address specific development/stormwater issues for the Town of Morris. The regulatory changes and LISD manual were adopted by the Planning and Zoning Commission in January 2020.

## LID Projects

- **Town of Stonington** – Stonington, Connecticut – Perform site investigation consisting of deep test holes and then double ring infiltration tests to determine feasibility of LISD stormwater retrofits to reduce directly connected impervious cover under Town MS4 permit. Design LISD retrofits consisting of Bioretention systems at four locations. Retrofits will result in the disconnection of approximately five acres of impervious area.

- **Victorian Heron, LLC –** Bethel, Connecticut (Affordable Housing) – An existing Victorian house with 6 apartments will be expanded by the addition of a new building containing five more apartment developed under 8-30g. Access and parking areas improved for fire access to site. Stormwater will be handled by the creation of a Bioretention system to address water quality, groundwater recharge volume and peak rate attenuation.

- **Garden Homes Management –** Westport, Connecticut (Affordable Housing) – 19-unit residential apartment building being developed under 8-30g (affordable housing) on 1 acre site directly tributary to West Branch of the Saugatuck River. All construction activities are located outside regulatory setbacks to tidal wetland and 100-year flood boundary. Stormwater management system was designed to fully infiltrate the runoff for all storm events up to and including the 100-year event and reduce pollutant loads to existing levels as wooded parcel.

- **Jelliff Mill, LLC** – New Canaan, Connecticut: Redesigned the site layout to create ten single family residential units on a site overlooking the restored historic Jelliff Mill dam on the Noroton River. The site design uses two sections of permeable pavement and a Bioretention system to infiltrate the runoff from the proposed impervious areas on the site. Due to the presence of sand and gravel soils, all

runoff from the impervious areas will be infiltrated up to and including the 25-yr storm event (5.7" of rain/24 hrs). Fully constructed and occupied.

- **SRG Family, LLC** – Southbury, Connecticut: Design final site grading for 38,000+ sq.ft. Medical services building and approximately 225 parking spaces in order to maintain overland flow patterns. Designed multiple LID treatment systems consisting of bioswales with weirs, Bioretention systems and Permeable Pavement (asphalt) to handle runoff from all impervious area on the project site. The LID treatment systems are capable of fully infiltrating the runoff from a 50-yr storm event will virtually eliminating the discharge of any pollutants to the adjacent wetland area. Currently pending before Inland Wetlands Commission for modification of original approval.

- **Farmington River Watershed Association** – Winchester, Connecticut: Designed stormwater retrofit for existing 1-acre paved parking area at the science building of the Northwest Community College to treat runoff prior to discharge into the Still River. Retrofit consists of forebay and Bioswale to treat runoff from parking area and building roof. Currently at Bid stage.

- **Garden Homes Management –** Southport, Connecticut (Affordable Housing) - Designed site to support 96-unit apartment building and 115 parking spaces. Site contains both freshwater and tidal wetlands. Stormwater management design required to provide Groundwater Recharge Volume & Water Quality Volume in addition to reducing the post-development peak rate of runoff from the 10-yr rainfall event to the pre-development peak rate of runoff from the 2-yr rainfall event. The stormwater management design includes grassed swales, Bioretention systems and underground concrete galleries to meet all of these stormwater requirements. Due to favorable soils on the site, the site will likely be a zero discharge site. Court Approved.

- **Garden Homes Management** – Milford, Connecticut (Affordable Housing) - Designed site to support 257-unit apartment building with 295 parking spaces. Stormwater management design required to provide Groundwater Recharge Volume & Water Quality Volume in addition to reducing the post-development peak rate of runoff from the 25-yr rainfall event to the pre-development peak rate of runoff from the 25-yr rainfall event. The design utilizes a Bioretention system, two underground galleries systems as well as a small detention basin to meet all of the stormwater requirements. Court Approved.

- **Garden Homes Management** – Milford, Connecticut (Affordable Housing) - Designed site to support 21,888 sq.ft. building (three stories) containing 36 studio apartments and 45 parking spaces. Permeable pavement and Bioretention will be used on the site to treat runoff for water quality improvements along with reducing runoff volume from the 1-yr to 100-yr storm event. Construction complete and project occupied.

- **Quickcomm, Inc. –** Newtown, CT**:** Design a parking facility for approximately 140 vehicles to serve an existing corporate use. Runoff from the entire parking facility will be directed to one of seven Bioretention systems. Water quality of the runoff will be improved by the filtration through a specialized soil media and will then infiltrate into the underlying soils. Due the presence of sand and gravel soils, the Bioretention systems will fully infiltrate all runoff up to and including a fifty-year design storm (6.5" of rain/24 hours). Land use approvals obtained in the fall of 2012 and work completed in the fall of 2013.

- **Garden Homes Management** – Fairfield, Connecticut (Affordable Housing) - Designed site to support 32,592 sq.ft. building (three stories) containing 54 studio apartments and 68 parking spaces. Permeable pavement will be used for majority of parking facility. Roof drains will also be directed

to permeable pavement system for water quality improvement. Reservoir layer was sized to fully contain 1.7" of runoff from contributing impervious area. By using a raised underdrain an anaerobic condition will be maintained in the bottom of the reservoir, thus providing denitrification of Total Nitrogen prior to discharge to tidal section of Rooster River. Construction complete and occupied.

- **Garden Homes Management** – Oxford, Connecticut (Affordable Housing) - Design site plan for 126 units of manufactured housing on 41+ acres. Stormwater management is achieved by the use of linear Bioretention systems (Bioswales) along both sides of all interior roads. After treatment in Bioswales, all runoff is directed to standard detention basins to provide peak rate attenuation from the 2-year to 100-year rainfall event. Approved by Inland Wetlands Agency, Denied by Planning and Zoning Commission. Court Approved and under construction.

- **Compton Family Trust** – New Hartford, Connecticut: Design two wet swales systems to convey and filter runoff from road which is currently discharged into West Hill Lake via a paved swale. West Hill Lake has very good water quality and the owner desires this work on this property to become a template for other homeowners on West Hill Lake to prevent adverse impacts of stormwater on the water quality of the lake. Received all necessary land use approvals. Construction to commence in the summer of 2012.

- **Highwood Estates** – Thomaston, Connecticut: Design retrofits for two existing failing detention basins serving existing 50 lot residential subdivision. Retrofits were designed using LID techniques to improve water quality reaching Northfield Brook, an impaired waterway. The larger basin was converted to an Extended Detention Shallow Wetlands to significantly reduce pollutant loads. Due to a limited area, only a forebay and deep pool could be designed for the smaller basin, thus providing measurable improvements in water quality.

- **Farmington River Watershed Association** – Winchester, Connecticut: Design stormwater retrofits consisting of a Bioretention system at the Town of Winchester Wastewater Treatment Plant and a Bioswale at the Town of Winchester Public Drinking Supply facility. These projects are being funded as LID demonstration projects to increase public awareness of LID. The systems were installed in June 2012 and were featured in articles in the Republican American and Register Citizen newspapers.

- **Harwinton Sports Complex** – Harwinton, Connecticut: Redesign stormwater management system for indoor sports facility to use vegetated swales and Bioretention systems. Redesign site grading to eliminate all structural drainage in parking facility. Client saved over $ 40,000 on infrastructure costs by the use of LID treatment systems.

- **Holland Joint Venture, LLC –** Bridgewater, Connecticut: Prepared site plan for 28,000 sq.ft. industrial/light assembly use and 140 parking spaces on 10.94 acres. Utilize Environmental Site Design strategies to preserve large portions of site in natural condition, minimize impacts due to site disturbance, and minimize impacts to wetland/watercourse system by access driveway. Designed five Bioretention systems for storm water management and pollutant removal from all impervious areas.

- **Goodhouse Flooring, LLC** – Newtown, Connecticut: Design site to accommodate 8,800 commercial building and associated driveway and parking areas on 1-acre site. Designed eight Bioretention systems to handle runoff from all impervious surfaces. Analyze and demonstrate that State of Connecticut water quality goals will be achieved for the site design.

- **Trade Winds Farm** – Winchester, Connecticut: 24 lot Open space subdivision on 104+ acres of land. Performed all civil engineering design work for project. Notable feature of project is the preservation of 64+ acres of the site as dedicated Open Space. Many LID strategies such as Environmental Site Design, site fingerprinting, volumetric reduction and water quality improvements were incorporated into site design. Storm water treatment systems utilized vegetated basins, vegetated swales with gravel filter berms, emergent marsh, Bioretention systems, linear vegetated level spreader, and meadow filter strips.

- **Northern View Estates** – Sherman, Connecticut: Five lot subdivision with private road. Design has no direct wetland impacts and only minor intrusions into defined 100' upland review area. Low Impact Development systems, such as vegetated swales and Bioretention were used to treat post-development runoff while maintaining existing drainage patterns to the maximum extent possible.

- **Mill River** – New Milford, Connecticut: Designed 14 lot open space subdivision on 68-acre site. Performed all civil engineering services for project. .LID treatment systems such as a permanent pond/emergent marsh system, linear biofiltration swale, and rain gardens were designed for the site.

- **Byron Avenue Cluster Development** – Ridgefield, Connecticut: Seven lot cluster subdivision on 4 acres. The Stormwater management system consisted of a road with no curbs, grassed swales, and constructed wetland with detention to reduce pollutant loads and increases in the peak rate of runoff.

- **The Estates on the Ridge** – Ridgefield, Connecticut: 32 lot open space subdivision on 152+ acres. Over 80 acres of the site will be preserved as Open Space as part of this project. Stormwater will be treated by the use of rain gardens for roof drains, infiltration trenches for footing drains, emergent marsh systems and vegetated swales for conveyance and treatment of road runoff. Designed over 1 mile of proposed road for project. Designed bottomless culverts over several wetlands crossing to minimize direct impact on wetland areas.

- **G & F Rentals, LLC** – Oxford, Connecticut: By utilizing LID stormwater concepts such as grass filter strips, Bioretention in parking islands, Bioretention for roof drains, and infiltration trenches, a total of 54,000 sq.ft. of commercial office space along with 140+ parking spaces was placed on 10-acre site. The project also restored previously degraded inland wetlands on the site.

- **Dauti Construction – Edona Commons** – Newtown, Connecticut: Designed 23-unit affordable housing plan to minimize impacts on delineated wetland areas. Designed three construction wetland systems for the treatment of storm water runoff for water quality renovation.

- **American Dimensions, LLC** – New Milford, Connecticut: Redesigned the storm water treatment systems for a 7-lot residential subdivision. Rain gardens were designed to handle the runoff from all roof areas and proposed driveways. Each rain garden provided the required Water Quality Volume and Groundwater Recharge Volume as specified in the 2004 Storm Water Quality Manual. A Subsurface Gravel Wetland was designed to treat the full Water Quality Volume for runoff from adjacent roads network which drained through the subject property.

- **Molitero Residence** – New Fairfield, CT: Designed five Bioretention systems to mitigate both volumetric increases of runoff and address water quality issues for large building addition to single family residence on Candlewood Lake. Also designed landscape filter strip above lake edge to filter runoff from up gradient lawn area. Bioretention systems fully infiltrated 5" of rain in 24 hours from Hurricane Irene in August of 2011. Project was featured in newsletter of Candlewood Lake Authority to demonstrate the effectiveness of LID treatment systems in a lake environment.

- **Multiple single-family residences** – Design Bioretention systems to mitigate volumetric increases of runoff due to increases of impervious cover on the lot for large building additions and new construction including the reduction of volumetric increases up to the 25-yr event (5.7" of rain in 24 hours).

## Residential Subdivisions

- **Stone Ridge Estates**, 59 lot residential open space subdivision, Ridgefield, Connecticut (Town of Ridgefield)
- **Oak Knoll**, 14 lot open space subdivision, Ridgefield, Connecticut (Mike Forbes)
- **Ward Acres Farm**, 12 lot open space subdivision, Ridgefield, Connecticut (Sturges Brothers, Inc.)
- **Horblitz Subdivision**, 13 lot open space subdivision, Ridgefield, Connecticut (John Sturges)
- **McKeon Subdivision**, 14 lot conventional subdivision, Ridgefield, Connecticut (McKeon Family Trust)
- **High Ridge Estates**, 5 lot subdivision in historic district, Ridgefield, Connecticut (Scandia Construction)
- **Millstone Court**, 7 lot conventional subdivision, Ridgefield, Connecticut (Sturges Brothers, Inc.)
- **Cricklewood Subdivision** – 12 lot conventional subdivision, Redding, Connecticut (Jay Aaron)
- **Spruce Meadows Subdivision** – 12 lot conventional subdivision, Wilton, Connecticut (Piburo Builders)
- **Noroneke Estates** – 12 lot open space subdivision, Ridgefield, Connecticut (John Sturges)
- **Lynch Brook Lane** – 7 lot open space subdivision, Ridgefield, Connecticut (Sturges Brothers, Inc.)
- **Ledgebrook Subdivision** – 27 lot conventional subdivision, Southbury, Connecticut (Conte Family Trust, LLC**)**
- **Seven Oaks** – 19 lot open space subdivision, Ridgefield, Connecticut (Basha Szymanska)
- **Applewoods** – 29 lot conventional subdivision, Bethel, Connecticut (Gene & Joe Nazzaro)

## Third Party Engineering Reviews

- **Groton Open Space Association** – Wal-Mart Super center, Mystic Woods Age Restricted Development, and changes to stormwater standards in the Town of Groton regulations – Groton, Connecticut. Focus of review was on stormwater management plans to address water quality and runoff volumes per the CT DEP 2004 Storm Water Quality Manual as well as the adequacy of the erosion and sedimentation control plan for the proposed development. Project approved with modifications to stormwater management system to address water quality.
- **Town of Tolland Planning & Zoning Commission** – Star Hill Athletic Complex with focus on water quality impacts on existing impaired waterway. Focus was on suggesting changes to stormwater management system to comply with recently adopted Low Impact Development requirements in the Town of Tolland. Project approved and built with modifications to stormwater management system to address water quality of post-development runoff.
- **Town of Newtown Inland Wetlands Commission** – Sherman Woods – 38 lot residential Subdivision with focus on stormwater management and water quality. Review stormwater management plan for compliance with CT DEP 2004 Storm Water Quality Manual to address water quality issues being directed to high quality wetland systems. Also review erosion & sedimentation control plan for adequacy and compliance with CT DEP 2002 Guidelines for Soil Erosion & Sediment Control. Project withdrawn and not resubmitted.
- **Town of Winchester Inland Wetlands Commission** – 30,000 sq.ft. Commercial building with grading and stormwater management within 100-yr flood plain. Plan reviewed focused on impacts to

floodway and 100-year flood plain as a result of the placement of significant fill within the flood plain. Project approved with modifications to stormwater management system.

- **Town of Southbury Inland Wetlands Commission** – 35,000 sq.ft. Medical office building proposed in close proximity to inland wetlands & watercourses. Review focus on the adequacy of the stormwater management plan to address water quality and runoff volumes prior to discharge into on-site wetland areas.
- **Friends of Litchfield** – Stop & Shop proposal on existing retail site proposing an increase of impervious area of 1 acre directly draining into an aquifer protection area. Focus of review was on adequacy of stormwater management system to address water quality of runoff and prevent further off-site adverse impacts. Project approved with minor modifications to stormwater management system.
- **The Regency at Ridgefield** – Proposal for contractor's yard on steep slope immediately uphill of existing pond and wetlands. Project proposed removal of over 45,000 cubic yards of earth and rock to facilitate construction of building. Focus of review was on adequacy of erosion control and stormwater management plan to prevent discharges of pollutants to receiving pond. Project denied citing impacts of stormwater on existing pond.
- **Friends of Oswegatchie Hills Nature Preserve, Inc. and Save the River, Save the Hills, Inc**. – Review of preliminary site plan for 840 unit of affordable housing on a 230+ acre site directly adjacent to the Niantic River submitted for a zone change to the Planning and Zoning Commission. Focus of review was on stormwater management and impacts to down gradient wetlands, including the Niantic River. Preliminary site plan approval granted with conditions of approval requiring final plans to address stormwater issues raised by Trinkaus Engineering, LLC.
- **Save the River, Save the Hills, Inc**. – Review of the erosion control plans and stormwater management plans for 90-acre solar array proposed on core forest in Waterford, Connecticut which drained directly to first order cold water fishery streams. Provide written comments to Connecticut Siting Council on behalf of Save the River, Save the Hills (Intervenor). Siting Council denied project citing erosion and stormwater management issues with the plan.
- **Town of Brookfield Inland Wetlands Commission** – The Enclave at Brookfield, an affordable housing project with 187 units on 9.8 acres proposing filling of wetland, locating stormwater basin within inland wetland area and a significant increase of impervious. Review focused on adequacy of stormwater management system to address water quality, runoff volume and peak rate changes due to development in accordance with CT DEP 2004 Storm Water Quality Manual and local land use requirements, review of erosion & sedimentation control plan for compliance with CT DEP 2002 Guidelines for Soil Erosion & Sediment Control and local land use requirements. Offer modifications to plans to address water quality and runoff volume which applicant accepted resulting in approval of project.
- **Town of Brookfield Inland Wetlands Commission and Zoning Commission** – The Renaissance, an affordable housing project with 156 units of 5+ acres adjacent to the Still River replacing existing development on the site. Review focused on adequacy of stormwater management system to address water quality, runoff volume and peak rate changes due to development in accordance with CT DEP 2004 Storm Water Quality Manual and local land use requirements, review of erosion & sedimentation control plan for compliance with CT DEP 2002 Guidelines for Soil Erosion & Sediment Control and local land use requirements. Additionally, reviewed issues of development in the floodway and 100-year flood plain of the Still River. Provided modifications to plans to address water quality and runoff volume which applicant accepted resulting in approval of project.
- **Town of Brookfield Inland Wetlands Commission** – Brookfield Village – Phase II – 12/23 Station Road proposing commercial space and residential apartments in the "Four Corners of Brookfield"; 70 Stony Hill Road proposing 26 units of affordable housing served by private water and on-site sewage disposal systems; 468 Federal Road – 280-unit affordable housing project. In all applications, the review focused on the probable adverse impacts to inland wetlands and watercourse as well as the

adequacy of the erosion control plan and stormwater management plan to treat non-point source pollutants and runoff volumes to minimize adverse impacts to the receiving inland wetlands and watercourses. Original application withdrawn after initial review. Provide sketch of modifications to improve water quality of post-development runoff and minimize direct impacts on inland wetlands. Application not resubmitted at this time.

- **Town of Salisbury Inland Wetlands Commission** – Review of multiple applications for residential development and/or improvements on existing lakes. Issues reviewed were stormwater management to ensure that water quality of post-development runoff was improved prior to entering lake and that erosion control plans were appropriate and adequate to prevent eroded material from reaching the lake or shoreline wetlands.
- **Branford Citizens for Responsible Development** – Review of development plans for Costco Store and other commercial development on 45 acres in Branford, CT. Review focuses on stormwater management issues particularly increased runoff volumes and pollutant loads to be generated by development and whether the proposed stormwater management proposal would adequately address the impacts of these two issues. Both the 2004 CT DEP Storm Water Quality Manual and the Branford Inland Wetland Regulations were used to determine if the plans were compliant with the applicable standards. The erosion control plan was evaluated for compliance with the CT DEP 2002 Guidelines for Soil Erosion & Sediment Control. Project withdrawn and not resubmitted.
- **Save our Shelton** – Review of development plans for large-scale mixed-use development on 120+ acre site on Bridgeport Avenue. Site contained core forest and high-quality wetland/watercourse systems. Review focused on stormwater management issues, particularly increased runoff volumes and pollutant loads to be generated by development and whether the proposed stormwater management proposal would adequately address the impacts of these two issues. Both the 2004 CT DEP Storm Water Quality Manual and the Shelton Inland Wetland and Stormwater Regulations were used to determine if the plans were compliant with the applicable standards. The erosion control plan was evaluated for compliance with the CT DEP 2002 Guidelines for Soil Erosion & Sediment Control. Project still in land use process.
- **Concerned Citizen Group - Roxbury, CT** – Review of proposed residential 12-lot subdivision on steeply sloping site with high quality wetlands and watercourses. Review of all aspects of civil engineering (site layout, grading, erosion/sediment control, stormwater management, stream crossing methodology) using the CT DEP 2004 Storm Water Quality Manual and CT DEP 2002 Guidelines for Soil Erosion and Sediment Control as well as the Town of Roxbury land use regulations and ordinances and evaluate impacts to wetlands and watercourses. Stormwater management system and erosion control plans were found to be inadequate to protect the high-quality wetlands and watercourses from adverse impacts by the Inland Wetlands Commission. Project denied by Inland Wetlands Commission citing findings from the Trinkaus Engineering, LLC review and other consultants.
- **Par Arbors, LLC – Bloomfield, CT –** Review of truck storage and dispatch center on agricultural land with numerous delineated inland wetland/watercourses on the site. Focus of review was on stormwater management and the adverse effects of increased pollutant loads and runoff volumes on wetland. Also review adequacy of erosion control plans. Provided testimony at two public hearings in front of Inland Wetlands Commission. Application to conduct regulated activities was denied by the commission in July 2019.
- **Town of Brooklyn –** Perform review of stormwater management design with regard to addressing water quality, runoff volume and downstream impacts of a 51-unit condominium project. Provide suggestions to design engineer to implement comments in review letter.
- **Friends of the Lake – Enfield, CT –** Perform third-party civil engineering review of proposed 819,000 square truck warehouse/distribution center with a focus on impacts of increased runoff volumes and water quality from a high-pollutant load site. Prepare written report and provide testimony in front of Planning and Zoning Commission.

- **Newtown Neighbors – Newtown, CT -** Perform third-party civil engineering review of proposed 340,000 square truck warehouse/distribution center with a focus on impacts of increased runoff volumes and water quality from a high-pollutant load site. Prepare written report and provide testimony in front of Planning and Zoning Commission.
- **Town of Mansfield – Mansfield, CT -** Perform third-party civil engineering review of alterations to existing car dealership to allow for the construction three new restaurants and retail space. Review encompassed all civil engineering aspects of plan. Prepare written report for submission to Inland Wetlands Agency.

## Ground Mounted Solar Arrays

- **Lodestar Energy – Winchester, CT:** Performed all civil engineering for an eight-acre solar array on 100-acre parcel. This work included the access driveway, two wetland crossings and the design of a stormwater management system for the project. Notable aspects include: All solar panels are considered impervious area, Soil Class for hydrologic model was dropped down by 1 to account for compaction by the movement of vehicles, grass swales with check dams were proposed on the two sides of the array to collect runoff and convey to a constructed wetland basin which met the requirements of the channel protection volume (DEP Manual). All designed comprehensive erosion and sedimentation control plan with multiple phases. The design of the erosion control plans and stormwater management plans exceed the requirements found in the CT DEP 2004 Storm Water Quality Manual and the CT DEP 2002 Guidelines for Soil Erosion and Sediment Control.

- **GRE – Waterford, CT:** Retained by Save-the-River, Save-the-Hills to review the erosion control plan and stormwater management plan on an environmentally sensitive site with runoff being directed to cold-water fishery streams which support native trout populations and drain to Niantic River. Provide civil engineering technical review in pre-filed testimony to Connecticut Siting Council and testify at Siting Council public hearing on application.

- **GRE – East Lyme, CT**: Retained by adjacent property owner to evaluate stormwater impacts from 30 acres ground mounted solar array in legal case for adverse impacts to wetlands and watercourses. Finding showed that runoff from the site was significantly under-estimated by the design professional as the panels were not considered impervious and the changes to soil conditions due to regrading were not considered in the design which resulted in the failure of the stormwater basins during construction as well as after the construction was complete.

- **Other Ground Mounted Solar Projects:** I have also reviewed the erosion and stormwater management plans for ground mounted arrays in Old Lyme, Brooklyn/Canterbury, New Milford, North Stonington, and East Hampton for compliance with the standards found in the CT DEP 2004 Storm Water Quality Manual. In all cases, the stormwater management designs were not in compliance with the DEP Manual.

## Commercial Site Plans

- **Cannondale Corporation Headquarters** - Bethel, Connecticut
- **Village Bank Headquarters** – Danbury, Connecticut
- **Newtown Hardware -** Newtown, Connecticut
- **Amicus Healthcare Living Centers –** Rocky Hill, Connecticut
- **Nathan Hale Office Building** – Fairfield, Connecticut
- **Ridgefield Recreation Center** – Ridgefield, Connecticut
- **Silver Spring Country Clubhouse & Pool house renovations -** Ridgefield, Connecticut

**Multi-family Projects**

- **64 Wooster Street –** 12-unit affordable housing project - Bethel, Connecticut
- **91 Wooster Street –** 13-unit affordable housing project – Bethel, Connecticut
- **49 Taylor Avenue –** 18-unit affordable housing project – Bethel, Connecticut
- **47 Shelly Road –** 9-unit affordable housing project served by private company and on-site sewage disposal systems – Bethel, Connecticut
- **1315 Washington Boulevard –** 180-unit affordable housing project – Stamford, Connecticut

## On-site sewage disposal systems

- **Candle Hill Mobile Home Park** – Design Subsurface Sewage Disposal Systems for individual mobile home units. New Milford, Connecticut.
- **Hemlock Hills Camp Resort** – Expansion of campground, design of gravity sanitary sewer and design of subsurface sewage disposal system to handle 4,800 gpd. Litchfield, Connecticut.
- **Old Field Condominiums** – long term inspection & reporting on the condition of multiple subsurface sewage disposal systems serving 40 unit condominium complex with design flows in excess of 15,000 gpd. Southbury, Connecticut.
- **Thorncrest Farm** – Design of on-site sewage disposal system to handle wastewater from milking operation. Goshen, Connecticut.
- **Silver Spring Country Club** – Design of multiple subsurface sewage disposal systems for private country club with average daily flow of 7,000 gpd during peak usage season.
- **Richter Park Golf Course** – Design subsurface sewage disposal system to replace existing failed system for golf club house and year round restaurant with average daily flow of just under 5,000 gpd.
- **Redding Country Club** - Performed soil testing to design a repair to an existing wastewater management system that was experiencing periodic effluent discharges during high use on very marginal soil conditions. Utilized oversized grease tanks for kitchen waste and septic tanks to increase the clarity of the effluent which was discharged by force main to the subsurface sewage disposal system increase the long term functionality of the system. Discharge rate 4,900 gpd.

## General Civil Engineering Projects

- **Montgomery Residence**, 10,000 sq.ft. residence with 2.5 acre pond, Redding, Connecticut.
- **Neils Different,** Design 1 acre pond, Ridgefield, Connecticut.
- **Anthony DeLuca**, Design 2 acre pond**,** Redding, Connecticut.
- **Barrett Cram**, Design 0.5 acre pond, Redding, Connecticut.
- **Jay & Eileen Walker Residence**, 27,000 sq.ft. residence, Ridgefield, Connecticut.

## Athletic Facilities

- **Kingdome – East Fishkill, NY,** Prepare comprehensive site plan for the construction of an air-supported structure covering 7.96 acres of land area. Project also includes the design of 303 parking spaces, two full size artificial turf baseball fields and three 54-80 artificial turf baseball fields. Designed all site grading and stormwater management facilities to address water quality volume, channel protection volume as well as peak rate attenuation for the 1-yr, 2-yr, 10-yr, 25-yr, 50-yr and 100-yr rainfall events.
- **Tiger Hollow – Ridgefield High School – Phase I**, Design and site artificial turf competition field and track complex. Design access road to provide access to new building containing locker rooms,

concessions, media room, and equipment storage areas. Design all utility connections and obtain local permits.

- **Tiger Hollow – Ridgefield High School – Phase II**, Prepare Conceptual Development plan for reconfiguration of existing athletic fields adjacent to the Tiger Hollow stadium.
- **Joel Barlow High School – Redding, CT**, Provide preliminary Master Plan on pro bono basis for reconfiguration and improvement of existing athletic fields at Joel Barlow in response to Falcon Pride stadium proposal. Plan was provided to Region 9 Board of Education for general discussion purposes.

COMMENTS OF THE TOWN OF EAST HAVEN ON THE TWEED NEW HAVEN AIRPORT NEPA DRAFT ENVIRONMENTAL ASSESSMENT RUNWAY 02-20 EXTENSION AND TERMINAL EXPANSION PROGRAM

Attachment D

VN Engineers, Inc. Report on Environmental Assessment dated April 27, 2023 with attached independent Tweed New Haven Airport Expansion Traffic Impact Study

**VN ENGINEERS, INC.**
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North Haven, CT 06473
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**TRAFFIC INFRASTRUCTURE PLANNING**
Tel: (203) 234-7862
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April 27, 2023

Johnathan Bodwell
Town Engineer
250 Main Street
East Haven, CT 06512

**Re: Review of NEPA Draft Environmental Assessment**
**Proposed "Tweed New Haven Airport"**

Dear Mr. Bodwell,

VN Engineers, Inc. (VNE) is pleased to provide this independent review of the NEPA Draft Environmental Assessment for the proposed "Tweed New Haven Airport" expansion in New Haven and East Haven, Connecticut. The project includes the extension of Runway 02-20 and construction of a new airport terminal, East Terminal, along with other associated facilities.

The following information was provided to VNE for review:

- NEPA Draft Environmental Assessment – Tweed New Haven Airport, prepared by McFarland Johnson, dated March 2023.

Overall, the traffic study has been performed in a professional manner in accordance with standard traffic engineering procedures, however, additional information and analysis should be considered to further demonstrate the impact of the project. Based on our review of the information provided, we offer the following comments:

**Appendix K: Traffic Study for New Terminal**

1. Traffic analysis was done for two separate time periods: the morning peak period between 9:15 am and 10:15 am and the midday peak period between 2:15 pm and 3:15 pm. The report specifies that the midday peak period was selected to provide the traffic impacts during the peak hour of highest trip generation to and from the airport and the morning peak hour was selected to provide traffic impacts during a commuter hour. Traditionally, when the goal is to evaluate the effects of a proposed development, capacity analysis is done for the most conservative scenario to gauge the impact on the existing traffic peak periods. The most conservative scenario demonstrates the worst traffic conditions that would result from the existing peak hour traffic along the roadway network plus the generated traffic from a proposed development. The evening peak hour often shows higher existing traffic volumes than the morning peak hour and that is substantiated from the traffic counts provided in Appendix A – Traffic Count Data collection. At all intersections in the study area, the existing evening peak hour volumes are higher than those of the morning peak hour. Figure 3-9 within the report shows almost 500 site generated trips during the evening peak hour. Even though the airport generated peak traffic does not occur during the evening, it is important to analyze how that airport generated traffic would affect the overall capacity and flow throughout the roadways during the existing heavy evening commute peak.

In April 2023, VN Engineers conducted a separate traffic study to determine how the proposed expansion of the Tweed New Haven Airport will impact the local traffic and quality of life for East Haven residents. Turning movement and vehicle classification counts were conducted for this study between Wednesday, February 22, 2023, and Tuesday, March 7, 2023, during the morning and evening peak periods. This data also shows that evening peak hour experienced more traffic compared to morning peak hour. Appendix A includes the traffic impact study report prepared by VN Engineers. Generally, at locations that experience poor operations, the operations are worse with higher delays and longer 95$^{th}$ percentile queues during the evening peak analysis than those of the morning peak analysis. Despite the site generated volumes from the airport, the evening peak analysis should be included within the EA to show the ultimate effect the airport traffic will have on the current peak commuter hour within the study area.

2. It should also be noted that the Town of East Haven is partially a seasonal town with the route to the town beach running through the study area. Traffic counts used within the EA document were collected during December 2021. It should be recognized that traffic patterns during the summer may differ from those of other seasons.

3. The study area for the traffic analysis includes intersections primarily along state routes. Traffic generated to and from airport may be routed on local roads by GPS software to avoid delays. This report does not evaluate the traffic impact on local roads. Additionally, the following intersections would be important to evaluate as part of this study:
    a. Hemingway Ave (Route 142) at Coe Ave and Short Beach Road (Route 142): Based on the trip distribution, all of the site generated traffic will travel through this intersection. Furthermore, this intersection is very prone to significant flooding and the Town of East Haven often works with the Connecticut DOT to close this intersection due to flooding from the nearby marsh land even without a major storm event. If this intersection is impassable, all site generated traffic will need to be rerouted around it. Appendix B includes some recent flooding at this intersection documented by the East Haven Fire Department and the Department of Public Works. A study done by South Central Regional Council of Governments (SCRCOG) in 2012 also identifies the environmental and flooding issues at this intersection. Please refer to Appendix C for this study. Further documentation of the flooding issues at this intersection are available here: (https://easthavenct-my.sharepoint.com/:f:/g/personal/thedley_easthaven-ct_gov/Ekn-x4lN6RNMuemyGY8tWQsBQ85UQWVXLVAq3kAjyHCfvg?e=2MorBw)

    b. Frontage Road (Route 1) at Forbes Place: All traffic heading towards I-95 southbound or from I-95 northbound towards the site will travel through this intersection. From the trip distribution, it appears that 75% of the generated traffic will flow through this intersection. This intersection was part of the study area covered by the traffic study conducted by VN Engineers. Analysis for this intersection shows that currently the northbound approach operates at LOS F during the morning peak period. Additionally, during both peak hours, the 95th percentile exceeds the available storage length. As a high percentage of trip generated traffic will travel through this intersection, which already experiences high volumes and poor operation, analysis of this intersection should be included within the EA to properly demonstrate the effect the airport generated traffic will have throughout the Town of East Haven.

    c. Forbes Place at Kimberly Ave: This local unsignalized intersection is highly trafficked by vehicles traveling through downtown East Haven towards Route 1 and I-95 southbound. GPS software may route generated traffic through this intersection to avoid traffic further East on Route 1. This intersection also experiences a high number

of crashes and could benefit from additional analysis. Analysis by VN Engineers show that the southbound approach operates at a LOS F during the existing evening peak-hour with the overall intersection operating at a LOS F. From the analysis results within the VN Engineers' Traffic Impact Study, along with field visit observations, this is an intersection that experiences high delays and queues throughout multiple times of the day. It also is one of the top three intersections within VN Engineers' study that experiences the most crashes throughout the study area. Proper evaluation of this intersection is vital before allowing additional traffic to further impact the operations and safety here.

4. Table 5-2 in the report summarizes the study area crashes by crash type. The fatal injury column identifies three fatal crashes within the study period (2016-2020). The report does not discuss the nature of these fatal crashes or what factors contributed to these crashes. Local road fatalities are rare in nature and deserve proper investigation so that the contributing factors can be mitigated as best as possible.

5. Table 5-2 does not include any pedestrian or bicycle related crashes. The report does not identify the data source, however, from our experience, the UConn Crash Data Repository identifies pedestrian and bicycle related crashes as "Not Applicable" under the "Manner of Collision" column. Without further explanation, it is not possible to make any assumption of whether that is the case here. Pedestrian and bicycle crashes are often under reported and pedestrian/bicycle injuries have more serious consequences compared to motor vehicle injury. Proper investigation into any pedestrian and bicycle related crashes would be important for evaluating the safety within the study area especially since the expansion is predicted to increase the traffic throughout the area. Within the traffic impact study, VN Engineers identified eleven pedestrian and bicyclist injury within the study area between January 1, 2019, and December 31, 2022 (data from the year 2020 was excluded from analysis due to the pandemic disrupting typical traffic patterns).

6. Table 5-3 summarizes the Level of Service for the existing, no action and proposed conditions. Table 6-1 summarizes the Level of Service for the no action, proposed action no improvements, and proposed action with improvements. These summary tables only include the overall level of service. While there are more detailed tables provided in Appendix H, it is typically more valuable to include discussion of the delay time and 95$^{th}$ percentile queues within the report. This information is helpful in assessing the extent of the impacts to the various movements analyzed. Below are a few examples of impacts that warrant additional discussion.
    a. At Intersection 7 (Route 1 at Hemingway Avenue (Route 142)), the delay for the northbound left-turning lane group increases by 30.8 seconds between the no action and proposed action midday scenarios. That is a significant increase in delay for that lane group. However, that impact is not thoroughly covered within the report since the overall intersection has a LOS C.

    b. At Intersection 8 (Hemingway Avenue (Route 142) at Main Street), the delay for the northbound left-turning lane group increases by 62.8 seconds between the no action and proposed action midday scenarios. That is a significant increase in delay for that lane group and results in almost a 200' increase in the 95$^{th}$ percentile queue that exceeds that available storage. However, that impact is not thoroughly covered within the report since the overall intersection has a LOS D.

Discussion of these impacts within the report provides a more transparent summary of the impact that the project will have on the study area. Additionally, it provides more detail into areas that would require further mitigation even if the overall intersection LOS is acceptable.

7. Under the impact summary, it is recommended that a signal be installed at the intersection of Coe Avenue with Proto Drive to improve the level of service. This will need to be a non-negotiable inclusion of the project. Without this signalization, the approach of Proto Drive will experience a delay of approximately 18 minutes according to the Synchro model, which would be unacceptable. This signalization improvement must be included as part of the project. Based on the full details of the delays and the LOS, additional detailed mitigations or improvements at other locations would also be highly valuable under this project beyond the potential strategies identified in Section 6.

8. In addition to providing signalization at the intersection of Coe Avenue at Proto Drive, the roadway of Proto Drive will need to be improved from its existing condition to handle the increased traffic demand from the airport expansion. The existing pavement is 30' wide and in poor condition. There are not any pavement markings along Proto Drive, except for the stop bar at the intersection. Furthermore, large trucks have been observed to frequently park on the roadway and pedestrians have been observed walking in the road since there are no sidewalks along the roadway. Since Proto Drive leads to an industrial area, the traffic turning from Coe Avenue on to Proto has a high percentage of heavy vehicles. It has been observed that these large vehicles have difficulty maintaining their lane while maneuvering the turn. If there is to be increased traffic on Proto Drive, the turning radius at the intersection will need to be investigated. Any intersection geometry improvements will need to accommodate these large truck turning movements as well as the added airport traffic. These additional improvements to Proto Drive should have been included in the Study as they will be essential under this project.

We hope that this letter is useful in your review for the proposed project. If you have any questions, please do not hesitate to contact us.

Sincerely,

Nancy Dutta, Ph.D., P.E., PTOE
Traffic Engineer

Sydney Brooks LaLuna, P.E.
Project Engineer

List of Appendix

Appendix A : Tweed New Haven Airport Expansion Traffic Impact Study, April 2023.

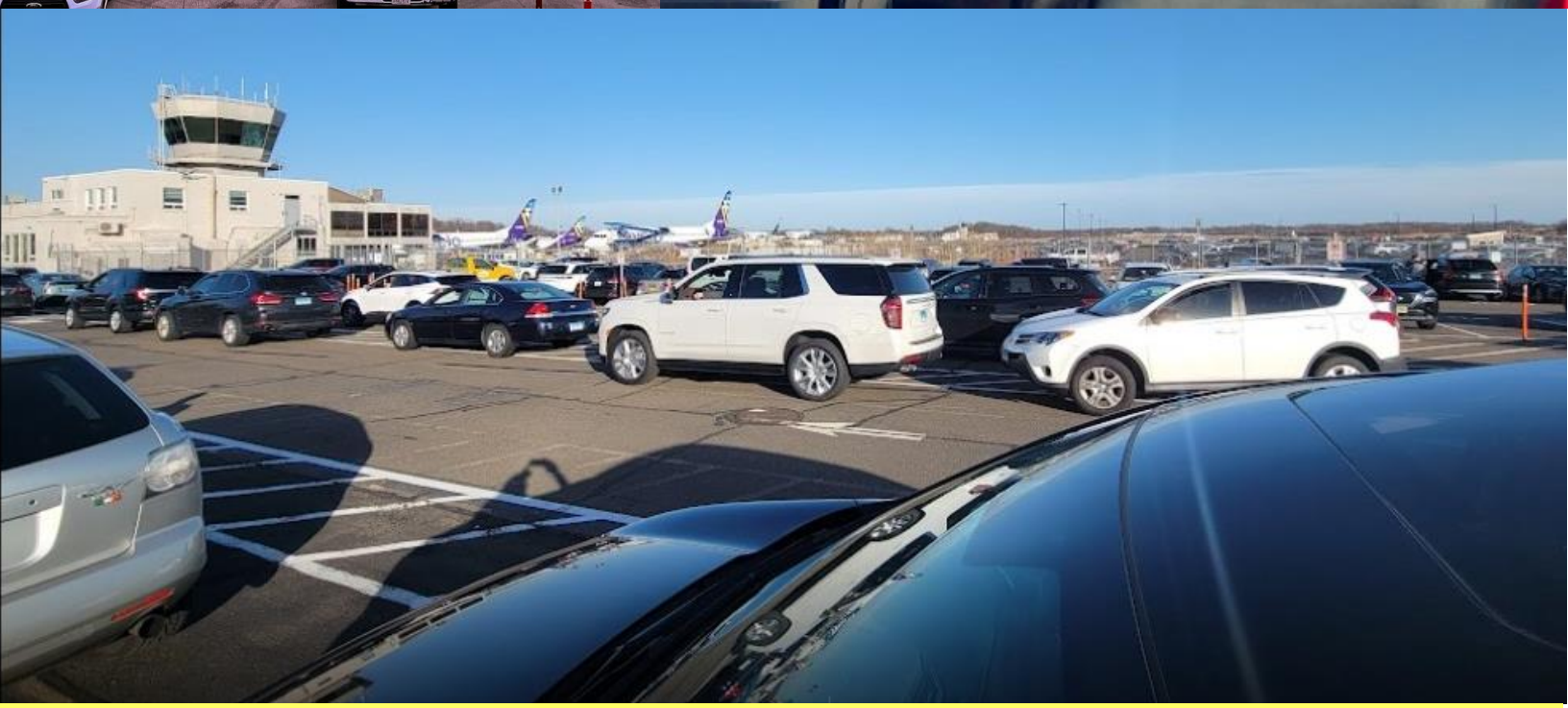
Appendix B : Flooding at Hemingway Avenue, Coe Avenue and Short Beach Road Intersection, March 2023.

Appendix C : Hemingway Coe Avenue Corridor Study, June 2012.

# Appendix A

# Tweed New Haven Airport Expansion

# Traffic Impact Study

# Tweed New Haven Airport Expansion Traffic Impact Study

EAST HAVEN
CONNECTICUT

# TRAFFIC IMPACT STUDY

# TWEED NEW HAVEN AIRPORT EXPANSION

# EAST HAVEN, CONNECTICUT

## APRIL 2023

**Prepared By:**
**VN Engineers, Inc.**
116 Washington Avenue
North Haven, CT 06473
(203) 234-7862

**Prepared for:**
**Town of East Haven**
250 Main Street
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# 1.0 SCOPE

The Town of East Haven is a community of approximately 27,800 residents located in New Haven County. The Tweed New Haven Airport is set in both the City of New Haven and the Town of East Haven. According to the Tweed-New Haven Airport Master Plan published in October 2021, an expansion to the airport has been proposed that includes extending its runway by more than 1,000 feet and construction of a new four-to-six gate terminal on the East Haven side. This report was prepared to identify the impact the Tweed New Haven Airport will have on vehicular traffic and safety in Town of East Haven. Safety and capacity analyses were performed for existing and future conditions at each of the eighteen study area intersections to determine how the proposed expansion of the Tweed New Haven Airport will impact the local traffic and quality of life for East Haven residents. This study focuses on the 2023 existing conditions and the 2029 proposed action year.

# 2.0 INTRODUCTION

## 2.1 STUDY AREA

The study area includes the eighteen intersections listed in **Table 1**. The traffic signal plans used in the analysis for the existing, no-build, and build scenarios were provided by the Connecticut Department of Transportation and the Town of East Haven. **Figure 1** shows the study intersections analyzed in this report.

**Table 1: Study Intersections**

| Site No. | Location | Signal No. |
|---|---|---|
| 1 | High Street (Route 100) and the I-95 Southbound Off-Ramp (Exit 52) | #043-237 |
| 2 | High Street (Route 100), Laurel Street, and the I-95 NB On-Ramp | #043-222 |
| 3 | High Street (Route 100) and Kimberly Avenue (Route 735) | #043-222 |
| 4 | High Street (Route 100) and Messina Drive | #043-211 |
| 5 | Main Street, Messina Drive and Kirkham Avenue | #043-XXX |
| 6 | High Street and Main Street (Route 100) and Thompson Avenue | #043-221 |
| 7 | Saltonstall Parkway (Route 1), Hemingway Avenue (Route 142), and Estelle Road | #043-209 |
| 8 | Hemingway Avenue (Route 142) and Main Street (Route 100) | #043-212 |
| 9 | Hemingway Avenue (Route 142) and Dodge Avenue | #043-205 |
| 10 | Coe Avenue (Route 337) and Proto Drive | Unsignalized |
| 11 | Thompson Avenue and Dodge Avenue | Unsignalized |
| 12 | Hemingway Avenue and Short Beach Road (Route 142) and Coe Avenue (Route 337) | #043-225 |
| 13 | Hemingway Avenue (Route 142) and Messina Drive | Unsignalized |
| 14 | Coe Avenue (Route 337) and Silver Sands Road (Route 337) | #043-229 |
| 15 | Silver Sands Road (Route 337), South End Road (Route 337), and Minor Road | Unsignalized |
| 16 | Forbes Place and Kimberly Avenue (Route 735) | Unsignalized |
| 17 | Main Street, Forbes Place, and Bradley Avenue | #043-103 |
| 18 | Frontage Road (Route 1) at Forbes Place | #043-203 |

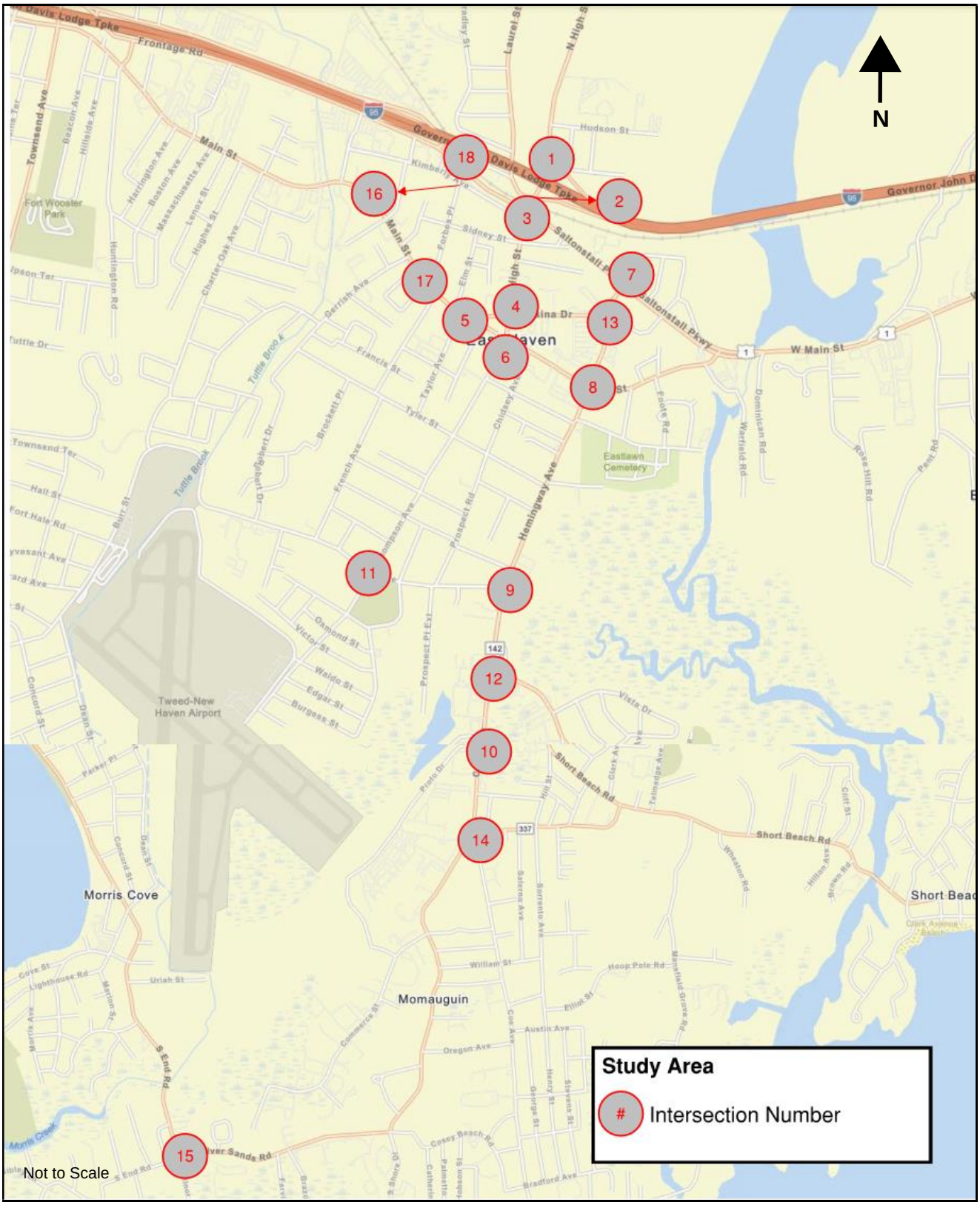



**Figure 1: Study Area**

## 2.2 ENVIRONMENTAL JUSTICE

Each year, the Connecticut Department of Economy and Community Development (DECD) publishes a list of 25 municipalities that are identified as "Distressed Municipalities", This ranking is based on 1) Level of Per Capita Income, 2) percent of population with high school degree or higher, and 3) Per Capita Adjusted Equalized Net Grand List (AENGL). The top 25 towns with the highest total scores are designated distressed municipalities. According to the list published by DECD in 2022, the Town of East Haven ranks 17 in the list of distressed communities as shown in **Figure 2.**

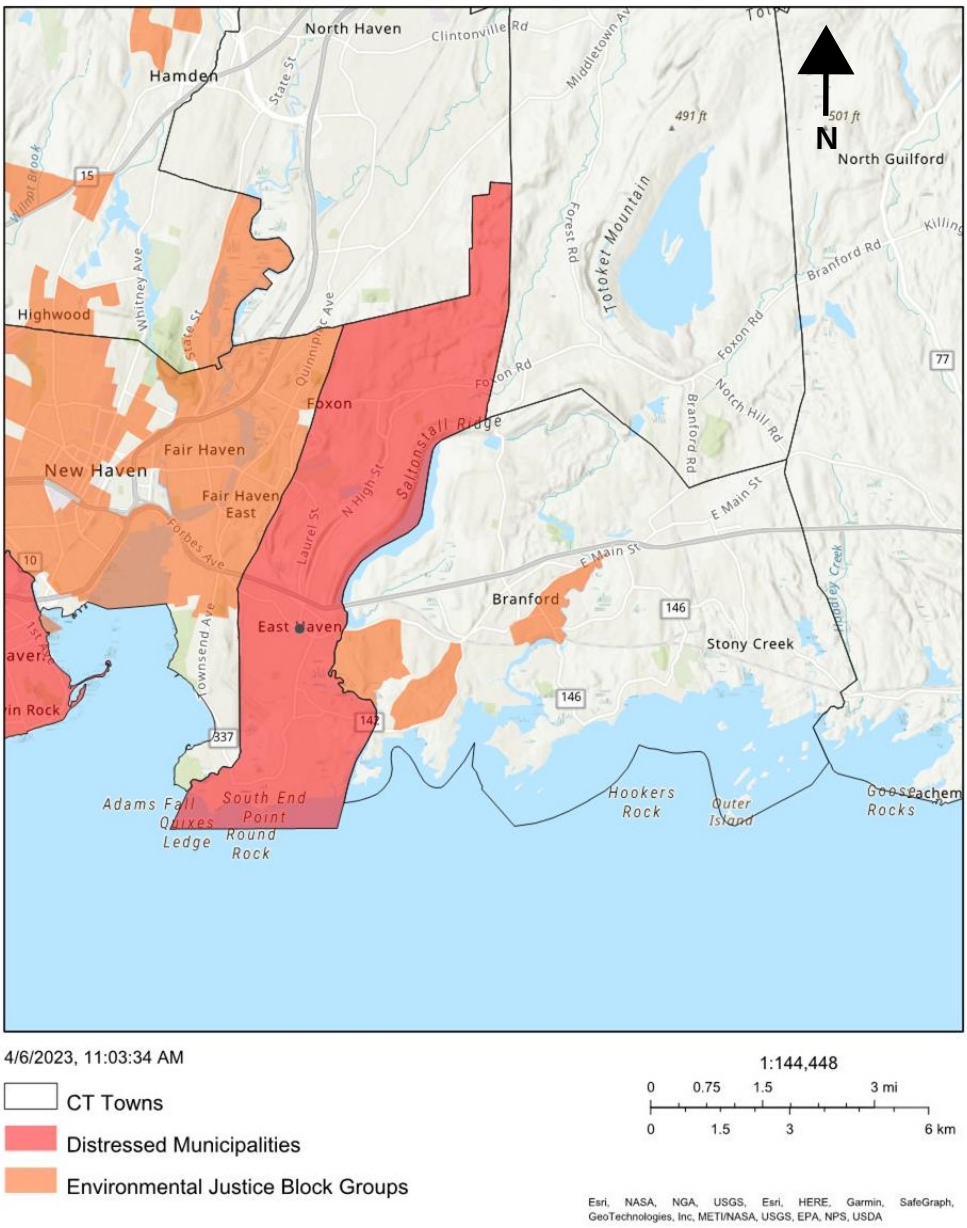



**Figure 2: CT 2022 Environmental Justice Communities (Source: CT DEEP)**

## 2.3 FLOODING AND HURRICANE SURGE

The Connecticut coastline is susceptible to flooding from both river floods and coastal storm effects, with many permanent residents and additional seasonal residents. As a coastal community, East Haven is subject to these forces. Much of the southern and eastern sections of the Town are within Flood Hazard Areas as shown in **Figure 3**.

The whole study area and the airport falls under the areas expected to be affected by tidal flood, coastal storm or hurricane related flooding in some capacity. There are also multiple medical facilities and storm shelters within the study area that can be accessed via Hemingway Ave, Main Street and High Street. These streets are also expected to carry the additional traffic generated by the airport expansion.

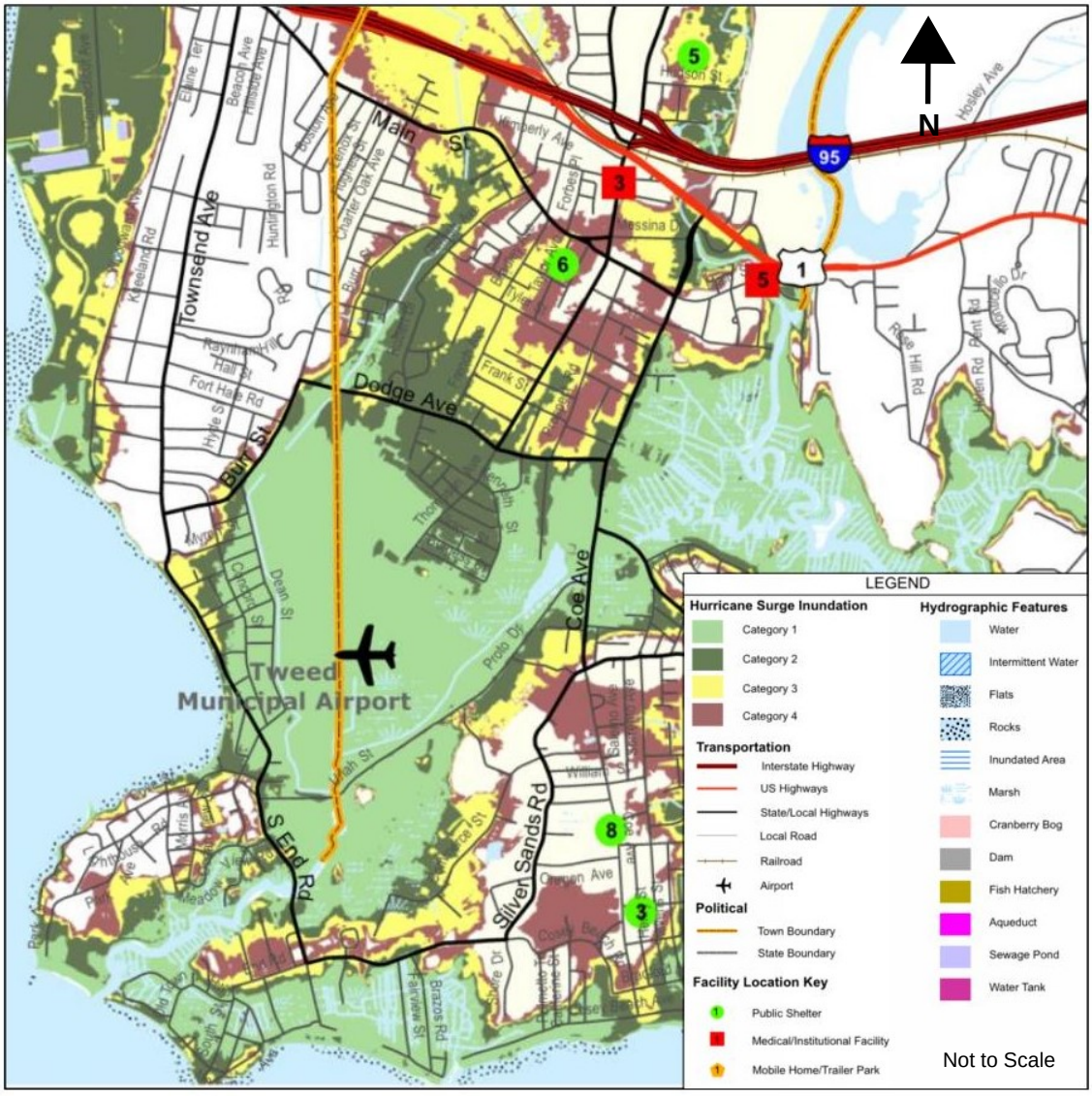



**Figure 3: Hurricane Surge Inundation Mapping (Source: CT Division of Emergency Management)**

## 3.0 PEAK-HOUR VOLUMES

Turning movement and vehicle classification counts were conducted by VN Engineers, Inc. for all eighteen intersections between Wednesday, February 22, 2023, and Tuesday, March 7, 2023, during the following periods:

- 7:00 a.m. to 9:00 a.m.
- 4:00 p.m. to 6:00 p.m.

The peak-hours varied between the eighteen study intersections. The majority of intersections have the morning peak-hour from 7:30 a.m. to 8:30 a.m. and the evening peak-hour from 4:15 p.m. to 5:15 p.m. The traffic count data collected as part of this project is included in **Appendix A**.

As part of the analysis, the volumes between directly adjacent intersections were balanced proportionately. The volume projections for the 2029 traffic volumes were calculated by applying a growth rate of one percent per year to the existing 2023 traffic volumes. No other major traffic generator projects have been identified in the area. The 2023 existing traffic volumes are presented in **Appendix B**. The projected no-build 2029 peak-hour volumes are presented in **Appendix C.** The trip distribution patterns, and the site generated trips are presented in **Appendix D**. The projected full-site build 2029 peak-hour volumes are presented in **Appendix E.** The existing signal plans and timing patterns used for this study were obtained from the Connecticut Department of Transportation and the Town of East Haven.

## 4.0 LEVELS OF SERVICE AND QUEUE ANALYSES

This study uses established procedures for estimating traffic capacity and queue lengths at each of the study intersections. The capacity analysis determined a Level of Service (LOS) for each intersection's lane groups using an alphanumeric rating system that is similar to the common academic grading methodology (A, B, C, D, E, and F). It should be noted that LOS C or better is commonly considered to be a "desirable" traffic operation, while LOS D is commonly considered to be "acceptable" in urban areas. More information about the level of service for signalized and unsignalized intersections is provided in **Appendix K**.

A queuing evaluation was also performed for each lane group at the study intersections to evaluate the available storage to accommodate the anticipated traffic demand. The 95$^{th}$ percentile queue length, which represents the queue length that only has a five percent probability of being exceeded during the peak-hour, was compared to the available lane storage to identify areas where queues may potentially block traffic operation in other lanes. The capacity analysis and queuing evaluation was performed using Synchro 11 Traffic Signal Coordination Software (Build 909, Rev. 20).

## 5.0 EXISTING CONDITIONS

The study area includes 18 intersections in southern East Haven, where the airport site-generated traffic is expected to travel through. These intersections were selected from area observations and coordination with the Town of East Haven. The study area includes multiple intersections along Route 100, Route 142, Route 337 and Route 1. Route 100 (Main Street and High Street) is a minor arterial that connects downtown East Haven with entrance and exit ramps for I-95 NB. Route 142 is a minor arterial which runs through downtown East Haven from Route 1 to the bordering Branford town line. Route 337 is a major arterial running from the turn of Route 142 onto Short Beach Road to the bordering New Haven town line. Route 1 is a U.S. Route and principal arterial running parallel to I-95 through East Haven before continuing into New Haven and Branford.

**Table 2** presents the existing lane configuration, roadway classification, approach grades, and speed limits, and pedestrian infrastructure of each intersection. An observational field visit was conducted for all intersections on March 31st, 2023, to confirm and observe the existing conditions.

The results of the existing conditions capacity analysis, which includes the levels of service (LOS), volume to capacity (v/c) ratios, and 95th percentile queue lengths, are provided in **Table 3**. The available storage represents either the length of a turn-lane, the distance to an adjacent major intersection, or the distance to the gore for a freeway off-ramp, as appropriate. The queue lengths were calculated assuming an average vehicle length of 25 feet. The full details of the existing conditions analysis are included in **Appendix F**.

The existing conditions analysis presented in **Table 3** shows that a majority of approaches and overall intersections operate at acceptable levels of service with adequate storage for queuing with the exception of the following approaches and intersections:

- Intersection 2: High Street (Route 100) & I-95 NB On-Ramp (Exit 52)
    - The northbound approach operates at a LOS E with the through movement operating at a LOS F for both morning and evening peak-hours. The 95th percentile queues for the through movement exceed the available storage for both periods.
    - The southbound approach operates at a LOS E with both movement groups operating at a LOS E for the morning peak-hour and the through movement operating at a LOS F for the evening peak-hour.
    - Overall, this intersection operates at a LOS E for both morning and evening peak-hours.
- Intersection 3: High Street (Route 100) & Kimberly Avenue
    - The northbound approach operates at a LOS F for both peak-hours.
    - The southbound through movement operates at a LOS E during the evening peak-hour with the queue exceeding the available storage.

    - Overall, the intersection operates at a LOS E for the morning peak-hour and a LOS F for the evening peak.

- Intersection 7: Hemingway Avenue (Route 142) & Saltonstall Parkway (Route 1)
    - The eastbound left-turn operates at a LOS E for both peak periods with the 95$^{th}$ percentile queue exceeding the available storage length in the evening.
    - The westbound left-turn also operates at a LOS E for both peak periods.
- Intersection 12: Hemingway Avenue and Short Beach Road (Route 142) at Coe Avenue (Route 337)
    - The 95$^{th}$ percentile queue for the southbound left-turn during evening peak hours exceeds the available storage length.
- Intersection 13: Hemingway Avenue & Messina Drive
    - The eastbound left-turn operates at a LOS F during the evening peak-hour.
- Intersection 16: Kimberly Avenue & Forbes Place
    - The southbound approach operates at a LOS F during the evening peak-hour with the overall intersection operating at a LOS F.
    - The southbound approach of this intersection was required to be modeled as a yield approach because the Highway Capacity Manual does not support analysis of a three-way stop, one-way free intersection.
- Intersection 18: Frontage Road (Route 1) & Forbes Place
    - The northbound approach operates at a LOS F during the morning peak-hour. During both peak hours the 95$^{th}$ percentile exceeds the available storage length.

**Table 2: Study Area Existing Conditions**

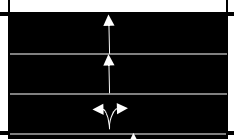
| Intersection No. | Direction | Roadway Name | Posted Speed Limit (mph) | Roadway Classification | Lane Configuration | Grade | Pedestrian Infrastucture | Signalized? |
|---|---|---|---|---|---|---|---|---|
| 1 | NB | High Street (Route 100) | 30 | Minor Arterial |  | -1% | Sidewalk along right-hand side of NB approach which continues onto left-hand side of SB approach.Crosswalk spans across WB approach with accompanying ramps and tactile warning stirps at each end | Yes |
| | SB | High Street (Route 100) | 30 | Minor Arterial | | 1% | | |
| | WB | I-95 SB Off-Ramp (Exit 52) | - | Interstate | | -1% | | |
| 2 | NB | High Street (Route 100) | 30 | Minor Arterial | | 6% | Sidewalks along both sides of NB approach, and left-hand side of SB approach. Crosswalks span across NB and WB approaches with accompanying ramps at each end. In service pedestrian signal push buttons located at each each end of crosswalks. Tactile warning strips located at bopth sides of WB approach and right-hand side of NB approach. | Yes |
| | SB | High Street (Route 100) | 30 | Minor Arterial | | 3% | | |
| | EB | Laurel Street | - | Major Collector | | 2% | | |
| | WB | I-95 NB On-Ramp | - | Minor Arterial | | -2% | | |
| 3 | NB | High Street (Route 100) | 30 | Minor Arterial | | 2% | Sidewalks along both sides of NB and SB approaches, and along right-hand side of EB approach. Crosswalks span across NB and WB approaches with with accompanying ramps at each end. In service pedestrian signal push buttons located at each end of crosswalks. Tactile warning strip located at right-hand corner of NB approach. | Yes |
| | SB | High Street (Route 100) | 30 | Minor Arterial | | -5% | | |
| | EB | Kimberly Avenue | 25 | Minor Arterial | | 3% | | |
| 4 | NB | High Street (Route 100) | 30 | Minor Arterial | | -1% | Sidewalks along both sides of all 4 approaches. Crosswalks span across all 4 approaches with with accompanying ramps at each end. In service pedestrian sign push buttons and tactile warning strips located at each end of crosswalks. | Yes |
| | SB | High Street (Route 100) | 30 | Minor Arterial | | -1% | | |
| | EB | Messina Drive | 25 | Minor Arterial | | 1% | | |
| | WB | Messina Drive | 25 | Minor Arterial | | -1% | | |
| 5 | NB | Kirkham Drive | - | Local | | At Grade | Sidewalks along both sides of all 4 approaches. Crosswalks span across all 4 approaches with with accompanying ramps at each end. In service pedestrian sign push buttons and tactile warning strips located at each end of crosswalks. | Yes |
| | SB | Messina Drive | 25 | Minor Arterial | | -1% | | |
| | EB | Main Street | 25 | Minor Arterial | | 1% | | |
| | WB | Main Street | 25 | Minor Arterial | | -1% | | |
| 6 | NB | Thompson Avenue | - | Minor Arterial | | -1% | Sidewalks along both sides of all 4 approaches. Crosswalks span across all 4 approaches with with accompanying ramps at each end. In service pedestrian sign push buttons and tactile warning strips located at each end of crosswalks. | Yes |
| | SB | High Street (Route 100) | 30 | Minor Arterial | | 1% | | |
| | EB | Main Street | 25 | Minor Arterial | | 1% | | |
| | WB | Main Street (Route 100) | 25 | Minor Arterial | | -1% | | |
| 7 | NB | Hemingway Avenue (Route 142) | 30 | Minor Arterial | | 1% | Sidewalks along both sides of SB, Eb, and WB approaches, and right-hand side of NB approach. Crosswalks span across EB and WB approaches with accompanying ramps at each end. In service pedestrian signal push buttons and tactile warning strips located at each end of crosswalks. | Yes |
| | SB | Estelle Road | - | Local | | -2% | | |
| | EB | Saltonstall Parkway (Route 1) | 40 | Principal Arterial | | -1% | | |
| | WB | Saltonstall Parkway (Route 1) | 40 | Principal Arterial | | 1% | | |
| 8 | NB | Hemingway Avenue (Route 142) | 35 | Minor Arterial | | -1% | Sidewalks along both sides of all 4 approaches. Crosswalks span across all 4 approaches with with accompanying ramps at each end. In service pedestrian sign push buttons and tactile warning strips located at each end of crosswalks. | Yes |
| | SB | Hemingway Avenue (Route 142) | 30 | Minor Arterial | | 3% | | |
| | EB | Main Street (Route 100) | 25 | Minor Arterial | | 1% | | |
| | WB | Main Street (Route 100) | 25 | Minor Arterial | | -2% | | |
| 9 | NB | Hemingway Avenue (Route 142) | 35 | Minor Arterial | | At Grade | Sidewalks along both sides NB, SB, and EB approaches. Crosswalks span across SB and EB approaches with accompanying ramps at each end. In service pedestrian signal push buttons and tactile warning strips located at each end of crosswalks. | Yes |
| | SB | Hemingway Avenue (Route 142) | 35 | Minor Arterial | | 1% | | |
| | EB | Dodge Avenue | 25 | Minor Arterial | | -1% | | |
| | WB | Sunfield Apartments Parking Lot | - | - | | - | | |
| 10 | NB | Coe Avenue (Route 337) | 35 | Minor Arterial | | At Grade | Sidewalk along left-hand side of NB approach which continues onto right-hand side of SB approach. Ramps located at each corner of WB approach. | No |
| | SB | Coe Avenue (Route 337) | 35 | Minor Arterial | | -1% | | |
| | WB | Proto Drive | - | - | | -1% | | |
| 11 | NB | Thompson Avenue | 25 | Local | | 1% | Sidewalks along both sides of all 4 approaches. Crosswalks span across all 4 approaches, with accompanying ramps at each end. Tactile warning strips located right-hand corners of EB and WB approaches. | No |
| | SB | Thompson Avenue | 25 | Minor Arterial | | -1% | | |
| | EB | Dodge Avenue | 25 | Minor Arterial | | At Grade | | |
| | WB | Dodge Avenue | 25 | Minor Arterial | | At Grade | | |
| 12 | NB | Coe Avenue (Route 337) | 35 | Minor Arterial | | -1% | Sidewalks along both ends of NB, SB, and WB approaches. Crosswalks span across all 4 approaches with accompanying ramps at each corner. In service pedestrian signal push buttons located at each end of crosswalks. | Yes |
| | SB | Hemingway Avenue (Route 142) | 35 | Minor Arterial | | -1% | | |
| | EB | South Shore Plaza Outlet | - | - | | -1% | | |
| | WB | Short Beach Road (Route 142) | 35 | Minor Arterial | | -1% | | |
| 13 | NB | Hemingway Avenue (Route 142) | 30 | Minor Arterial | | 1% | Sidewalks along both sides of SB and WB approaches, and along the right-hand side of NB approach which contiues onto left-hand side of SB approach. Ramps and tactile warning strips located at right-hand sides of NB and WB approaches. | Yes |
| | SB | Hemingway Avenue (Route 142) | 30 | Minor Arterial | | -1% | | |
| | WB | Messina Drive | 25 | Minor Arterial | | -1% | | |
| 14 | NB | Coe Avenue | - | Major Collector | | 1% | Out of service pedestrian signal push buttons at both corners of WB approach and on the right-hand side of EB approach. Ramps and tatile warning strips are located at both corners of EB approach. | Yes |
| | SB | Coe Avenue (Route 337) | 35 | Minor Arterial | | 3% | | |
| | EB | Silver Sands Road (Route 337) | 25 | Major Collector | | -2% | | |
| | WB | Silver Sands Road | 25 | Minor Collector | | 1% | | |
| 15 | NB | Minor Road | - | Local | | 3% | - | No |
| | SB | South End Road (Route 337) | 25 | Minor Arterial | | -1% | | |
| | EB | South End Road | 25 | Major Collector | | 1% | | |
| | WB | Silver Sands Road (Route 337) | 25 | Major Collector | | 1% | | |
| 16 | NB | Forbes Place | 25 | Major Collector | | 1% | Ramps at both ends of NB approach | No |
| | SB | Forbes Place | 25 | Minor Arterial | | -3% | | |
| | EB | Kimberly Avenue | 25 | Minor Collector | | 1% | | |
| | WB | Kimberly Avenue | 25 | Minor Arterial | | -1% | | |
| 17 | NB | Bradley Avenue | 25 | Local | | 1% | Sidewalks along both sides of each approach. Ramps at each corner of intersection. In service pedestrian signal push buttons at each coner of intersection. Crosswalks span across NB, EB, and WB approaches. | Yes |
| | SB | Forbes Place | 25 | Major Collector | | -3% | | |
| | EB | Main Street | 25 | Minor Arterial | | 2% | | |
| | WB | Main Street | 25 | Minor Arterial | | 2% | | |
| 18 | NB | Forbes Place | 25 | Minor Arterial | | 1% | - | Yes |
| | EB | Frontage Road (Route 1) | 35 | Principal Arterial | | 1% | | |
| | WB | Saltonstall Parkway (Route 1) | 35 | Principal Arterial | | 1% | | |

**Table 3: Existing 2023 Capacity Analysis Results**

| | | | AM | | | | PM | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Int. Name | Int. # | Lane Group | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Available Storage (ft) |
| High Street (Rt 100) & I-95 SB Off-Ramp (Exit 52) | 1 | WB | 47.9 | D | 0.77 | 210 | 41.0 | D | 0.86 | 348 | 1000 |
| | | NB | 16.7 | B | 0.38 | m184 | 31.1 | C | 0.49 | m209 | 425 |
| | | SB | 10.1 | B | 0.56 | 327 | 20.8 | C | 0.63 | 353 | 400 |
| | | Overall | 19.0 | B | - | - | 30.5 | C | - | - | - |
| High Street (Rt 100) & I-95 NB On-Ramp (Exit 52) | 2 | EB | 24.7 | C | 0.64 | 203 | 13.3 | B | 0.33 | 114 | 400 |
| | | NB | 77.2 | E | - | - | 63.3 | E | - | - | - |
| | | NBL | 12.1 | B | 0.27 | m30 | 15.6 | B | 0.57 | m72 | 200 |
| | | NBT | 88.3 | F | 1.04 | m#282 | 81.0 | F | 1.03 | m295 | 200 |
| | | SB | 69.9 | E | - | - | 77.0 | E | - | - | - |
| | | SBL | 59.1 | E | 0.71 | #170 | 51.0 | D | 0.49 | m95 | 310 |
| | | SBT | 71.9 | E | 0.94 | #356 | 80.1 | F | 1.01 | #388 | 400 |
| | | Overall | 62.4 | E | - | - | 63.4 | E | - | - | - |
| High Street (Rt 100) & Kimberly Avenue | 3 | EB | 23.9 | C | 0.41 | 183 | 28.6 | C | 0.60 | 310 | 850 |
| | | NB | 126.2 | F | 1.16 | #531 | 239.8 | F | 1.44 | #566 | 1000 |
| | | SB | 31.8 | C | - | - | 52.1 | D | - | - | - |
| | | SBT | 50.5 | D | 0.86 | m128 | 71.6 | E | 0.97 | m#444 | 185 |
| | | SBR | 2.5 | A | 0.45 | m0 | 1.6 | A | 0.35 | m0 | 185 |
| | | Overall | 59.3 | E | - | - | 104.7 | F | - | | - |
| High Street (Rt 100) & Messina Drive | 4 | EB | 17.0 | B | 0.13 | 28 | 17.6 | B | 0.13 | 30 | 250 |
| | | WB | 7.8 | A | - | - | 10.2 | B | - | - | - |
| | | WBT | 17.1 | B | 0.10 | 34 | 18.8 | B | 0.21 | 63 | 670 |
| | | WBR | 5.4 | A | 0.33 | 40 | 5.5 | A | 0.33 | 40 | 670 |
| | | NB | 10.1 | B | 0.26 | 71 | 10.2 | B | - | - | - |
| | | NBL | - | - | - | - | 9.0 | A | 0.01 | 5 | 195 |
| | | NBT | 10.1 | B | 0.26 | 71 | 10.2 | B | 0.29 | 85 | 195 |
| | | SB | 13.0 | B | 0.46 | 86 | 13.6 | B | 0.49 | 99 | 160 |
| | | Overall | 11.7 | B | - | - | 12.4 | B | - | - | - |
| Main Street & Messina Drive | 5 | EB | 19.2 | B | 0.37 | 95 | 8.9 | A | 0.30 | 99 | 250 |
| | | WB | 18.1 | B | - | - | 7.0 | A | - | - | - |
| | | WBL | 14.8 | B | 0.01 | 6 | 5.1 | A | 0.04 | 13 | 230 |
| | | WBT | 18.2 | B | 0.33 | 91 | 7.1 | A | 0.26 | 101 | 230 |
| | | NB | 27.1 | C | 0.19 | 20 | 29.6 | C | 0.27 | 14 | - |
| | | SB | 6.8 | A | - | - | 9.5 | A | - | - | - |
| | | SBT | 34.5 | C | 0.05 | 14 | 34.1 | C | 0.13 | 32 | 270 |
| | | SBR | 5.5 | A | 0.37 | 21 | 6.0 | A | 0.31 | 43 | 50 |
| | | Overall | 16.6 | B | - | - | 9.2 | A | - | - | - |
| High Street (Rt 100) & Main Street | 6 | EB | 12.1 | B | - | - | 13.6 | B | - | - | - |
| | | EBT | 15.6 | B | 0.36 | 100 | 17.2 | B | 0.50 | 158 | 230 |
| | | EBR | 0.3 | A | 0.10 | 0 | 1.1 | A | 0.14 | 7 | 230 |
| | | WB | 15.1 | B | - | - | 20.2 | C | - | - | - |
| | | WBL | 13.0 | B | 0.03 | 13 | 13.4 | B | 0.10 | 25 | 250 |
| | | WBT | 15.2 | B | 0.31 | 88 | 20.7 | C | 0.64 | #217 | 250 |
| | | NB | 17.9 | B | - | - | 19.5 | B | - | - | - |
| | | NBL | 8.8 | A | 0.15 | 26 | 9.9 | A | 0.16 | 28 | 500 |
| | | NBT | 21.7 | C | 0.44 | 85 | 23.5 | C | 0.51 | 86 | 80 |
| | | SB | 12.5 | B | - | - | 14.0 | B | - | - | - |
| | | SBL | 11.9 | B | 0.49 | 85 | 12.9 | B | 0.47 | 88 | 190 |
| | | SBT | 14.1 | B | 0.19 | 53 | 15.9 | B | 0.23 | 70 | 190 |
| | | Overall | 14.0 | B | - | - | 16.6 | B | - | - | - |

**Table 3: Existing 2023 Capacity Analysis Results (Cont.)**

| | | | AM | | | | PM | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Int. Name | Int. # | Lane Group | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Available Storage (ft) |
| Hemingway Avenue (Rt 142) & Saltonstall Parkway (Rt 1) | 7 | NB | 31.4 | C | - | - | 28.9 | C | - | - | - |
| | | NBL | 31.6 | C | 0.58 | 358 | 29.2 | C | 0.56 | 292 | 400 |
| | | NBT | 31.3 | C | 0.58 | 353 | 28.6 | C | 0.55 | 282 | 400 |
| | | SB | 40.0 | D | 0.10 | 18 | 46.3 | D | 0.08 | 18 | - |
| | | EB | 12.3 | B | - | - | 26.1 | C | - | - | - |
| | | EBL | 59.3 | E | 0.24 | 42 | 69.1 | E | 0.56 | 98 | 70 |
| | | EBT | 24.8 | C | 0.23 | 133 | 45.9 | D | 0.71 | 269 | - |
| | | EBR | 0.9 | A | 0.30 | 24 | 1.6 | A | 0.45 | 27 | 250 |
| | | WB | 27.0 | C | - | - | 46.2 | D | - | - | - |
| | | WBL | 62.3 | E | 0.37 | 62 | 78.5 | E | 0.70 | #140 | 140 |
| | | WBT | 24.2 | C | 0.32 | 195 | 39.7 | D | 0.52 | 219 | - |
| | | Overall | 23.5 | C | - | - | 31.5 | C | - | - | - |
| Hemingway Avenue (Rt 142) & Main Street | 8 | EB | 11.7 | B | - | - | 16.9 | B | - | - | - |
| | | EBL | 16.6 | B | 0.10 | 33 | 18.1 | B | 0.15 | 44 | 250 |
| | | EBT | 28.2 | C | 0.32 | 83 | 34.8 | C | 0.57 | 146 | 360 |
| | | EBR | 3.3 | A | 0.29 | 37 | 3.1 | A | 0.33 | 31 | 225 |
| | | WB | 20.9 | C | - | - | 23.9 | C | - | - | - |
| | | WBL | 17.0 | B | 0.14 | 38 | 20.7 | C | 0.36 | 84 | 150 |
| | | WBT | 23.9 | C | 0.22 | 54 | 27.2 | C | 0.32 | 98 | - |
| | | NB | 14.3 | B | - | - | 23.6 | C | - | - | - |
| | | NBL | 29.7 | C | 0.41 | 87 | 35.4 | D | 0.52 | 127 | 250 |
| | | NBT | 12.3 | B | 0.50 | 223 | 21.3 | C | 0.60 | 224 | 400 |
| | | SB | 19.4 | B | - | - | 25.9 | C | - | - | - |
| | | SBL | 30.2 | C | 0.11 | 27 | 35.5 | D | 0.31 | 60 | 110 |
| | | SBT | 19.0 | B | 0.40 | 112 | 25.5 | C | 0.60 | 180 | 330 |
| | | SBR | 18.0 | B | 0.05 | 23 | 20.8 | C | 0.12 | 46 | 330 |
| | | Overall | 15.5 | B | - | - | 22.8 | C | - | - | - |
| Hemingway Avenue (Rt 142) & Dodge Avenue | 9 | EB | 26.3 | C | 0.67 | 65 | 36.6 | D | 0.72 | 118 | 500 |
| | | WB | 24.9 | C | - | - | 27.0 | C | - | - | - |
| | | WBL | 33.2 | C | 0.05 | 10 | 27.0 | C | 0.01 | 4 | - |
| | | WBT | 0.0 | A | 0.00 | 0 | 27.0 | C | 0.01 | 4 | - |
| | | NB | 2.9 | A | 0.40 | 86 | 4.8 | A | 0.43 | 96 | 930 |
| | | SB | 12.8 | B | 0.34 | 163 | 18.8 | B | 0.58 | 313 | 210 |
| | | Overall | 9.0 | A | - | - | 14.7 | B | - | - | - |
| Coe Avenue (Rt 337) & Proto Drive | 10 | EB | 17.3 | C | 0.09 | 7 | 23.4 | C | 0.37 | 41 | - |
| | | NBL | 0.1 | A | 0.00 | 0 | 0.0 | - | 0.00 | 0 | - |
| | | Overall | 0.5 | A | - | - | 2.2 | A | - | - | - |
| Thompson Avenue & Dodge Avenue | 11 | EB | 8.6 | A | 0.21 | - | 9.7 | A | 0.28 | - | 500 |
| | | WB | 8.2 | A | 0.11 | - | 8.9 | A | 0.19 | - | 300 |
| | | NB | 8.2 | A | 0.12 | - | 8.7 | A | 0.15 | - | 535 |
| | | SB | 8.6 | A | 0.17 | - | 9.2 | A | 0.21 | - | 420 |
| | | Overall | 8.5 | A | - | - | 9.2 | A | - | - | - |
| Hemingway Avenue and Short Beach Road (Rt 142) at Coe Avenue (Rt 337) | 12 | EB | 35.3 | D | 0.28 | 30 | 35.0 | C | 0.34 | 49 | 110 |
| | | WB | 9.4 | A | - | - | 7.0 | A | - | - | - |
| | | WBL | 39.0 | D | 0.31 | 58 | 37.4 | D | 0.22 | 45 | 160 |
| | | WBT | 4.5 | A | 0.48 | 35 | 2.9 | A | 0.37 | 26 | 750 |
| | | NB | 11.0 | B | 0.29 | 138 | 18.0 | B | 0.44 | 185 | 750 |
| | | SB | 5.4 | A | - | - | 8.9 | A | - | - | - |
| | | SBL | 7.6 | A | 0.30 | 107 | 13.7 | B | 0.48 | 233 | 180 |
| | | SBT | 4.6 | A | 0.19 | 98 | 6.0 | A | 0.21 | 148 | 950 |
| | | Overall | 9.1 | A | - | - | 12.5 | B | - | - | - |

**Table 3: Existing 2023 Capacity Analysis Results (Cont.)**

| | | | AM | | | | PM | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Int. Name | Int. # | Lane Group | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Available Storage (ft) |
| Hemingway Avenue & Messina Drive | 13 | EB | 26.7 | D | - | - | 37.1 | E | - | - | - |
| | | EBL | 33.9 | D | 0.24 | 22 | 50.2 | F | 0.54 | 67 | 275 |
| | | EBR | 10.4 | B | 0.02 | 2 | 11.1 | B | 0.07 | 6 | 275 |
| | | NBL | 9.2 | A | 0.15 | 13 | 9.9 | A | 0.14 | 12 | 100 |
| | | Overall | 1.9 | A | - | - | 3.6 | A | - | - | - |
| Coe Avenue & Silver Sands Road | 14 | EB | 20.6 | C | 0.59 | 107 | 32.0 | C | 0.80 | #175 | - |
| | | WB | 8.6 | A | 0.12 | 24 | 11.6 | B | 0.23 | 33 | 700 |
| | | NB | 9.6 | A | 0.32 | 106 | 11.2 | B | 0.39 | 77 | - |
| | | SB | 4.6 | A | - | - | 9.1 | A | - | - | - |
| | | SBT | 8.8 | A | 0.15 | 50 | 13.1 | B | 0.48 | 125 | 610 |
| | | SBR | 2.5 | A | 0.29 | 28 | 2.8 | A | 0.29 | 27 | 610 |
| | | Overall | 9.8 | A | - | - | 15.5 | B | - | - | - |
| Silver Sands Road & South End Road | 15 | EB | 7.9 | A | 0.13 | - | 8.1 | A | 0.10 | - | 380 |
| | | WB | 7.1 | A | 0.08 | - | 7.8 | A | 0.16 | - | 570 |
| | | NB | 0.0 | A | 0.00 | - | 7.7 | A | 0.01 | - | - |
| | | SB | 7.6 | A | 0.06 | - | 8.2 | A | 0.17 | - | 450 |
| | | Overall | 7.6 | A | - | - | 8.0 | A | - | - | - |
| Kimberly Avenue & Forbes Place | 16 | EB | 10.5 | B | 0.11 | - | 11.3 | B | 0.15 | - | 235 |
| | | WB | 15.0 | B | 0.54 | - | 16.3 | C | 0.55 | - | 860 |
| | | NB | 14.5 | B | 0.51 | - | 12.4 | B | 0.34 | - | 500 |
| | | SB | 17.6 | C | 0.61 | - | 104.3 | F | 1.14 | - | 70 |
| | | Overall | 15.5 | C | - | - | 63.5 | F | - | - | - |
| Main Street & Forbes Place | 17 | EB | 12.6 | B | - | - | 14.8 | B | - | - | - |
| | | EBL | 12.9 | B | 0.10 | 44 | 14.5 | B | 0.15 | 47 | 200 |
| | | EBT | 12.6 | B | 0.22 | 123 | 14.8 | B | 0.34 | 167 | 350 |
| | | WB | 12.4 | B | - | - | 14.8 | B | - | - | - |
| | | WBT | 12.3 | B | 0.19 | 97 | 15.2 | B | 0.38 | 190 | 300 |
| | | WBR | 12.5 | B | 0.09 | 46 | 13.3 | B | 0.14 | 64 | 300 |
| | | NB | 32.5 | C | 0.46 | 84 | 30.0 | C | 0.35 | 59 | 730 |
| | | SB | 23.9 | C | - | - | 30.0 | C | - | - | - |
| | | SBT | 33.3 | C | 0.48 | 95 | 38.4 | D | 0.71 | 186 | 1250 |
| | | SBR | 3.7 | A | 0.19 | 11 | 6.5 | A | 0.23 | 31 | 150 |
| | | Overall | 17.7 | B | - | - | 20.0 | B | - | - | - |
| Frontage Road (Rt 1) & Forbes Place | 18 | EB | 10.5 | B | - | - | 13.5 | B | - | - | - |
| | | EBT | 12.8 | B | 0.42 | 156 | 16.5 | B | 0.68 | 296 | - |
| | | EBR | 4.8 | A | 0.28 | 75 | 7.4 | A | 0.54 | 184 | 200 |
| | | WB | 4.7 | A | - | - | 4.8 | A | - | - | - |
| | | WBL | 3.6 | A | 0.11 | 15 | 7.1 | A | 0.36 | 33 | 150 |
| | | WBT | 4.8 | A | 0.44 | 117 | 4.6 | A | 0.43 | 115 | - |
| | | NB | 95.6 | F | 1.07 | #233 | 39.3 | D | 0.68 | 124 | 70 |
| | | Overall | 24.8 | C | - | - | 12.8 | B | - | - | - |

# 95th percentle volume exceeds capacity, queue may be longer.

m Volume for 95th percentile queue is metered by upstream signal

## 6.0 NO-BUILD 2029 ANALYSIS

The existing operations were projected to a no-build scenario in the year of 2029, when the airport expansion would be expected to have been completed. The no-build analysis does not include any additional site-generated traffic related to the airport or any other development. The results of the no-build 2029 capacity analyses are shown in **Table 4.** These results reflect the operations at the study area intersections for the year 2029. This analysis assumes that all intersections will maintain the same geometry, lane configurations, signing, and signal timing. The projected 2029 traffic volumes were calculated by applying a conservative annual growth rate of one percent to the existing 2023 traffic volumes. The calculated levels of service (LOS), volume to capacity (v/c) ratios, and 95$^{th}$ percentile queue lengths are provided in each of the tables. The available storage provided represents either the length of a turn-lane, the distance to an adjacent major intersection, or the distance to the gore for a freeway off-ramp, as appropriate. The queue lengths were calculated assuming an average vehicle length of 25 feet. **Appendix G** contains details of the 2029 no-build capacity analysis.

The 2029 no-build-year analysis presented in **Table 4** show that a majority of approaches and overall intersections operate at acceptable levels of service with adequate storage for queuing with the exception of the same movements and intersections as the existing conditions. In addition, the following movements and intersections degraded in level of service or the 95$^{th}$ percentile queue has increased in the no-build to exceed past the available storage.

- Intersection 2: High Street (Route 100) & I-95 NB On-Ramp (Exit 52)
    - The southbound approach degrades to a LOS F for both peak-hours. The through movement degrades to a LOS F for the morning peak and the 95$^{th}$ percentile queue in the evening increases past the available storage.
- Intersection 3: High Street (Route 100) & Kimberly Avenue
    - The southbound through movement degrades to a LOS E during the morning peak.
- Intersection 7: Hemingway Avenue (Route 142) & Saltonstall Parkway (Route 1)
    - The westbound left-turn degrades to a LOS F for the evening peak-hour with a 95$^{th}$ percentile queue that exceeds past the available storage.
- Intersection 13: Hemingway Avenue & Messina Drive
    - The eastbound left-turn degrades to a LOS E during the morning peak-hour.
- Intersection 18: Frontage Road (Route 1) & Forbes Place
    - The 95$^{th}$ percentile queue for the eastbound right-turn during evening peak hour exceeds past the available storage length.

**Table 4: 2029 No-Build Capacity Analysis Results**

| | | | AM | | | | PM | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Int. Name | Int. # | Lane Group | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Available Storage (ft) |
| High Street (Rt 100) & I-95 SB Off-Ramp (Exit 52) | 1 | WB | 47.4 | D | 0.77 | 220 | 41.5 | D | 0.87 | 374 | 1000 |
| | | NB | 16.6 | B | 0.40 | m188 | 30.8 | C | 0.54 | m211 | 425 |
| | | SB | 11.6 | B | 0.61 | 377 | 23.6 | C | 0.69 | 386 | 400 |
| | | Overall | 19.9 | B | - | - | 31.8 | C | - | - | - |
| High Street (Rt 100) & I-95 NB On-Ramp (Exit 52) | 2 | EB | 26.3 | C | 0.68 | 220 | 14.0 | B | 0.35 | 123 | 400 |
| | | NB | 75.1 | E | - | - | 64.9 | E | - | - | - |
| | | NBL | 12.0 | B | 0.28 | m31 | 16.1 | B | 0.61 | m73 | 200 |
| | | NBT | 86.0 | F | 1.10 | m#293 | 83.0 | F | 1.1 | m304 | 200 |
| | | SB | 95.8 | F | - | - | 91.6 | F | - | - | - |
| | | SBL | 62.4 | E | 0.75 | #184 | 53.1 | D | 0.52 | m93 | 310 |
| | | SBT | 102.1 | F | 1.00 | #382 | 96.3 | F | 1.08 | #425 | 400 |
| | | Overall | 72.9 | E | - | - | 70.7 | E | - | - | - |
| High Street (Rt 100) & Kimberly Avenue | 3 | EB | 24.4 | C | 0.44 | 193 | 30.5 | C | 0.64 | 333 | 850 |
| | | NB | 161.3 | F | 1.25 | #578 | 290.4 | F | - | #625 | 1000 |
| | | SB | 46.0 | D | - | - | 51.1 | D | 1.56 | - | - |
| | | SBT | 73.8 | E | 0.92 | m131 | 70.2 | E | 1.04 | m#453 | 185 |
| | | SBR | 2.4 | A | 0.47 | m0 | 1.7 | A | 0.37 | m0 | 185 |
| | | Overall | 77.7 | E | - | - | 120.2 | F | - | - | - |
| High Street (Rt 100) & Messina Drive | 4 | EB | 18.6 | B | 0.15 | 34 | 18.5 | B | 0.14 | 33 | 250 |
| | | WB | 8.6 | A | - | - | 10.7 | B | - | - | - |
| | | WBT | 18.7 | B | 0.12 | 41 | 19.8 | B | 0.23 | 70 | 670 |
| | | WBR | 5.8 | A | 0.35 | 44 | 5.7 | A | 0.35 | 43 | 670 |
| | | NB | 10.9 | B | - | - | 10.2 | B | - | - | - |
| | | NBL | 8.0 | A | 0.00 | 2 | 8.5 | A | 0.01 | 5 | 195 |
| | | NBR | 10.9 | B | 0.34 | 95 | 10.2 | B | 0.3 | 90 | 195 |
| | | SB | 13.1 | B | 0.49 | 92 | 13.7 | B | 0.51 | 105 | 160 |
| | | Overall | 12.1 | B | - | - | 12.6 | B | - | - | - |
| Main Street & Messina Drive | 5 | EB | 7.2 | A | 0.24 | 67 | 9.7 | A | 0.33 | 113 | 250 |
| | | WB | 5.6 | A | - | - | 7.4 | A | - | - | - |
| | | WBL | 4.8 | A | 0.01 | 3 | 5.4 | A | 0.05 | 14 | 230 |
| | | WBT | 5.6 | A | 0.21 | 50 | 7.5 | A | 0.28 | 114 | 230 |
| | | NB | 26.2 | C | 0.18 | 20 | 29.7 | C | 0.28 | 14 | - |
| | | SB | 7.6 | A | - | - | 9.1 | A | - | - | - |
| | | SBT | 33.5 | C | 0.05 | 14 | 33.5 | C | 0.13 | 32 | 270 |
| | | SBR | 6.5 | A | 0.35 | 36 | 5.7 | A | 0.32 | 43 | 50 |
| | | Overall | 7.3 | A | - | - | 9.6 | A | - | - | - |
| High Street (Rt 100) & Main Street | 6 | EB | 13.9 | B | - | - | 14.5 | B | - | - | - |
| | | EBT | 18.0 | B | 0.45 | 119 | 18.2 | B | 0.54 | 171 | 230 |
| | | EBR | 0.4 | A | 0.12 | 0 | 1.4 | A | 0.15 | 9 | 230 |
| | | WB | 17.1 | B | - | - | 22.3 | C | - | - | - |
| | | WBL | 14.0 | B | 0.04 | 14 | 13.9 | B | 0.12 | 26 | 250 |
| | | WBT | 17.3 | B | 0.39 | 107 | 23 | C | 0.69 | #257 | 250 |
| | | NB | 20.5 | C | - | - | 19.8 | B | - | - | - |
| | | NBL | 8.7 | A | 0.15 | 28 | 9.9 | A | 0.17 | 29 | 500 |
| | | NBT | 24.5 | C | 0.56 | 111 | 23.9 | C | 0.53 | 90 | 80 |
| | | SB | 12.1 | B | - | - | 14.2 | B | - | - | - |
| | | SBL | 11.5 | B | 0.47 | 90 | 13.3 | B | 0.5 | 94 | 190 |
| | | SBT | 13.7 | B | 0.16 | 55 | 15.8 | B | 0.24 | 73 | 190 |
| | | Overall | 15.4 | B | - | - | 17.6 | B | - | - | - |

**Table 4: 2029 No-Build Capacity Analysis Results (Cont.)**

| | | | AM | | | | PM | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Int. Name | Int. # | Lane Group | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Available Storage (ft) |
| Hemingway Avenue (Rt 142) & Saltonstall Parkway (Rt 1) | 7 | NB | 28.7 | C | - | - | 27.4 | C | - | - | - |
| | | NBL | 28.8 | C | 0.58 | 360 | 27.7 | C | 0.57 | 311 | 400 |
| | | NBT | 28.6 | C | 0.58 | 356 | 27.1 | C | 0.56 | 302 | 400 |
| | | SB | 40.0 | D | 0.10 | 18 | 49.9 | D | 0.13 | 18 | - |
| | | EB | 13.6 | B | - | - | 26.5 | C | - | - | - |
| | | EBL | 59.6 | E | 0.25 | 43 | 69.9 | E | 0.58 | 101 | 70 |
| | | EBT | 27.9 | C | 0.26 | 150 | 46.6 | D | 0.74 | 288 | - |
| | | EBR | 1.0 | A | 0.32 | 25 | 1.6 | A | 0.47 | 28 | 250 |
| | | WB | 29.9 | C | - | - | 46.6 | D | - | - | - |
| | | WBL | 62.6 | E | 0.38 | 65 | 81.0 | F | 0.73 | #153 | 140 |
| | | WBT | 27.3 | C | 0.36 | 221 | 39.8 | D | 0.54 | 233 | - |
| | | Overall | 23.5 | C | - | - | 31.3 | C | - | - | - |
| Hemingway Avenue (Rt 142) & Main Street | 8 | EB | 11.6 | B | - | - | 17.9 | B | - | - | - |
| | | EBL | 16.7 | B | 0.11 | 35 | 19.2 | B | 0.16 | 47 | 250 |
| | | EBT | 28.4 | C | 0.34 | 87 | 37.1 | D | 0.6 | 157 | 360 |
| | | EBR | 3.2 | A | 0.30 | 37 | 3.2 | A | 0.35 | 32 | 225 |
| | | WB | 21.1 | C | - | - | 25.7 | C | - | - | - |
| | | WBL | 17.1 | B | 0.14 | 39 | 22.7 | C | 0.41 | 91 | 150 |
| | | WBT | 24.2 | C | 0.24 | 57 | 28.7 | C | 0.34 | 105 | - |
| | | NB | 14.8 | B | - | - | 24.0 | C | - | - | - |
| | | NBL | 29.8 | C | 0.42 | 92 | 37.3 | D | 0.55 | 136 | 250 |
| | | NBT | 12.9 | B | 0.53 | 244 | 21.4 | C | 0.61 | 243 | 400 |
| | | SB | 20.1 | C | - | - | 26.2 | C | - | - | - |
| | | SBL | 30.5 | C | 0.12 | 28 | 37.1 | D | 0.33 | 64 | 110 |
| | | SBT | 19.7 | B | 0.43 | 121 | 25.6 | C | 0.61 | 192 | 330 |
| | | SBR | 18.5 | B | 0.06 | 24 | 20.6 | C | 0.13 | 48 | 330 |
| | | Overall | 15.9 | B | - | - | 23.5 | C | - | - | - |
| Hemingway Avenue (Rt 142) & Dodge Avenue | 9 | EB | 27.3 | C | 0.68 | 71 | 36.5 | D | 0.72 | 125 | 500 |
| | | WB | 23.8 | C | - | - | 26.0 | C | - | - | - |
| | | WBL | 31.8 | C | 0.05 | 9 | 26 | C | 0.01 | 4 | - |
| | | WBT | 0.0 | A | 0.00 | 0 | 26 | C | 0.01 | 4 | - |
| | | NB | 3.3 | A | 0.43 | 96 | 6.6 | A | 0.48 | 152 | 930 |
| | | SB | 14.2 | B | 0.37 | 179 | 21.2 | C | 0.64 | 342 | 210 |
| | | Overall | 9.8 | A | - | - | 16.5 | B | - | - | - |
| Coe Avenue (Rt 337) & Proto Drive | 10 | EB | 18.4 | C | 0.10 | 8 | 25.9 | D | 0.41 | 48 | - |
| | | NBL | 0.2 | A | 0.00 | 0 | 0.0 | - | 0.0 | 0 | - |
| | | Overall | 0.5 | A | - | - | 2.4 | A | - | - | - |
| Thompson Avenue & Dodge Avenue | 11 | EB | 8.8 | A | 0.22 | - | 10 | B | 0.30 | - | 500 |
| | | WB | 8.2 | A | 0.12 | - | 9.1 | A | 0.20 | - | 300 |
| | | NB | 8.3 | A | 0.13 | - | 8.8 | A | 0.16 | - | 535 |
| | | SB | 8.8 | A | 0.18 | - | 9.4 | A | 0.22 | - | 420 |
| | | Overall | 8.6 | A | - | - | 9.4 | A | - | - | - |
| Hemingway Avenue and Short Beach Road (Rt 142) at Coe Avenue (Rt 337) | 12 | EB | 35.1 | D | 0.28 | 31 | 35.3 | D | 0.36 | 51 | 110 |
| | | WB | 9.2 | A | - | - | 6.7 | A | - | - | - |
| | | WBL | 38.6 | D | 0.31 | 60 | 37.4 | D | 0.23 | 47 | 160 |
| | | WBT | 4.3 | A | 0.49 | 34 | 2.6 | A | 0.36 | 25 | 750 |
| | | NB | 12.0 | B | 0.32 | 155 | 21.4 | C | 0.51 | 209 | 750 |
| | | SB | 6.2 | A | - | - | 10.1 | B | - | - | - |
| | | SBL | 8.8 | A | 0.33 | 125 | 15.7 | B | 0.5 | 256 | 180 |
| | | SBT | 5.2 | A | 0.20 | 118 | 6.7 | A | 0.22 | 159 | 950 |
| | | Overall | 9.7 | A | - | - | 14.2 | B | - | - | - |

**Table 4: 2029 No-Build Capacity Analysis Results (Cont.)**

| | | | AM | | | | PM | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Int. Name | Int. # | Lane Group | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Available Storage (ft) |
| Hemingway Avenue & Messina Drive | 13 | EB | 29.5 | D | - | - | 47.8 | E | - | - | - |
| | | EBL | 38.2 | E | 0.28 | 27 | 66.2 | F | 0.64 | 87 | 275 |
| | | EBR | 10.5 | B | 0.03 | 2 | 11.4 | B | 0.08 | 6 | 275 |
| | | NB | 1.5 | A | - | - | 1.4 | A | - | - | - |
| | | NBL | 9.4 | A | 0.16 | 14 | 10.2 | B | 0.15 | 14 | 100 |
| | | NBT | 0.0 | - | 0.24 | 0 | 0.0 | - | 0.23 | 0 | - |
| | | Overall | 2.0 | A | - | - | 4.4 | A | - | - | - |
| Coe Avenue & Silver Sands Road | 14 | EB | 23.3 | C | 0.65 | 114 | 34.2 | C | 0.82 | #191 | - |
| | | WB | 8.6 | A | 0.13 | 25 | 11.8 | B | 0.24 | 35 | 700 |
| | | NB | 10.6 | B | 0.40 | 113 | 11.7 | B | 0.42 | 82 | - |
| | | SB | 4.9 | A | - | - | 9.6 | A | - | - | - |
| | | SBT | 9.1 | A | 0.19 | 53 | 14 | B | 0.52 | 135 | 610 |
| | | SBR | 2.7 | A | 0.34 | 29 | 2.9 | A | 0.31 | 27 | 610 |
| | | Overall | 10.8 | B | - | - | 16.4 | B | - | - | - |
| Silver Sands Road & South End Road | 15 | EB | 7.9 | A | 0.14 | - | 8.2 | A | 0.10 | - | 380 |
| | | WB | 7.1 | A | 0.09 | - | 7.9 | A | 0.17 | - | 570 |
| | | NB | 0.0 | A | - | - | 7.8 | A | 0.01 | - | - |
| | | SB | 7.6 | A | 0.07 | - | 8.3 | A | 0.18 | - | 450 |
| | | Overall | 7.6 | A | - | - | 8.1 | A | - | - | - |
| Kimberly Avenue & Forbes Place | 16 | EB | 11.0 | B | 0.12 | - | 11.6 | B | 0.16 | - | 235 |
| | | WB | 17.0 | C | 0.60 | - | 17.6 | C | 0.59 | - | 860 |
| | | NB | 16.4 | C | 0.56 | - | 13.0 | B | 0.37 | - | 500 |
| | | SB | 20.7 | C | 0.68 | - | 144.3 | F | 1.25 | - | - |
| | | Overall | 17.8 | C | - | - | 85.9 | F | - | - | 70 |
| Main Street & Forbes Place | 17 | EB | 13.3 | B | - | - | 15.1 | B | - | - | - |
| | | EBL | 13.3 | B | 0.12 | 47 | 14.8 | B | 0.17 | 49 | 200 |
| | | EBT | 13.2 | B | 0.26 | 131 | 15.2 | B | 0.37 | 177 | 350 |
| | | WB | 12.9 | B | - | - | 15.1 | B | - | - | - |
| | | WBT | 12.9 | B | 0.22 | 103 | 15.6 | B | 0.41 | 200 | 300 |
| | | WBR | 12.7 | B | 0.11 | 49 | 13.4 | B | 0.15 | 66 | 300 |
| | | NB | 33.0 | C | 0.48 | 88 | 30.2 | C | 0.37 | 61 | 730 |
| | | SB | 24.1 | C | - | - | 32.1 | C | - | - | - |
| | | SBT | 33.5 | C | 0.50 | 100 | 41.0 | D | 0.74 | #222 | 1250 |
| | | SBR | 4.0 | A | 0.20 | 13 | 7.2 | A | 0.24 | 35 | 150 |
| | | Overall | 18.2 | B | - | | 20.8 | C | - | - | - |
| Frontage Road (Rt 1) & Forbes Place | 18 | EB | 10.7 | B | - | - | 14.4 | | - | - | - |
| | | EBT | 13.1 | B | 0.45 | 168 | 17.6 | B | 0.72 | 324 | - |
| | | EBR | 4.9 | A | 0.30 | 80 | 8.0 | A | 0.58 | 205 | 200 |
| | | WB | 4.9 | A | - | - | 5.3 | | - | - | - |
| | | WBL | 3.6 | A | 0.13 | 16 | 10 | A | 0.4 | 54 | 150 |
| | | WBT | 5.0 | A | 0.47 | 128 | 4.8 | A | 0.46 | 125 | - |
| | | NB | 118.9 | F | 1.14 | #254 | 41.0 | D | 0.72 | 131 | 70 |
| | | Overall | 29.6 | C | - | - | 13.7 | B | - | - | - |

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

m Volume for 95th percentile queue Is metered by upstream signal.

## 7.0 FULL-SITE BUILD 2029 ANALYSIS

The 2029 full-site build analysis models the operations throughout the study area after the Tweed New Haven Airport expansion project has been completed with a single entrance point on Proto Drive. The standard procedure to obtain site generated traffic volumes is to use the Institute of Transportation Engineers (ITE), Trip Generation Manual 11th Edition. However, the manual has limited data points for the commercial airport land-use code, such that no relevant data is able to be utilized. Alternatively, the site generated traffic volumes were obtained from estimates within the draft Environmental Assessment document developed through collaboration with Avports, the operator of the Tweed New Haven Airport. The site generated trip distribution patterns were estimated based on the expected routes for vehicles heading towards and departing from the new terminal while considering alternate GPS software routes. The results of the 2029 full-site build capacity analyses are shown in **Table 5.** This analysis assumes that all intersections will maintain the same geometry, lane configurations, signing, and signal timing. The calculated levels of service (LOS), volume to capacity (v/c) ratios, and 95th percentile queue lengths are provided in each of the tables. The available storage provided represents either the length of a turn-lane, the distance to an adjacent major intersection, or the distance to the gore for a freeway off-ramp, as appropriate. The queue lengths were calculated assuming an average vehicle length of 25 feet. **Appendix H** contains details of the full-site build 2029 capacity analysis.

The full-site build 2029 analysis presented in **Table 5** shows an overall degradation in operations throughout the study area. The movements, approaches, and intersections that previously operated poorly during the 2029 no-build conditions continue to operate poorly. The following movements or intersections have further degraded in LOS or 95th percentile queue length:

- Intersection 1: High Street (Route 100) & I-95 SB Off-Ramp (Exit 52)
    - The 95th percentile queue for the southbound approach exceeds the available storage length for the morning peak-period.
- Intersection 2: High Street (Route 100) & I-95 NB On-Ramp (Exit 52)
    - The northbound approach degrades from a LOS E in the no-build conditions to a LOS F in the full-site build conditions for both the morning and evening peak periods.
- Intersection 3: High Street (Route 100) & Kimberly Avenue
    - The overall intersection level of service degrades from a LOS E in the no-build condition to a LOS F in the full-site build condition for the morning condition. Additionally, the southbound through movement has a 95th percentile in the morning scenario that exceeds past the available storage length and extends past Intersection 2.
- Intersection 9: Hemingway Avenue (Route 142) & Dodge Avenue
    - The 95th percentile queue for the southbound approach in both the morning and evening peak-hours extend past the available storage length.

- Intersection 10: Coe Avenue (Route 337) & Proto Drive
    - The eastbound approach degrades to a LOS F for both the morning and evening peak-hours. The volume to capacity ratio indicates that the eastbound approach receives 80 percent more volume in the evening peak-hour than capacity allows. The overall intersection in the evening peak-hour operates at a LOS F with an average delay of 100.5 seconds.
    - Observationally, this intersection as existing would not be equipped for the additional site generated traffic. Major improvements would be required at this intersection to accommodate the added traffic including, but not limited to, turning radius evaluation, limiting/prohibiting street parking, installing proper signage, repaving along Proto Drive, signal warrant analysis with potential signalization and intersection timing design.
- Intersection 13: Hemingway Avenue & Messina Drive
    - Due to increased traffic on Hemingway Avenue, the eastbound approach degrades to a LOS E in the morning with the left-turn movement at a LOS F. Additionally, the eastbound approach overall degrades from a LOS E in the no-build condition to a LOS F in the full-site build condition during the evening peak-hour. Delay for the eastbound approach during evening peak increases from 47.8 sec in the no-build condition to 111.7 sec in the full build condition.

Since there were movements operating at LOS E and F during the existing and no-build conditions, a further investigation was done into the delay times to see the full extent of the full-site generated traffic on the study intersections. The following movements operate at a LOS E or F in the 2029 no-build scenario, continue to operate at an unacceptable level of service for the full-site build scenario while experiencing an increase in delay over 20 percent:

- Intersection 2: High Street (Route 100) & I-95 NB On-Ramp (Exit 52)
    - The northbound approach delay increases by 15 seconds (20 percent) between the no-build and full-site build conditions while operating at a LOS F during the morning peak-hour. The northbound delay during the evening peak-hour increases by 20.7 seconds (32 percent).
    - The delay of the overall intersection during the evening peak-hour increases by 14.1 seconds (20 percent) between the no-build and full-site build scenarios while continuing to operate at a LOS F.
- Intersection 3: High Street (Route 100) & Kimberly Avenue
    - The northbound approach delay increases by 32.9 seconds (20 percent) between the no-build and full-site build scenarios while continuing to operate at a LOS F during the morning peak-hour.
- Intersection 10: Coe Avenue (Route 337) & Proto Drive
    - The delay of the eastbound approach increases by 96.9 seconds (527 percent) during the morning peak and 381.1 seconds (1471 percent) during the evening

peak between the no-build and full-site build scenarios causing the approach to operate at a LOS F.

    - During the evening peak-hour, the overall intersection delay increases by 98.1 seconds (4088 percent) between the scenarios.

- Intersection 13: Hemingway Avenue & Messina Drive
    - The eastbound left-turn delay increases by 23.6 seconds (62 percent) during the morning peak and 95.7 seconds (145 percent) during the evening peak between the no-build and full-site build scenarios while continuing to operate at a LOS F.

Delay comparison between the no-build and full-site build scenarios is provided in **Table 6**.

**Table 5: Full-Site Build 2029 Capacity Analysis Results**

| | | | AM | | | | PM | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Int. Name | Int. # | Lane Group | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Available Storage (ft) |
| High Street (Rt 100) & I-95 SB Off-Ramp (Exit 52) | 1 | WB | 46.6 | D | 0.79 | 247 | 43.0 | D | 0.90 | 424 | 1000 |
| | | NB | 18.9 | B | 0.42 | m184 | 32.5 | C | 0.56 | m201 | 425 |
| | | SB | 13.8 | B | 0.63 | 417 | 25.9 | C | 0.72 | 386 | 400 |
| | | Overall | 22.0 | C | - | - | 33.6 | C | - | - | - |
| High Street (Rt 100) & I-95 NB On-Ramp (Exit 52) | 2 | EB | 26.3 | C | 0.68 | 220 | 14.0 | B | 0.35 | 123 | 400 |
| | | NB | 90.1 | F | - | - | 85.6 | F | - | - | - |
| | | NBL | 11.2 | B | 0.28 | m28 | 15.6 | B | 0.61 | m67 | 200 |
| | | NBT | 103.1 | F | 1.16 | m#292 | 110.0 | F | 1.17 | m#305 | 200 |
| | | SB | 94.8 | F | - | - | 102.2 | F | - | - | - |
| | | SBL | 62.8 | E | 0.75 | m#176 | 53.0 | D | 0.52 | m88 | 310 |
| | | SBT | 100.8 | F | 1.05 | #414 | 107.9 | F | 1.14 | #460 | 400 |
| | | Overall | 78.3 | E | - | - | 84.8 | F | - | - | - |
| High Street (Rt 100) & Kimberly Avenue | 3 | EB | 24.4 | C | 0.44 | 193 | 30.6 | C | 0.64 | 333 | 850 |
| | | NB | 194.2 | F | 1.33 | #628 | 337.4 | F | - | #701 | 1000 |
| | | SB | 47.0 | D | - | - | 52.1 | D | 1.67 | - | - |
| | | SBT | 73.4 | E | 0.98 | m#460 | 70.4 | E | 1.11 | m#471 | 185 |
| | | SBR | 2.5 | A | 0.48 | m0 | 1.6 | A | 0.37 | m0 | 185 |
| | | Overall | 89.4 | F | - | - | 137.6 | F | - | - | - |
| High Street (Rt 100) & Messina Drive | 4 | EB | 20.0 | B | 0.15 | 36 | 19.8 | B | 0.14 | 36 | 250 |
| | | WB | 9.2 | A | - | - | 11.5 | B | - | - | - |
| | | WBT | 20.2 | C | 0.12 | 44 | 21.3 | C | 0.23 | 75 | 670 |
| | | WBR | 6.2 | A | 0.35 | 46 | 6.1 | A | 0.35 | 45 | 670 |
| | | NB | 11.3 | B | - | - | 10.6 | B | - | - | 195 |
| | | NBL | 8.0 | A | 0.00 | 2 | 8.2 | A | 0.01 | 5 | 195 |
| | | NBR | 11.3 | B | 0.37 | 105 | 10.6 | B | 0.34 | 103 | - |
| | | SB | 13.4 | B | 0.51 | 102 | 14.0 | B | 0.54 | 116 | 160 |
| | | Overall | 12.6 | B | - | - | 13.1 | B | - | - | - |
| Main Street & Messina Drive | 5 | EB | 7.2 | A | 0.24 | 67 | 10.0 | A | 0.33 | 117 | 250 |
| | | WB | 5.6 | A | - | - | 7.4 | A | - | - | - |
| | | WBL | 4.8 | A | 0.01 | 3 | 5.4 | A | 0.05 | 14 | 230 |
| | | WBT | 5.6 | A | 0.21 | 50 | 7.6 | A | 0.28 | 114 | 230 |
| | | NB | 26.2 | C | 0.18 | 20 | 29.7 | C | 0.28 | 14 | - |
| | | SB | 7.6 | A | - | - | 9.1 | A | - | - | - |
| | | SBT | 33.5 | C | 0.05 | 14 | 33.5 | C | 0.13 | 32 | 270 |
| | | SBR | 6.5 | A | 0.35 | 36 | 5.7 | A | 0.32 | 43 | 50 |
| | | Overall | 7.3 | A | - | - | 9.8 | A | - | - | - |
| High Street (Rt 100) & Main Street | 6 | EB | 14.4 | B | - | - | 15.3 | B | - | - | - |
| | | EBT | 18.7 | B | 0.45 | 123 | 19.3 | B | 0.56 | 179 | 230 |
| | | EBR | 0.4 | A | 0.13 | 0 | 1.5 | A | 0.15 | 10 | 230 |
| | | WB | 18.0 | B | - | - | 24.6 | C | - | - | - |
| | | WBL | 14.5 | B | 0.04 | 15 | 14.7 | B | 0.12 | 28 | 250 |
| | | WBT | 18.2 | B | 0.42 | 114 | 25.4 | C | 0.72 | #279 | 250 |
| | | NB | 21.7 | C | - | - | 21.6 | B | - | - | - |
| | | NBL | 8.6 | A | 0.15 | 28 | 9.7 | A | 0.18 | 30 | 500 |
| | | NBT | 25.7 | C | 0.60 | 125 | 26.0 | C | 0.59 | 108 | 80 |
| | | SB | 12.5 | B | - | - | 14.4 | B | - | - | - |
| | | SBL | 11.8 | B | 0.50 | 93 | 13.5 | B | 0.52 | 97 | 190 |
| | | SBT | 13.9 | B | 0.21 | 69 | 15.9 | B | 0.28 | 88 | 190 |
| | | Overall | 16.1 | B | - | - | 18.8 | B | - | - | - |

**Table 5: Full-Site Build 2029 Capacity Analysis Results (Cont.)**

| | | | AM | | | | PM | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Int. Name | Int. # | Lane Group | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Available Storage (ft) |
| Hemingway Avenue (Rt 142) & Saltonstall Parkway (Rt 1) | 7 | NB | 24.4 | C | - | - | 32.3 | C | - | - | - |
| | | NBL | 24.5 | C | 0.61 | 445 | 32.3 | C | 0.70 | 405 | 400 |
| | | NBT | 24.4 | C | 0.61 | 443 | 32.3 | C | 0.71 | 404 | 400 |
| | | SB | 40.3 | D | 0.10 | 18 | 50.7 | D | 0.13 | 18 | - |
| | | EB | 14.5 | B | - | - | 23.5 | C | - | - | - |
| | | EBL | 59.6 | E | 0.25 | 43 | 69.9 | E | 0.58 | 101 | 70 |
| | | EBT | 36.1 | D | 0.35 | 156 | 46.0 | D | 0.73 | 288 | - |
| | | EBR | 1.3 | A | 0.44 | 27 | 2.2 | A | 0.58 | 30 | 250 |
| | | WB | 36.3 | D | - | - | 47.4 | D | - | - | - |
| | | WBL | 63.8 | E | 0.44 | 74 | 85.4 | F | 0.78 | #170 | 140 |
| | | WBT | 33.7 | C | 0.44 | 228 | 39.2 | D | 0.53 | 233 | - |
| | | Overall | 23.3 | C | - | - | 31.2 | C | - | - | - |
| Hemingway Avenue (Rt 142) & Main Street | 8 | EB | 12.5 | B | - | - | 19.9 | B | - | - | - |
| | | EBL | 19.0 | B | 0.11 | 38 | 21.7 | C | 0.17 | 49 | 250 |
| | | EBT | 30.9 | C | 0.34 | 93 | 42.3 | D | 0.65 | 164 | 360 |
| | | EBR | 3.5 | A | 0.31 | 41 | 3.5 | A | 0.37 | 34 | 225 |
| | | WB | 23.4 | C | - | - | 29.1 | C | - | - | - |
| | | WBL | 19.4 | B | 0.15 | 43 | 26.6 | C | 0.46 | 96 | 150 |
| | | WBT | 26.4 | C | 0.24 | 60 | 31.7 | C | 0.37 | 110 | - |
| | | NB | 17.6 | B | - | - | 24.8 | C | - | - | - |
| | | NBL | 32.1 | C | 0.45 | 103 | 41.9 | D | 0.61 | 150 | 250 |
| | | NBT | 15.9 | B | 0.63 | 297 | 22.0 | C | 0.67 | 313 | 400 |
| | | SB | 21.7 | C | - | - | 27.2 | C | - | - | - |
| | | SBL | 33.5 | C | 0.12 | 29 | 40.6 | D | 0.35 | 66 | 110 |
| | | SBT | 21.5 | C | 0.58 | 178 | 26.7 | C | 0.69 | 260 | 330 |
| | | SBR | 18.0 | B | 0.05 | 24 | 19.4 | B | 0.11 | 47 | 330 |
| | | Overall | 18.3 | B | - | - | 25.1 | C | - | - | - |
| Hemingway Avenue (Rt 142) & Dodge Avenue | 9 | EB | 30.7 | C | 0.73 | 93 | 32.8 | C | 0.73 | 135 | 500 |
| | | WB | 21.9 | C | - | - | 24.0 | C | - | - | - |
| | | WBL | 29.2 | C | 0.05 | 9 | 24 | C | 0.01 | 4 | - |
| | | WBT | 0.0 | A | 0.00 | 0 | 24 | C | 0 | 4 | - |
| | | NB | 6.2 | A | 0.55 | 146 | 17.4 | B | 0.66 | 298 | 930 |
| | | SB | 21.2 | C | 0.58 | 248 | 49.1 | D | 0.98 | #501 | 210 |
| | | Overall | 14.5 | B | - | - | 33.4 | C | - | - | - |
| Coe Avenue (Rt 337) & Proto Drive | 10 | EB | 115.3 | F | 1.05 | 270 | 407.0 | F | 1.8 | 775 | - |
| | | NBL | 0.9 | A | 0.02 | 0 | 0.8 | A | 0.0 | 0 | - |
| | | Overall | 19.0 | C | - | - | 100.5 | F | - | - | - |
| Thompson Avenue & Dodge Avenue | 11 | EB | 9.0 | A | 0.23 | - | 10.4 | B | 0.32 | - | 500 |
| | | WB | 8.5 | A | 0.16 | - | 9.6 | A | 0.25 | - | 300 |
| | | NB | 8.5 | A | 0.13 | - | 9.1 | A | 0.16 | - | 535 |
| | | SB | 9.3 | A | 0.23 | - | 10.2 | B | 0.29 | - | 420 |
| | | Overall | 8.9 | A | - | - | 9.9 | A | - | - | - |
| Hemingway Avenue and Short Beach Road (Rt 142) at Coe Avenue (Rt 337) | 12 | EB | 34.8 | C | 0.27 | 31 | 35.3 | D | 0.36 | 51 | 110 |
| | | WB | 9.3 | A | - | - | 7.4 | A | - | - | - |
| | | WBL | 39.4 | D | 0.35 | - | 38.7 | D | 0.28 | 53 | 160 |
| | | WBT | 3.7 | A | 0.47 | 66 | 2.4 | A | 0.36 | 23 | 750 |
| | | NB | 15.1 | B | 0.44 | 233 | 26.8 | C | 0.71 | #318 | 750 |
| | | SB | 9.2 | A | - | - | 12.4 | B | - | - | - |
| | | SBL | 12.1 | B | 0.37 | 138 | 17.7 | B | 0.57 | m195 | 180 |
| | | SBT | 8.4 | A | 0.29 | 191 | 10.1 | B | 0.31 | m185 | 950 |
| | | Overall | 11.9 | B | - | - | 17.7 | B | - | - | - |

**Table 5: Full-Site Build 2029 Capacity Analysis Results (Cont.)**

| | | | AM | | | | PM | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Int. Name | Int. # | Lane Group | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Available Storage (ft) |
| Hemingway Avenue & Messina Drive | 13 | EB | 45.9 | E | - | - | 111.7 | F | - | - | - |
| | | EBL | 61.8 | F | 0.40 | 41 | 161.9 | F | 0.96 | 142 | 275 |
| | | EBR | 11.5 | B | 0.03 | 3 | 12.5 | B | 0.09 | 7 | 275 |
| | | NB | 1.4 | - | - | - | 1.3 | A | - | - | - |
| | | NBL | 10.5 | B | 0.19 | 17 | 11.3 | B | 0.18 | 17 | 100 |
| | | NBT | - | B | 0.29 | 0 | 0.0 | - | 0.29 | 0 | - |
| | | Overall | 2.2 | A | - | - | 7.8 | A | - | - | - |
| Coe Avenue & Silver Sands Road | 14 | EB | 24.0 | C | 0.66 | 121 | 36.2 | D | 0.84 | #203 | - |
| | | WB | 8.6 | A | 0.13 | 25 | 11.7 | B | 0.24 | 35 | 700 |
| | | NB | 10.9 | B | 0.41 | 113 | 11.9 | B | 0.42 | 82 | - |
| | | SB | 4.9 | A | - | - | 9.6 | A | - | - | - |
| | | SBT | 9.3 | A | 0.19 | 53 | 14.2 | B | 0.52 | 135 | 610 |
| | | SBR | 2.8 | A | 0.36 | 29 | 2.9 | A | 0.32 | 28 | 610 |
| | | Overall | 11.1 | B | - | - | 17.1 | B | - | - | - |
| Silver Sands Road & South End Road | 15 | EB | 8.0 | A | 0.14 | - | 8.3 | A | 0.1 | - | 380 |
| | | WB | 7.2 | A | 0.10 | - | 8.0 | A | 0.19 | - | 570 |
| | | NB | 0.0 | A | - | - | 7.8 | A | 0.01 | - | - |
| | | SB | 7.8 | A | 0.08 | - | 8.5 | A | 0.19 | - | 450 |
| | | Overall | 7.7 | A | - | - | 8.2 | A | - | - | - |
| Kimberly Avenue & Forbes Place | 16 | EB | 11.0 | B | 0.12 | - | 11.7 | B | 0.17 | - | 235 |
| | | WB | 17.1 | C | 0.60 | - | 17.8 | C | 0.59 | - | 860 |
| | | NB | 16.5 | C | 0.56 | - | 13.0 | B | 0.37 | - | 500 |
| | | SB | 20.9 | C | 0.68 | - | 147.2 | F | 1.25 | - | - |
| | | Overall | 17.9 | C | - | - | 87.4 | F | - | - | 70 |
| Main Street & Forbes Place | 17 | EB | 13.3 | B | - | - | 15.1 | B | - | - | - |
| | | EBL | 13.3 | B | 0.12 | 47 | 14.8 | B | 0.17 | 49 | 200 |
| | | EBT | 13.3 | B | 0.26 | 131 | 15.2 | B | 0.37 | 177 | 350 |
| | | WB | 12.9 | B | - | - | 15.1 | B | - | - | - |
| | | WBT | 12.9 | B | 0.22 | 103 | 15.7 | B | 0.41 | 200 | 300 |
| | | WBR | 12.8 | B | 0.11 | 49 | 13.4 | B | 0.15 | 67 | 300 |
| | | NB | 33.0 | C | 0.48 | 88 | 30.2 | C | 0.37 | 61 | 730 |
| | | SB | 24.3 | C | - | - | 32.3 | C | - | - | - |
| | | SBT | 33.6 | C | 0.50 | 102 | 41.3 | D | 0.74 | #225 | 1250 |
| | | SBR | 4.0 | A | 0.20 | 13 | 7.2 | A | 0.24 | 35 | 150 |
| | | Overall | 18.2 | B | - | | 20.9 | C | - | - | - |
| Frontage Road (Rt 1) & Forbes Place | 18 | EB | 12.0 | B | - | - | 17.3 | B | - | - | - |
| | | EBT | 14.4 | B | 0.55 | 216 | 21.3 | C | 0.83 | 405 | - |
| | | EBR | 4.9 | A | 0.30 | 81 | 8.2 | A | 0.58 | 205 | 200 |
| | | WB | 5.3 | A | - | - | 6 | A | - | - | - |
| | | WBL | 3.8 | A | 0.40 | 16 | 12.3 | B | 0.41 | 64 | 150 |
| | | WBT | 5.4 | A | 0.52 | 152 | 5.3 | A | 0.53 | 155 | - |
| | | NB | 119.6 | F | 1.15 | #254 | 41.2 | D | 0.73 | 132 | 70 |
| | | Overall | 28.4 | C | - | - | 15.2 | B | - | - | - |

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

m Volume for 95th percentile queue is metered by upstream signal

**Table 6: No-Build and Full-Site Build Comparison Table**

| Int. Name | Int. # | Lane Group | AM | | | PM | | |
|---|---|---|---|---|---|---|---|---|
| | | | Delay (s) | | Difference | Delay (s) | | Difference |
| | | | No-Build | Build | | No-Build | Build | |
| High Street (Rt 100) & I-95 SB Off-Ramp (Exit 52) | 1 | WB | 47.4 | 46.6 | -2% | 41.5 | 43.0 | 4% |
| | | NB | 16.6 | 18.9 | 14% | 30.8 | 32.5 | 6% |
| | | SB | 11.6 | 13.8 | 19% | 23.6 | 25.9 | 10% |
| | | Overall | 19.9 | 22.0 | 11% | 31.8 | 33.6 | 6% |
| High Street (Rt 100) & I-95 NB On-Ramp (Exit 52) | 2 | EB | 26.3 | 26.3 | 0% | 14.0 | 14.0 | 0% |
| | | NB | 75.1 | 90.1 | 20% | 64.9 | 85.6 | 32% |
| | | NBL | 12.0 | 11.2 | -7% | 16.1 | 15.6 | -3% |
| | | NBT | 86.0 | 103.1 | 20% | 83.0 | 110.0 | 33% |
| | | SB | 95.8 | 94.8 | -1% | 91.6 | 102.2 | 12% |
| | | SBL | 62.4 | 62.8 | 1% | 53.1 | 53.0 | 0% |
| | | SBT | 102.1 | 100.8 | -1% | 96.3 | 107.9 | 12% |
| | | Overall | 72.9 | 78.3 | 7% | 70.7 | 84.8 | 20% |
| High Street (Rt 100) & Kimberly Avenue | 3 | EB | 24.4 | 24.4 | 0% | 30.5 | 30.6 | 0% |
| | | NB | 161.3 | 194.2 | 20% | 290.4 | 337.4 | 16% |
| | | SB | 46.0 | 47.0 | 2% | 51.1 | 52.1 | 2% |
| | | SBT | 73.8 | 73.4 | -1% | 70.2 | 70.4 | 0% |
| | | SBR | 2.4 | 2.5 | 4% | 1.7 | 1.6 | -6% |
| | | Overall | 77.7 | 89.4 | 15% | 120.2 | 137.6 | 14% |
| High Street (Rt 100) & Messina Drive | 4 | EB | 18.6 | 20.0 | 8% | 18.5 | 19.8 | 7% |
| | | WB | 8.6 | 9.2 | 7% | 10.7 | 11.5 | 7% |
| | | WBT | 18.7 | 20.2 | 8% | 19.8 | 21.3 | 8% |
| | | WBR | 5.8 | 6.2 | 7% | 5.7 | 6.1 | 7% |
| | | NB | 10.9 | 11.3 | 4% | 10.2 | 10.6 | 4% |
| | | NBL | 8.0 | 8.0 | 0% | 8.5 | 8.2 | -4% |
| | | NBR | 10.9 | 11.3 | 4% | 10.2 | 10.6 | 4% |
| | | SB | 13.1 | 13.4 | 2% | 13.7 | 14.0 | 2% |
| | | Overall | 12.1 | 12.6 | 4% | 12.6 | 13.1 | 4% |
| Main Street & Messina Drive | 5 | EB | 7.2 | 7.2 | 0% | 9.7 | 10.0 | 3% |
| | | WB | 5.6 | 5.6 | 0% | 7.4 | 7.4 | 0% |
| | | WBL | 4.8 | 4.8 | 0% | 5.4 | 5.4 | 0% |
| | | WBT | 5.6 | 5.6 | 0% | 7.5 | 7.6 | 1% |
| | | NB | 26.2 | 26.2 | 0% | 29.7 | 29.7 | 0% |
| | | SB | 7.6 | 7.6 | 0% | 9.1 | 9.1 | 0% |
| | | SBT | 33.5 | 33.5 | 0% | 33.5 | 33.5 | 0% |
| | | SBR | 6.5 | 6.5 | 0% | 5.7 | 5.7 | 0% |
| | | Overall | 7.3 | 7.3 | 0% | 9.6 | 9.8 | 2% |
| High Street (Rt 100) & Main Street | 6 | EB | 13.9 | 14.4 | 4% | 14.5 | 15.3 | 6% |
| | | EBT | 18.0 | 18.7 | 4% | 18.2 | 19.3 | 6% |
| | | EBR | 0.4 | 0.4 | 0% | 1.4 | 1.5 | 7% |
| | | WB | 17.1 | 18.0 | 5% | 22.3 | 24.6 | 10% |
| | | WBL | 14.0 | 14.5 | 4% | 13.9 | 14.7 | 6% |
| | | WBT | 17.3 | 18.2 | 5% | 23 | 25.4 | 10% |
| | | NB | 20.5 | 21.7 | 6% | 19.8 | 21.6 | 9% |
| | | NBL | 8.7 | 8.6 | -1% | 9.9 | 9.7 | -2% |
| | | NBT | 24.5 | 25.7 | 5% | 23.9 | 26.0 | 9% |
| | | SB | 12.1 | 12.5 | 3% | 14.2 | 14.4 | 1% |
| | | SBL | 11.5 | 11.8 | 3% | 13.3 | 13.5 | 2% |
| | | SBT | 13.7 | 13.9 | 1% | 15.8 | 15.9 | 1% |
| | | Overall | 15.4 | 16.1 | 5% | 17.6 | 18.8 | 7% |

**Table 6: No-Build and Full-Site Build Comparison Table (Cont.)**

| | | | AM | | | PM | | |
|---|---|---|---|---|---|---|---|---|
| Int. Name | Int. # | Lane Group | Delay (s) | | Difference | Delay (s) | | Difference |
| | | | No-Build | Build | | No-Build | Build | |
| Hemingway Avenue (Rt 142) & Saltonstall Parkway (Rt 1) | 7 | NB | 28.7 | 24.4 | -15% | 27.4 | 32.3 | 18% |
| | | NBL | 28.8 | 24.5 | -15% | 27.7 | 32.3 | 17% |
| | | NBT | 28.6 | 24.4 | -15% | 27.1 | 32.3 | 19% |
| | | SB | 40.0 | 40.3 | 1% | 49.9 | 50.7 | 2% |
| | | EB | 13.6 | 14.5 | 7% | 26.5 | 23.5 | -11% |
| | | EBL | 59.6 | 59.6 | 0% | 69.9 | 69.9 | 0% |
| | | EBT | 27.9 | 36.1 | 29% | 46.6 | 46.0 | -1% |
| | | EBR | 1.0 | 1.3 | 30% | 1.6 | 2.2 | 38% |
| | | WB | 29.9 | 36.3 | 21% | 46.6 | 47.4 | 2% |
| | | WBL | 62.6 | 63.8 | 2% | 81.0 | 85.4 | 5% |
| | | WBT | 27.3 | 33.7 | 23% | 39.8 | 39.2 | -2% |
| | | Overall | 23.5 | 23.3 | -1% | 31.3 | 31.2 | 0% |
| Hemingway Avenue (Rt 142) & Main Street | 8 | EB | 11.6 | 12.5 | 8% | 17.9 | 19.9 | 11% |
| | | EBL | 16.7 | 19.0 | 14% | 19.2 | 21.7 | 13% |
| | | EBT | 28.4 | 30.9 | 9% | 37.1 | 42.3 | 14% |
| | | EBR | 3.2 | 3.5 | 9% | 3.2 | 3.5 | 9% |
| | | WB | 21.1 | 23.4 | 11% | 25.7 | 29.1 | 13% |
| | | WBL | 17.1 | 19.4 | 13% | 22.7 | 26.6 | 17% |
| | | WBT | 24.2 | 26.4 | 9% | 28.7 | 31.7 | 10% |
| | | NB | 14.8 | 17.6 | 19% | 24.0 | 24.8 | 3% |
| | | NBL | 29.8 | 32.1 | 8% | 37.3 | 41.9 | 12% |
| | | NBT | 12.9 | 15.9 | 23% | 21.4 | 22.0 | 3% |
| | | SB | 20.1 | 21.7 | 8% | 26.2 | 27.2 | 4% |
| | | SBL | 30.5 | 33.5 | 10% | 37.1 | 40.6 | 9% |
| | | SBT | 19.7 | 21.5 | 9% | 25.6 | 26.7 | 4% |
| | | SBR | 18.5 | 18.0 | -3% | 20.6 | 19.4 | -6% |
| | | Overall | 15.9 | 18.3 | 15% | 23.5 | 25.1 | 7% |
| Hemingway Avenue (Rt 142) & Dodge Avenue | 9 | EB | 27.3 | 30.7 | 12% | 36.5 | 32.8 | -10% |
| | | WB | 23.8 | 21.9 | -8% | 26.0 | 24.0 | -8% |
| | | WBL | 31.8 | 29.2 | -8% | 26 | 24 | -8% |
| | | WBT | 0.0 | 0.0 | 0% | 26 | 24 | -8% |
| | | NB | 3.3 | 6.2 | 88% | 6.6 | 17.4 | 164% |
| | | SB | 14.2 | 21.2 | 49% | 21.2 | 49.1 | 132% |
| | | Overall | 9.8 | 14.5 | 48% | 16.5 | 33.4 | 102% |
| Coe Avenue (Rt 337) & Proto Drive | 10 | EB | 18.4 | 115.3 | 527% | 25.9 | 407.0 | 1471% |
| | | NBL | 0.2 | 0.9 | 350% | 0.0 | 0.8 | 7900% |
| | | Overall | 0.5 | 19.0 | 3700% | 2.4 | 100.5 | 4088% |
| Thompson Avenue & Dodge Avenue | 11 | EB | 8.8 | 9.0 | 2% | 10 | 10.4 | 4% |
| | | WB | 8.2 | 8.5 | 4% | 9.1 | 9.6 | 5% |
| | | NB | 8.3 | 8.5 | 2% | 8.8 | 9.1 | 3% |
| | | SB | 8.8 | 9.3 | 6% | 9.4 | 10.2 | 9% |
| | | Overall | 8.6 | 8.9 | 3% | 9.4 | 9.9 | 5% |
| Hemingway Avenue and Short Beach Road (Rt 142) at Coe Avenue (Rt 337) | 12 | EB | 35.1 | 34.8 | -1% | 35.3 | 35.3 | 0% |
| | | WB | 9.2 | 9.3 | 1% | 6.7 | 7.4 | 10% |
| | | WBL | 38.6 | 39.4 | 2% | 37.4 | 38.7 | 3% |
| | | WBT | 4.3 | 3.7 | -14% | 2.6 | 2.4 | -8% |
| | | NB | 12.0 | 15.1 | 26% | 21.4 | 26.8 | 25% |
| | | SB | 6.2 | 9.2 | 48% | 10.1 | 12.4 | 23% |
| | | SBL | 8.8 | 12.1 | 38% | 15.7 | 17.7 | 13% |
| | | SBT | 5.2 | 8.4 | 62% | 6.7 | 10.1 | 51% |
| | | Overall | 9.7 | 11.9 | 23% | 14.2 | 17.7 | 25% |

**Table 6: No-Build and Full-Site Build Comparison Table (Cont.)**

| Int. Name | Int. # | Lane Group | AM | | | PM | | |
|---|---|---|---|---|---|---|---|---|
| | | | Delay (s) | | Difference | Delay (s) | | Difference |
| | | | No-Build | Build | | No-Build | Build | |
| Hemingway Avenue & Messina Drive | 13 | EB | 29.5 | 45.9 | 56% | 47.8 | 111.7 | 134% |
| | | EBL | 38.2 | 61.8 | 62% | 66.2 | 161.9 | 145% |
| | | EBR | 10.5 | 11.5 | 10% | 11.4 | 12.5 | 10% |
| | | NB | 1.5 | 1.4 | -7% | 1.4 | 1.3 | -7% |
| | | NBL | 9.4 | 10.5 | 12% | 10.2 | 11.3 | 11% |
| | | NBT | 0.0 | - | 0% | 0.0 | 0.0 | 0% |
| | | Overall | 2.0 | 2.2 | 10% | 4.4 | 7.8 | 77% |
| Coe Avenue & Silver Sands Road | 14 | EB | 23.3 | 24.0 | 3% | 34.2 | 36.2 | 6% |
| | | WB | 8.6 | 8.6 | 0% | 11.8 | 11.7 | -1% |
| | | NB | 10.6 | 10.9 | 3% | 11.7 | 11.9 | 2% |
| | | SB | 4.9 | 4.9 | 0% | 9.6 | 9.6 | 0% |
| | | SBT | 9.1 | 9.3 | 2% | 14 | 14.2 | 1% |
| | | SBR | 2.7 | 2.8 | 4% | 2.9 | 2.9 | 0% |
| | | Overall | 10.8 | 11.1 | 3% | 16.4 | 17.1 | 4% |
| Silver Sands Road & South End Road | 15 | EB | 7.9 | 8.0 | 1% | 8.2 | 8.3 | 1% |
| | | WB | 7.1 | 7.2 | 1% | 7.9 | 8.0 | 1% |
| | | NB | 0.0 | 0.0 | 0% | 7.8 | 7.8 | 0% |
| | | SB | 7.6 | 7.8 | 3% | 8.3 | 8.5 | 2% |
| | | Overall | 7.6 | 7.7 | 1% | 8.1 | 8.2 | 1% |
| Kimberly Avenue & Forbes Place | 16 | EB | 11.0 | 11.0 | 0% | 11.6 | 11.7 | 1% |
| | | WB | 17.0 | 17.1 | 1% | 17.6 | 17.8 | 1% |
| | | NB | 16.4 | 16.5 | 1% | 13.0 | 13.0 | 0% |
| | | SB | 20.7 | 20.9 | 1% | 144.3 | 147.2 | 2% |
| | | Overall | 17.8 | 17.9 | 1% | 85.9 | 87.4 | 2% |
| Main Street & Forbes Place | 17 | EB | 13.3 | 13.3 | 0% | 15.1 | 15.1 | 0% |
| | | EBL | 13.3 | 13.3 | 0% | 14.8 | 14.8 | 0% |
| | | EBT | 13.2 | 13.3 | 1% | 15.2 | 15.2 | 0% |
| | | WB | 12.9 | 12.9 | 0% | 15.1 | 15.1 | 0% |
| | | WBT | 12.9 | 12.9 | 0% | 15.6 | 15.7 | 1% |
| | | WBR | 12.7 | 12.8 | 1% | 13.4 | 13.4 | 0% |
| | | NB | 33.0 | 33.0 | 0% | 30.2 | 30.2 | 0% |
| | | SB | 24.1 | 24.3 | 1% | 32.1 | 32.3 | 1% |
| | | SBT | 33.5 | 33.6 | 0% | 41.0 | 41.3 | 1% |
| | | SBR | 4.0 | 4.0 | 0% | 7.2 | 7.2 | 0% |
| | | Overall | 18.2 | 18.2 | 0% | 20.8 | 20.9 | 0% |
| Frontage Road (Rt 1) & Forbes Place | 18 | EB | 10.7 | 12.0 | 12% | 14.4 | 17.3 | 20% |
| | | EBT | 13.1 | 14.4 | 10% | 17.6 | 21.3 | 21% |
| | | EBR | 4.9 | 4.9 | 0% | 8.0 | 8.2 | 2% |
| | | WB | 4.9 | 5.3 | 8% | 5.3 | 6 | 13% |
| | | WBL | 3.6 | 3.8 | 6% | 10 | 12.3 | 23% |
| | | WBT | 5.0 | 5.4 | 8% | 4.8 | 5.3 | 10% |
| | | NB | 118.9 | 119.6 | 1% | 41.0 | 41.2 | 0% |
| | | Overall | 29.6 | 28.4 | -4% | 13.7 | 15.2 | 11% |

## 8.0 HALF-SITE BUILD 2029 ANALYSIS

The 2029 full-site build analysis projects the operations throughout the study area after the Tweed New Haven Airport expansion project has been completed with dual entrance points; one from Proto Drive and a second route through the City of New Haven. For analysis purposes, the site generated volumes used in the full-site analysis were halved for the half-site build analysis and the site generated trip distribution patterns remain the same. The results of the 2029 half-site build capacity analyses, are shown in **Table 7.** This analysis assumes that all intersections will maintain the same geometry, lane configurations, signing, and signal timing. The queue lengths were calculated assuming an average vehicle length of 25 feet. **Appendix I** contains details of the half-site build 2029 capacity analysis.

The 2029 build-year analysis presented in **Table 7** shows a slight overall improvement in operations throughout the study area from the full-site build scenario due to a reduction of site-generated traffic. The movements, approaches, and intersections that previously operated poorly during the 2029 no-build conditions continue to operate poorly. The following movements or intersections that operated poorly during the full-site build scenario have improved in LOS during the half-site build scenario:

- Intersection 1: High Street (Route 100) & I-95 SB Off-Ramp (Exit 52)
    - The 95$^{th}$ percentile queue for the southbound approach no longer exceeds the available storage length for the morning peak-period.
- Intersection 2: High Street (Route 100) & I-95 NB On-Ramp (Exit 52)
    - The northbound approach maintains operations at a LOS E between the no-build and half-site build scenarios during the evening peak-hour.
    - The 95$^{th}$ percentile queue for the southbound through movement no longer exceeds the available storage length.
    - The overall intersection during the evening peak-hour improves from a LOS F during the full-site build scenario to a LOS E during the half-site build scenario.
- Intersection 10: Coe Avenue (Route 337) & Proto Drive
    - The eastbound approach improves to a LOS D from a LOS F during the morning peak-hour between the full-site and half-site build scenario.
    - The overall intersection level of service during the evening peak-hour improves from a LOS F during the full-site build scenario to a LOS C during the half-site build scenario.
- Intersection 13: Hemingway Avenue & Messina Drive
    - The eastbound left-turn improves during the morning peak from a LOS F in the full-site build scenario to a LOS E during the half-site build scenario.

**Table 7: Half-Site Build 2029 Capacity Analysis Results**

| | | | AM | | | | PM | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Int. Name | Int. # | Lane Group | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Available Storage (ft) |
| High Street (Rt 100) & I-95 SB Off-Ramp (Exit 52) | 1 | WB | 47.2 | D | 0.78 | 234 | 42.4 | D | 0.88 | 399 | 1000 |
| | | NB | 18.2 | B | 0.41 | m186 | 32.1 | C | 0.55 | m209 | 425 |
| | | SB | 12.6 | B | 0.62 | 397 | 24.6 | C | 0.7 | 386 | 400 |
| | | Overall | 20.9 | C | - | - | 32.7 | C | - | - | - |
| High Street (Rt 100) & I-95 NB On-Ramp (Exit 52) | 2 | EB | 26.3 | C | 0.68 | 220 | 14.0 | B | 0.35 | 123 | 400 |
| | | NB | 83.4 | F | - | - | 68.8 | E | - | - | - |
| | | NBL | 11.7 | B | 0.28 | m30 | 15.9 | B | 0.61 | m70 | 200 |
| | | NBT | 95.5 | F | 1.13 | m#293 | 88.2 | F | 1.11 | m#300 | 200 |
| | | SB | 95.7 | F | - | - | 92.0 | F | - | - | - |
| | | SBL | 62.6 | E | 0.75 | m#181 | 53.0 | D | 0.52 | m91 | 310 |
| | | SBT | 101.8 | F | 1.03 | #398 | 96.6 | F | 1.1 | #442 | 400 |
| | | Overall | 76.1 | E | - | - | 72.7 | E | - | - | - |
| High Street (Rt 100) & Kimberly Avenue | 3 | EB | 24.4 | C | 0.44 | 193 | 30.3 | C | 0.64 | 333 | 850 |
| | | NB | 177.6 | F | 1.29 | #604 | 313.8 | F | - | #654 | 1000 |
| | | SB | 46.7 | D | - | - | 50.7 | D | 1.61 | - | - |
| | | SBT | 73.9 | E | 0.95 | m#449 | 69.1 | E | 1.07 | m#464 | 185 |
| | | SBR | 2.4 | A | 0.47 | m0 | 1.6 | A | 0.37 | m0 | 185 |
| | | Overall | 83.5 | F | - | - | 128.4 | F | - | - | - |
| High Street (Rt 100) & Messina Drive | 4 | EB | 19.2 | B | 0.15 | 35 | 19.1 | B | 0.14 | 34 | 250 |
| | | WB | 8.9 | A | - | - | 11.1 | B | - | - | - |
| | | WBT | 19.5 | B | 0.12 | 43 | 20.5 | C | 0.23 | 72 | 670 |
| | | WBR | 6.0 | A | 0.35 | 45 | 5.9 | A | 0.35 | 44 | 670 |
| | | NB | 11.1 | B | - | - | 10.4 | B | - | - | 195 |
| | | NBL | 8.0 | A | 0.00 | 2 | 8.5 | A | 0.01 | 5 | 195 |
| | | NBR | 11.1 | B | 0.36 | 100 | 10.4 | B | 0.32 | 97 | - |
| | | SB | 13.3 | B | 0.50 | 98 | 13.8 | B | 0.52 | 109 | 160 |
| | | Overall | 12.4 | B | - | - | 12.8 | B | - | - | - |
| Main Street & Messina Drive | 5 | EB | 7.2 | A | 0.24 | 67 | 10.0 | A | 0.33 | 117 | 250 |
| | | WB | 5.6 | A | - | - | 7.4 | A | - | - | - |
| | | WBL | 4.8 | A | 0.01 | 3 | 5.4 | A | 0.05 | 14 | 230 |
| | | WBT | 5.6 | A | 0.21 | 50 | 7.6 | A | 0.28 | 114 | 230 |
| | | NB | 26.2 | C | 0.18 | 20 | 29.7 | C | 0.28 | 14 | - |
| | | SB | 7.6 | A | - | - | 9.1 | A | - | - | - |
| | | SBT | 33.5 | C | 0.05 | 14 | 33.5 | C | 0.13 | 32 | 270 |
| | | SBR | 6.5 | A | 0.35 | 36 | 5.7 | A | 0.32 | 43 | 50 |
| | | Overall | 7.3 | A | - | - | 9.7 | A | - | - | - |
| High Street (Rt 100) & Main Street | 6 | EB | 14.1 | B | - | - | 14.9 | B | - | - | - |
| | | EBT | 18.3 | B | 0.45 | 121 | 18.8 | B | 0.55 | 176 | 230 |
| | | EBR | 0.4 | A | 0.13 | 0 | 1.4 | A | 0.15 | 10 | 230 |
| | | WB | 17.6 | B | - | - | 23.4 | C | - | - | - |
| | | WBL | 14.2 | B | 0.04 | 14 | 14.3 | B | 0.12 | 27 | 250 |
| | | WBT | 17.8 | B | 0.41 | 111 | 24.2 | C | 0.71 | #268 | 250 |
| | | NB | 21.1 | C | - | - | 20.7 | C | - | - | - |
| | | NBL | 8.6 | A | 0.15 | 28 | 9.8 | A | 0.18 | 29 | 500 |
| | | NBT | 25.1 | C | 0.58 | 118 | 25.0 | C | 0.56 | 99 | 80 |
| | | SB | 12.3 | B | - | - | 14.3 | B | - | - | - |
| | | SBL | 11.7 | B | 0.49 | 91 | 13.3 | B | 0.5 | 95 | 190 |
| | | SBT | 13.9 | B | 0.18 | 62 | 15.9 | B | 0.26 | 81 | 190 |
| | | Overall | 15.8 | B | - | - | 18.2 | B | - | - | - |

**Table 7: Half-Site Build 2029 Capacity Analysis Results (Cont.)**

| | | | AM | | | | PM | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Int. Name | Int. # | Lane Group | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Available Storage (ft) |
| Hemingway Avenue (Rt 142) & Saltonstall Parkway (Rt 1) | 7 | NB | 25.2 | C | - | - | 29.4 | C | - | - | - |
| | | NBL | 25.3 | C | 0.57 | 378 | 29.8 | C | 0.64 | 361 | 400 |
| | | NBT | 25.2 | C | 0.57 | 376 | 29 | C | 0.62 | 346 | 400 |
| | | SB | 40.3 | D | 0.10 | 18 | 50.7 | D | 0.13 | 18 | - |
| | | EB | 14.5 | B | - | - | 24.9 | C | - | - | - |
| | | EBL | 59.6 | E | 0.25 | 43 | 69.9 | E | 0.58 | 101 | 70 |
| | | EBT | 33.3 | C | 0.32 | 156 | 46.3 | D | 0.73 | 288 | - |
| | | EBR | 1.1 | A | 0.38 | 26 | 1.8 | A | 0.53 | 29 | 250 |
| | | WB | 36.3 | C | - | - | 47 | D | - | - | - |
| | | WBL | 63.2 | E | 0.41 | 70 | 83.0 | F | 0.75 | #162 | 140 |
| | | WBT | 31.1 | C | 0.41 | 228 | 39.5 | D | 0.54 | 233 | - |
| | | Overall | 23.2 | C | - | - | 31 | C | - | - | - |
| Hemingway Avenue (Rt 142) & Main Street | 8 | EB | 12.0 | B | - | - | 18.7 | B | - | - | - |
| | | EBL | 17.8 | B | 0.11 | 35 | 20.5 | C | 0.16 | 49 | 250 |
| | | EBT | 29.6 | C | 0.34 | 87 | 39.2 | D | 0.61 | 164 | 360 |
| | | EBR | 3.3 | A | 0.30 | 37 | 3.4 | A | 0.35 | 33 | 225 |
| | | WB | 22.2 | C | - | - | 27.2 | C | - | - | - |
| | | WBL | 18.2 | B | 0.15 | 40 | 24.4 | C | 0.42 | 96 | 150 |
| | | WBT | 25.3 | C | 0.24 | 57 | 30.1 | C | 0.35 | 110 | - |
| | | NB | 17.3 | B | - | - | 24.6 | C | - | - | - |
| | | NBL | 30.9 | C | 0.44 | 96 | 39.1 | D | 0.57 | 147 | 250 |
| | | NBT | 15.7 | B | 0.60 | 272 | 22.0 | C | 0.66 | 276 | 400 |
| | | SB | 21.0 | C | - | - | 27.2 | C | - | - | - |
| | | SBL | 32.0 | C | 0.12 | 28 | 38.8 | D | 0.34 | 66 | 110 |
| | | SBT | 20.7 | C | 0.51 | 151 | 26.8 | C | 0.67 | 224 | 330 |
| | | SBR | 18.5 | B | 0.05 | 25 | 20 | B | 0.12 | 47 | 330 |
| | | Overall | 17.7 | B | - | - | 24.5 | C | - | - | - |
| Hemingway Avenue (Rt 142) & Dodge Avenue | 9 | EB | 29.4 | C | 0.71 | 81 | 35.2 | D | 0.73 | 131 | 500 |
| | | WB | 23.1 | C | - | - | 25.5 | C | - | - | - |
| | | WBL | 30.8 | C | 0.05 | 9 | 26 | C | 0.01 | 4 | - |
| | | WBT | 0.0 | A | 0.00 | 0 | 25 | C | 0.01 | 4 | - |
| | | NB | 3.8 | A | 0.47 | 98 | 10.3 | B | 0.57 | 225 | 930 |
| | | SB | 16.3 | B | 0.45 | 213 | 27.9 | C | 0.79 | #432 | 210 |
| | | Overall | 11.2 | B | - | - | 21 | C | - | - | - |
| Coe Avenue (Rt 337) & Proto Drive | 10 | EB | 33.8 | D | 0.55 | 76 | 110.2 | F | 1.05 | 284 | - |
| | | NBL | 0.6 | A | 0.01 | 1 | 0.4 | A | 0.0 | 1 | - |
| | | Overall | 3.7 | A | - | - | 20.4 | A | - | - | - |
| Thompson Avenue & Dodge Avenue | 11 | EB | 8.9 | A | 0.23 | - | 10.2 | B | 0.31 | - | 500 |
| | | WB | 8.3 | A | 0.14 | - | 9.3 | A | 0.23 | - | 300 |
| | | NB | 8.4 | A | 0.13 | - | 9 | A | 0.16 | - | 535 |
| | | SB | 9.0 | A | 0.21 | - | 9.8 | A | 0.26 | - | 420 |
| | | Overall | 8.7 | A | - | - | 9.7 | A | - | - | - |
| Hemingway Avenue and Short Beach Road (Rt 142) at Coe Avenue (Rt 337) | 12 | EB | 35.1 | D | 0.28 | 31 | 35.3 | D | 0.36 | 51 | 110 |
| | | WB | 9.1 | A | - | - | 6.9 | A | - | - | - |
| | | WBL | 39.1 | D | 0.33 | 63 | 37.9 | D | 0.25 | 49 | 160 |
| | | WBT | 3.9 | A | 0.48 | 33 | 2.5 | A | 0.36 | 24 | 750 |
| | | NB | 14.0 | B | 0.40 | 201 | 23.3 | C | 0.61 | 260 | 750 |
| | | SB | 7.3 | A | - | - | 11.3 | B | - | - | - |
| | | SBL | 10.5 | B | 0.35 | 135 | 17.2 | B | 0.54 | m238 | 180 |
| | | SBT | 6.2 | A | 0.25 | 152 | 8.3 | A | 0.27 | 191 | 950 |
| | | Overall | 10.7 | B | - | - | 15.7 | B | - | - | - |

**Table 7: Half-Site Build 2029 Capacity Analysis Results (Cont.)**

| | | | AM | | | | PM | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Int. Name | Int. # | Lane Group | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Delay (s) | LOS | V/C | 95th %tile Queue (ft) | Available Storage (ft) |
| Hemingway Avenue & Messina Drive | 13 | EB | 35.4 | E | - | - | 69.3 | F | - | - | - |
| | | EBL | 46.8 | E | 0.33 | 32 | 98.3 | F | 0.77 | 111 | 275 |
| | | EBR | 11.0 | B | 0.03 | 2 | 11.9 | B | 0.08 | 7 | 275 |
| | | NB | 1.4 | A | - | - | 1.4 | A | - | - | - |
| | | NBL | 9.9 | A | 0.17 | 16 | 10.7 | B | 0.17 | 15 | 100 |
| | | NBT | 0.0 | - | 0.27 | 0 | 0.0 | - | 0.26 | 0 | - |
| | | Overall | 2.0 | A | - | - | 5.5 | A | - | - | - |
| Coe Avenue & Silver Sands Road | 14 | EB | 23.8 | C | 0.66 | 119 | 35.2 | D | 0.83 | #197 | - |
| | | WB | 8.6 | A | 0.13 | 25 | 11.8 | B | 0.24 | 35 | 700 |
| | | NB | 10.7 | B | 0.40 | 113 | 11.8 | B | 0.42 | 82 | - |
| | | SB | 4.9 | A | - | - | 9.6 | A | - | - | - |
| | | SBT | 9.2 | A | 0.19 | 53 | 14.1 | B | 0.52 | 135 | 610 |
| | | SBR | 2.8 | A | 0.35 | 29 | 2.9 | A | 0.31 | 28 | 610 |
| | | Overall | 11.0 | B | - | - | 16.7 | B | - | - | - |
| Silver Sands Road & South End Road | 15 | EB | 8.0 | A | 0.14 | - | 8.2 | A | 0.1 | - | 380 |
| | | WB | 7.2 | A | 0.09 | - | 7.9 | A | 0.18 | - | 570 |
| | | NB | 0.0 | A | 0.00 | - | 7.8 | A | 0.01 | - | - |
| | | SB | 7.7 | A | 0.08 | - | 8.4 | A | 0.18 | - | 450 |
| | | Overall | 7.7 | A | - | - | 8.2 | A | - | - | - |
| Kimberly Avenue & Forbes Place | 16 | EB | 11.0 | B | 0.12 | - | 11.7 | B | 0.16 | - | 235 |
| | | WB | 17.1 | C | 0.60 | - | 17.6 | C | 0.59 | - | 860 |
| | | NB | 16.5 | C | 0.56 | - | 13.0 | B | 0.37 | - | 500 |
| | | SB | 20.8 | C | 0.68 | - | 145.2 | F | 1.25 | - | - |
| | | Overall | 17.9 | C | - | - | 86.4 | F | - | - | 70 |
| Main Street & Forbes Place | 17 | EB | 13.3 | B | - | - | 15.1 | B | - | - | - |
| | | EBL | 13.3 | B | 0.12 | 47 | 14.8 | B | 0.17 | 49 | 200 |
| | | EBT | 13.3 | B | 0.26 | 131 | 15.2 | B | 0.37 | 177 | 350 |
| | | WB | 12.9 | B | - | - | 15.1 | B | - | - | - |
| | | WBT | 12.9 | B | 0.22 | 103 | 15.6 | B | 0.41 | 200 | 300 |
| | | WBR | 12.8 | B | 0.11 | 49 | 13.4 | B | 0.15 | 66 | 300 |
| | | NB | 33.0 | C | 0.48 | 88 | 30.2 | C | 0.37 | 61 | 730 |
| | | SB | 24.2 | C | - | - | 32.2 | C | - | - | - |
| | | SBT | 33.5 | C | 0.50 | 101 | 41.2 | D | 0.74 | #223 | 1250 |
| | | SBR | 4.0 | A | 0.20 | 13 | 7.2 | A | 0.24 | 35 | 150 |
| | | Overall | 18.2 | B | - | | 20.8 | C | - | - | - |
| Frontage Road (Rt 1) & Forbes Place | 18 | EB | 11.3 | B | - | - | 15.7 | B | - | - | - |
| | | EBT | 13.7 | B | 0.50 | 191 | 19.2 | B | 0.77 | 362 | - |
| | | EBR | 4.9 | A | 0.30 | 81 | 8.1 | A | 0.58 | 205 | 200 |
| | | WB | 5.1 | A | - | - | 5.8 | A | - | - | - |
| | | WBL | 3.7 | A | 0.13 | 16 | 12.4 | B | 0.41 | 64 | 150 |
| | | WBT | 5.2 | A | 0.50 | 140 | 5 | A | 0.49 | 140 | - |
| | | NB | 119.6 | F | 1.15 | #254 | 41.1 | D | 0.72 | 132 | 70 |
| | | Overall | 29.0 | C | - | - | 14.3 | B | - | - | - |

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

m Volume for 95th percentile queue is metered by upstream signal

## 9.0 SAFETY ANALYSIS

Historical crash data was evaluated for each of the study intersections. The latest available data was obtained from the Connecticut Crash Data Repository for the period between January 1, 2019 and December 31, 2022. Data from the year 2020 has been excluded since the onset of the Covid-19 pandemic is not representative of typical traffic operations.

A total of 432 crashes were reported at all 18 intersections throughout the three-year period. A significant number of crashes were categorized as rear-end and angle crashes accounting for 39 percent and 25 percent of total crashes respectively. Forty percent of the total crashes occurred between the hours of 10 a.m. and 4 p.m., followed by another 29 percent of crashes occurring in the evening commute hours between 4 p.m. and 7 p.m. A wide majority of crashes occurred on dry pavement during daylight conditions. The crashes were almost evenly spread across days of the week and seasons of the year. Friday was the most common day of the week for 18 percent of total crashes and the crash totals in the summer did reduce slightly as compared to the other three seasons. The crashes were also evenly distributed between the three whole years. Throughout our three years of safety analysis at the eighteen intersections, there were no fatalities reported. Slightly under a quarter of the crashes result in injury with the remainder of crashes resulting in property damage only. There were eleven total pedestrian and bicycle related collisions during the three years with all but two resulting in injury. A summary of all crashes for all intersections in the entire study area is provided in **Table 8.**

The following three intersections within the study area had higher annual average crashes as compared to the other fifteen analyzed:

- Intersection 8: Hemingway Avenue (Route 142) at Main Street (Route 100) – 54 total crashes (18 crashes/year)
- Intersection 16: Kimberly Avenue at Forbes Place – 50 total crashes (17 crashes/year)
- Intersection 2: High Street (Route 100) at Laurel Street and I-95NB On-Ramp – 45 total crashes (15 crashes/year).

These three intersections combined account for over a third of the total crashes occurring at all study area intersections.

Intersection 8 is a signalized intersection of two arterial routes where a high volume of traffic would be expected. The most common crash type at this intersection is rear-end followed by angle and sideswipe collisions. Although rear-end collisions are typically expected at signalized intersections, it could be beneficial to recalculate the clearance times of the intersection in order to avoid unexpected stopping. Besides the crash types, the other crash data does not indicate a specific pattern of common crashes. It would be expected that a high number of collisions result from driver error, which could be exacerbated with an increase in traffic volume and longer delay times.

Intersection 16 is a four-way intersection with a three-way stop and a free-flowing southbound approach. The approaches of this intersection are local roadways in close proximity to U.S. Route 1. Angle collisions account for almost 80 percent of the collisions at this intersection. The

signing orientation of this intersection is atypical and may interfere with driver expectations even though the stop signs on the northbound, eastbound, and westbound approaches includes signage that the southbound traffic does not stop. The high number of angle collisions indicates that this signage may not be effective in directing drivers. Additionally, the number of crashes has increased by over 100 percent between 2021 and 2022, which may illustrate a worsening issue. The northbound approach at the adjacent intersection 18 currently has 95$^{th}$ percentile queues that exceed the available storage length during both the morning and evening peak-hours. With queues extending past intersection 18 into intersection 16, in addition to added traffic volumes, it can aggravate drivers and cause more aggressive driving. Other improvements may be investigated at this intersection to reduce the high number of angle collisions. Installing a traffic signal has been identified by the CMF Clearing House to reduce angle collisions in urban areas by 67 percent. Signalization would require a MUTCD compliant signal warrant analysis.

Intersection 2 is a signalized intersection of a minor arterial, major collector, and an interstate on-ramp, where a high volume of traffic could be expected. Approximately two-thirds of the total crashes at this intersection are classified as rear-end collisions. This may be slightly alleviated by recalculation of clearance intervals to better match drivers' expectations. However, the 2023 existing capacity analysis indicates that this intersection operates poorly at a LOS E during both the morning and evening peak-hours with the northbound and southbound approaches along Route 100 each operating at a LOS E. During site visits, this intersection has commonly been observed as being congested with high delay times. Lengthy delay times and increased traffic congestion may lead to more aggressive driving in an attempt to pass through the intersection. This aggressive driving can cause rear-end collisions due to drivers' error.

The detailed tabular summaries of crashes for all eighteen intersections are provided in **Appendix J**.

**Table 8: Study Area Safety Analysis Results**

| Crash Type | # of Crashes |
|---|---|
| Rear-End | 167 |
| Moving/Fixed Object | 21 |
| Angle | 153 |
| Sideswipe | 63 |
| Head-On | 11 |
| Pedestrian/Bicyclist | 11 |
| Overturn | 1 |
| Other | 5 |

| Time of Day | # of Crashes |
|---|---|
| 00:00-06:00 | 15 |
| 06:00-10:00 | 63 |
| 10:00-16:00 | 174 |
| 16:00-19:00 | 124 |
| 19:00-00:00 | 56 |

| Pavement Conditions | # of Crashes |
|---|---|
| Dry | 375 |
| Wet | 45 |
| Snow | 12 |

| Light Conditions | # of Crashes |
|---|---|
| Daylight | 328 |
| Dark-Not Lighted | 19 |
| Dark-Lighted | 75 |
| Dusk/Dawn | 10 |

| Day of Week | # of Crashes |
|---|---|
| Sunday | 44 |
| Monday | 73 |
| Tuesday | 67 |
| Wednesday | 51 |
| Thursday | 64 |
| Friday | 79 |
| Saturday | 54 |

| Time of Year | # of Crashes |
|---|---|
| December-February | 110 |
| March-May | 110 |
| June-August | 99 |
| September-November | 113 |

| Crash Severity | # of Crashes |
|---|---|
| Fatal | 0 |
| Injury | 99 |
| Property Damage Only | 333 |

| Year | # of Crashes |
|---|---|
| 2019 | 153 |
| 2021 | 139 |
| 2022 | 140 |

| Number of Pedestrian Collisions | | | |
|---|---|---|---|
| Year | 2019 | 2021 | 2022 |
| Total | 1 | 2 | 2 |
| Injury | 1 | 1 | 2 |

| Number of Bicycle Collisions | | | |
|---|---|---|---|
| Year | 2019 | 2021 | 2022 |
| Total | 2 | 3 | 1 |
| Injury | 2 | 2 | 1 |

## 10.0 CONCLUSIONS

This report evaluated the existing and future conditions at eighteen intersections in East Haven to determine how the proposed expansion of Tweed New Haven Airport will impact the local traffic and quality of life for East Haven residents. The 2023 existing traffic conditions were evaluated to establish a baseline of operations. Currently, there are a few approaches and intersections operating poorly during both the morning and evening peak periods. The airport expansion project is projected to be completed in 2029, where additional no-build analysis was performed after projecting future volumes. Due to the increased traffic volume from ambient growth, the poorly operating locations from the 2023 conditions were slightly worsened. During both existing and no-build conditions, the main locations of concern are Intersection 2 (High Street & I-95 NB On-Ramp) and Intersection 3 (High Street & Kimberly Avenue). These two intersections currently operate overall at poor levels of service with high delays, multiple failing lane groups, and 95$^{th}$ percentile queues that exceed the available storage length.

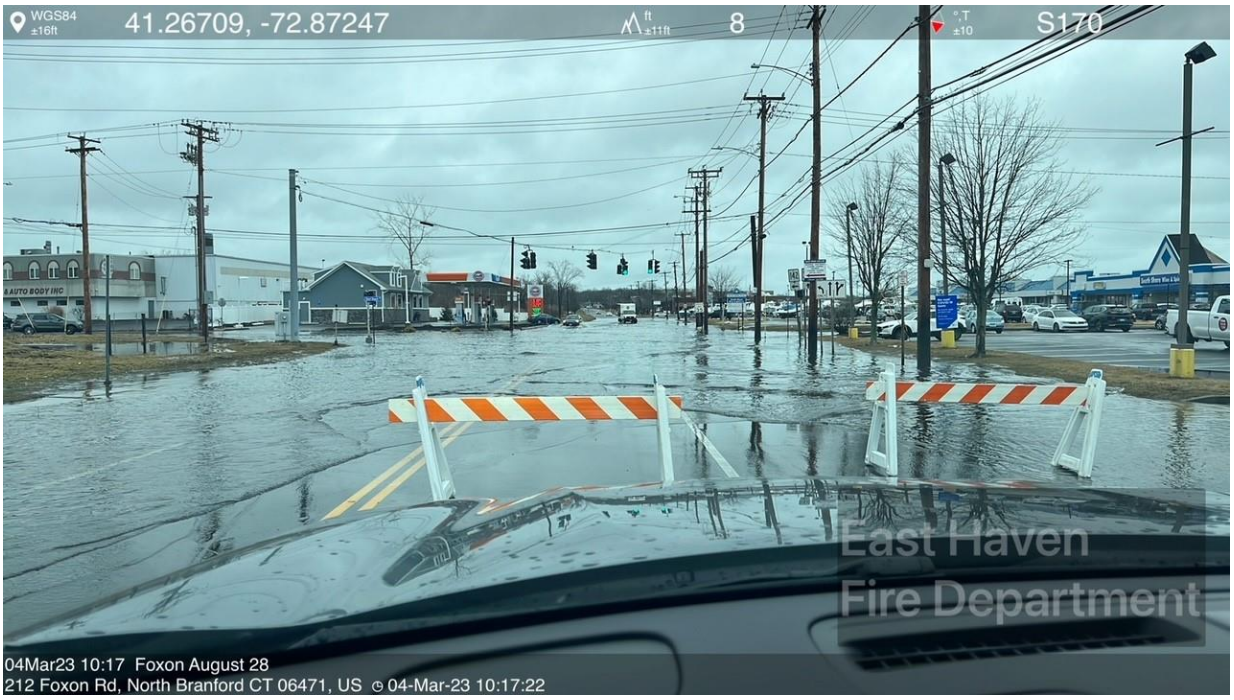
The 2029 build conditions were analyzed with full-site generated traffic volumes from the airport expansion and with half of those generated volumes for the half-site generated traffic scenario to determine the impact if dual site entrances were utilized for the new airport. After the full-site traffic was distributed throughout the study area, the poorly operating conditions from the no-build scenario were worsened and additional locations, which previously operated adequately, degraded into undesirable levels of service or queue lengths. Specifically, Intersection 10 (Coe Avenue & Proto Drive) significantly degrades as this is the main intersection where all site-generated vehicles will travel through. Although the half-site generated traffic does have a slight decreased impact to the study area due to the reduced generated traffic, the results are not significantly different from those of the full-site generated traffic volumes.

The study area already experiences a high volume of traffic during the morning and evening commuting peak-hours such that there are already poorly operating locations during the 2023 existing and 2029 no-build conditions. The site generated traffic volumes for both the half-site and full-site scenarios exacerbate these current problem locations. Improvements for these locations that currently experience poor levels of service, high delays, and overly long 95$^{th}$ percentile queues should be investigated and remediated prior to the addition of any airport traffic.

Additionally, major improvements at Intersection 10 (Coe Avenue & Proto Drive) and along Proto Drive would be required to accommodate any generated airport traffic, in addition to the current industrial traffic. Furthermore, the airport expansion may have an impact on roadway safety and general quality of life throughout East Haven, which is one of the 25 distressed municipalities in Connecticut and prone to flooding and other natural disasters. Proper investigation and recommended improvements shall be conducted into these areas to avert potential negative impacts.

# Appendix B

# Flooding Documentation


WGS84 ±16ft
41.26709, -72.87247
ft ±11ft
8
°T ±10
S170
East Haven Fire Department
04Mar23 10:17 Foxon August 28
212 Foxon Rd, North Branford CT 06471, US 04-Mar-23 10:17:22


WGS84 ±15ft
41.26674, -72.87257
ft ±12ft
5
°T ±10
SW206
East Haven Fire Department
14Mar23 07:32 Foxon August 28
10 Hemingway Ave, East Haven CT 06512, US 14-Mar-23 07:32:50


WGS84 ±18ft
41.26670, -72.87257
ft ±13ft
12
°T ±10
SE154
East Haven Fire Department
14Mar23 07:33 Foxon August 28
10 Hemingway Ave, East Haven CT 06512, US 14-Mar-23 07:33:19

# Appendix C

# Hemingway Coe Avenue Corridor Study

Final Report

# Hemingway Coe Avenue Corridor Study

CDM Smith

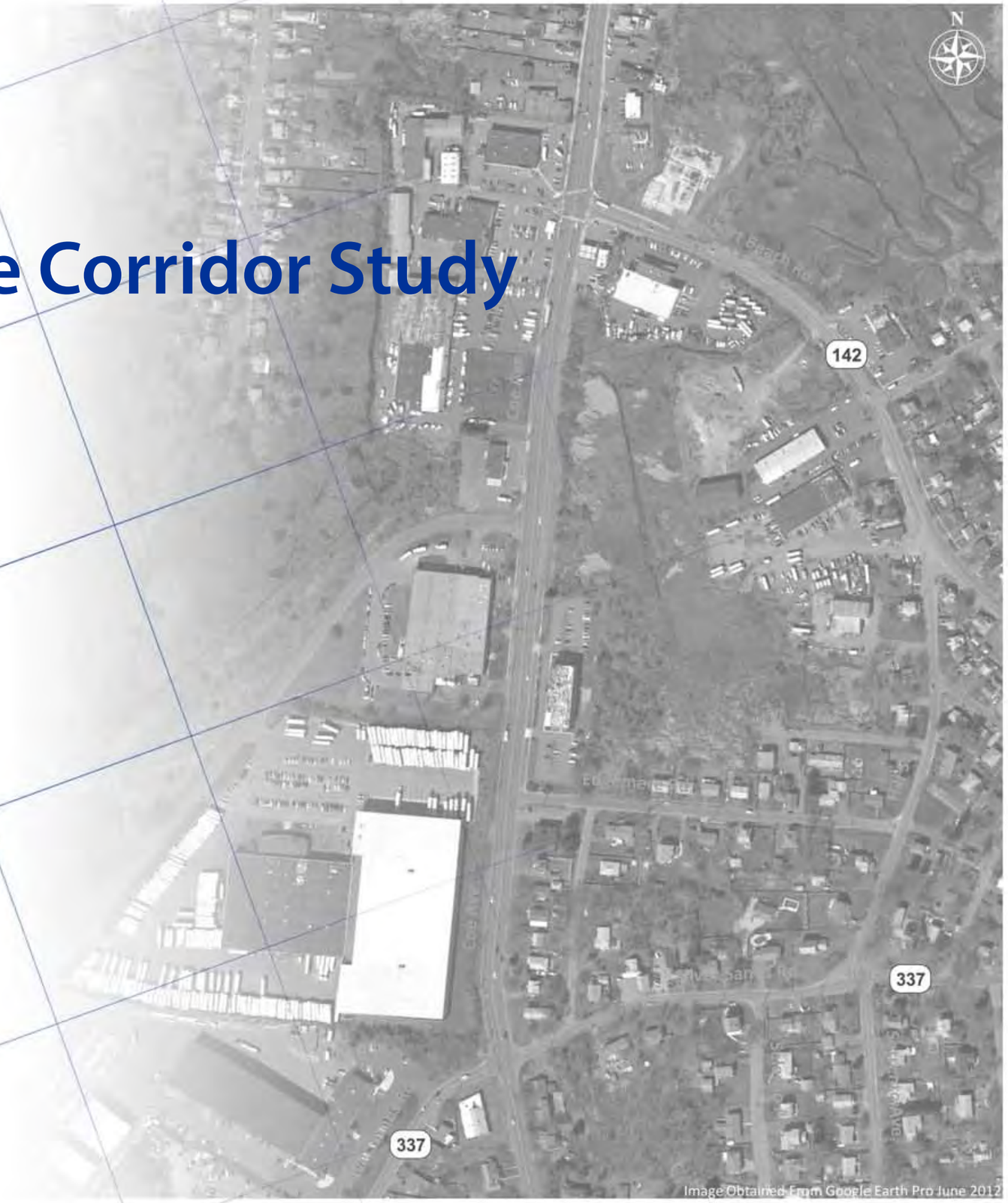
SCRCOG
SOUTH CENTRAL REGIONAL COUNCIL OF GOVERNMENTS

Image Obtained From Google Earth Pro June 2012

Final Report

# Hemingway Coe Avenue Corridor Study

June 2012



# TABLE OF CONTENTS

# 1 INTRODUCTION

This chapter provides an introduction on the study process and contents of this report.

## 1.1 *Study Background*

The South Central Regional Council of Governments (SCRCOG) is the designated Metropolitan Planning Organization (MPO) for the New Haven area. The SCRCOG has undertaken the Hemingway Avenue/Coe Avenue Corridor Study at the request of the Town of East Haven. CDM Smith is the prime consultant to assist the SCRCOG and the Town of East Haven on this project.

## 1.2 *Study Purpose*

The purpose of this study was to work with the Town of East Haven to identify solutions on an existing flooding issue on Hemingway Avenue and Coe Avenue. In addition, the town is seeking assistance to explore potential re-alignment options for Proto Drive in order to better accommodate development in the existing industrial park.

The specific study objectives are:

- Inventory existing roadway and geometric conditions.
- Identify existing flooding issues in order to elevate the intersection of Hemingway Avenue and Short Beach Road (Routes and 142) to reduce flooding and improve safety, emergency response, and access to portions of East Haven during storm events.
- Conduct a high level evaluation of the roadway grades and identify potential mitigation options on the Hemingway Avenue and Coe Avenue corridor that alleviate flood impacts to regional travel while minimizing grading impacts and maintaining safe access to existing properties adjacent to the roadways.
- Conduct level of service and safety analysis on the Hemingway and Coe Avenue corridors.
- Suggest alternative re-alignment options for Proto Drive based on available engineering data and existing environmental resource mapping.
- Develop an order of magnitude cost estimate for roadway work.
- Develop a list of action items or “Next Steps” for the town to advance the design and implement construction.

## 1.3 *Study Area*

The study limits for this project are Hemingway Avenue and Coe Avenue between Short Beach Road and Proto Drive (see **Figure 1.1**). A portion of Proto Drive has been included to study the potential re-alignment options.

## 1.4 *Meetings with Town*

The following is a list of meetings conducted with the town during the study process:

- Project Kick-off Meeting – May 24, 2012
- Project Meeting with Town Engineer – June 15, 2012
- Final Presentation to the Town –June 29, 2012

## 1.5 *Report Contents*

This report is broken into the following sections:

- **Existing Conditions** – This chapter documents the existing conditions along the Hemingway and Coe Avenue corridors relative to roadway conditions, traffic conditions, safety, environmental resources, and land use.
- **Realignment of Proto Drive** – This chapter studies the potential options to realign Proto Drive in order that the town can optimize future industrial development (new construction and expansion of existing uses) along Proto Drive. This analysis will also provide an initial determination of potential wetland impacts based on available wetland mapping.
- **Hemingway Avenue – Coe Avenue Concept Plan** – This chapter reviews the existing geometric conditions (plan and profile) as well as drainage and flooding issues associated with the existing roads, and provides a preliminary recommendation of a plan and profile that could alleviate flooding while minimizing property impacts.
- **Next Steps** – This chapter summarizes the results of the preliminary analysis and outlines next steps to advance this project to enable further review and discussions with state and federal land use and environmental protection agencies (DEEP, U.S. Army Corps of Engineers, and others) and to prepare engineering and design documents.

# 2 EXISTING CONDITIONS

This chapter discusses existing conditions in the project area.

## 2.1 *Roadway Conditions*

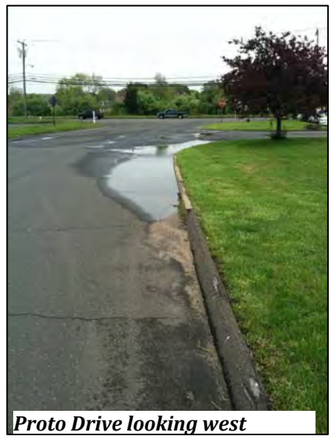
The following is a list of roadways within the study area:

**Hemingway Avenue (S.R. 142)**


*Coe Avenue looking south*

Hemingway Avenue (also known as S.R. 142) is a four lane arterial roadway that is oriented in a north-south direction. It provides the principal means of access to the southern portion of the Town of East Haven and connects this shoreline area to the town center and to Interstate 95 to the north. Land uses in the area primarily consist of industrial, commercial and retail properties. The posted speed limit on Hemingway Avenue is 35 miles per hour. The travel lanes are 11 feet wide; in addition, 2 foot wide paved shoulders are generally provided on the outside of each travel lane. The intersection of Hemingway Avenue/Coe Avenue (S.R. 337)/Short Beach Road (S.R. 337) is signalized.

**Coe Avenue (S.R. 337)**


*Proto Drive looking west*

Coe Avenue (also known as S.R. 337) is the continuation of the Hemingway Avenue arterial and maintains a north-south orientation. It begins at the southerly terminus of Hemingway Avenue at its intersection with Short Beach Road. Coe Avenue is also a four lane roadway. Land uses in the area primarily consist of industrial, commercial, retail, and residential properties. The posted speed limit on Coe Avenue is 35 miles per hour. The travel lanes are 11 feet wide; in addition, 2 foot wide paved shoulders are generally provided on the outside of each travel lane.

**Proto Drive**

Proto Drive is a two-lane, town owned road which provides access to several industrial properties from Hemingway and Coe Avenues. It is a dead-end street that is paved for most of its length but becomes a dirt road at its western terminus. There are no posted speed limit signs or pavement markings on Proto Drive. On the northwesterly side of Proto Drive, there is a large tidal wetland area that affects the realignment options of Proto Drive. Traffic at the intersection of Proto Drive and Coe Avenue is controlled with a stop-sign.

**Short Beach Road (S.R. 142)**

*Short Beach Road looking east*

Short Beach Road (also known as S.R. 142) is a two lane roadway in the project area. This roadway is oriented in an east-west direction. It connects with Hemingway Avenue and provides principal access to the Farm River shoreline of East Haven and to the southern portion of the Town of Branford. Land uses in the area are primarily commercial and retail properties. The posted speed limit on Short Beach Road is 35 miles per hour. Lane and shoulder widths vary on Short Beach Road.

## 2.2 *Traffic Conditions*

The following details the traffic conditions at the study area intersections:

**Existing (2012) Traffic Volumes**

Manual traffic counts were conducted at the following intersections on Thursday, May 10, 2012 during the weekday A.M. peak hour (7:00-9:00 A.M.) and P.M. peak hour (4:00-6:00 P.M.) periods:

- Hemingway Avenue/Coe Avenue/Short Beach Road
- Coe Avenue/Proto Drive

**Figure 2.1** shows the existing (2012) traffic volumes at the study area intersections.

**Existing (2012) Level of Service Analysis**

Level of Service (LOS) is a qualitative measure of driver satisfaction with a number of factors that influence mobility and reflect the degree of traffic congestion. These factors include speed and travel time, traffic interruption, freedom of maneuverability, safety, driving comfort and convenience, and delay.

In general, there are six levels of service describing traffic flow conditions. **LOS A** describes a condition of "free flow", with low volumes and high speeds. **LOS B** represents a stable traffic flow with operating speeds beginning to be restricted somewhat by traffic conditions. **LOS C** describes stable traffic operations. **LOS D** reflects a condition of more restricted movements for motorists as

congestion becomes more noticeable. **LOS E** is representative of the actual capacity of a roadway or an intersection and reflects delay to all motorists due to congestion. **LOS F** is described as "force flow" and is characterized by traffic volumes that exceed what the roadway can handle. This causes a "breakdown" of traffic conditions on the roadway; therefore, LOS F is considered an unacceptable traffic operating condition.

For this analysis, LOS was estimated for signalized and un-signalized intersections. The traffic analysis software Synchro 7 was used to determine the existing peak hour LOS at the study intersections. **Table 2.1** and **Table 2.2** highlight the LOS criteria for signalized and un-signalized intersections, respectively. The LOS criterion for signalized and un-signalized intersections is based on control delay per vehicle measured in seconds. Control delay is defined as the amount of time a vehicle has to wait at an intersection due to a stop-sign or a traffic signal.

Table 2.1
**Level of Service Criteria for Signalized Intersections**

| Level of Service | Control Delay Per Vehicle (seconds) |
|---|---|
| A | ≤10 |
| B | >10 and ≤20 |
| C | >20 and ≤35 |
| D | >35 and ≤55 |
| E | >55 and ≤80 |
| F | > 80 |

Source: 2000 Highway Capacity Manual, Transportation Research Board

Table 2.2
**Level of Service Criteria for Un-signalized Intersections**

| Level of Service | Control Delay Per Vehicle (seconds) |
|---|---|
| A | ≤10 |
| B | >10 and ≤15 |
| C | >15 and ≤25 |
| D | >25 and ≤35 |
| E | >35 and ≤50 |
| F | > 50 |

Source: 2000 Highway Capacity Manual, Transportation Research Board

LOS was determined for the study area intersections under existing conditions during the weekday A.M. and P.M. peak hour periods using the existing traffic volumes shown in Figure 2.1. The results of the analyses for signalized intersections are presented in **Table 2.3**Error! Reference source not found..

**Table 2.3**
**Level of Service Analysis**

| Intersection | Existing Year (2012) A.M. Peak | Existing Year (2012) P.M. Peak |
|---|---|---|
| **Hemingway Avenue/Coe Avenue/Short Beach Road** | **B(10.1)** | **B(10.6)** |
| Coe Avenue Northbound | B(14.9) | B(16.6) |
| Hemingway Avenue Southbound | A(5.8) | A(6.4) |
| *Left* | A(5.9) | A(8.9) |
| *Through-Right* | A(5.7) | A(4.8) |
| Short Beach Road Westbound | A(9.7) | A(9.6) |
| *Left-Through* | B(17.0) | C(21.9) |
| *Right* | A(9.2) | A(8.1) |
| Plaza Drive Eastbound | B(12.0) | B(19.5) |
| **Coe Avenue/Proto Drive** | | |
| Coe Avenue Northbound Left | A(0.7) | A(0.2) |
| Proto Drive Westbound | B(13.7) | C(23.7) |

As indicated above, the LOS at the study area intersections is LOS C or better for a specific movement, approach, or as an overall intersection.

## 2.3 *Safety Conditions*

Accident data available through the Connecticut Department of Transportation (CTDOT) was reviewed for the most recent three year period, i.e. between January 2006 and December 2008. The following section summarizes the accident data for the segment of Coe Avenue between Proto Drive and Short Beach Road/Hemingway Avenue and the intersection of Coe Avenue/Hemingway Avenue/Short Beach Road.

**Segment: Coe Avenue – Between Short Beach Road and Proto Drive**

**Table 2.4** summarizes results of the accident analysis on the Coe Avenue segment.

**Table 2.4**
Accident Analysis – Coe Avenue Segment

| | Category | Number |
|---|---|---|
| Accident Type | Rear End | 3 |
| | Turning Maneuver | 5 |
| | Backing | 1 |
| | Sideswipe | 2 |
| | Fixed Object | 1 |
| | Angle | 1 |
| | **TOTAL** | **13** |
| Road Surface | Dry | 11 |
| | Wet | 1 |
| | Snow/Slush | 1 |
| | **TOTAL** | **13** |
| Accident Severity | Injury | 5 |
| | Property Damage Only | 8 |
| | **TOTAL** | **13** |

As indicated in the above table, a total of 13 accidents were reported on the Coe Avenue segment over the most recent three year period. Of the 13 accidents, the predominant types were collisions resulting from improper turning maneuvers (approximately 38 percent) and rear-end collisions (approximately 23 percent). Of the 13 accidents, five (approximately 38 percent) resulted in a personal injury, the remainder of accidents resulted in property damage only.

**Intersection: Coe Avenue/Hemingway Avenue/Short Beach Road**

**Table 2.5** summarizes results of the accident analysis at the Coe Avenue/Hemingway Avenue/Short Beach Road intersection.

**Table 2.5**
Accident Analysis – Coe Avenue/Hemingway Avenue/Short Beach Road Intersection

| | Category | Number |
|---|---|---|
| Accident Type | Rear End | 15 |
| | Turning Maneuver | 7 |
| | Sideswipe | 1 |
| | Fixed Object | 1 |
| | **TOTAL** | **24** |
| Road Surface | Dry | 16 |
| | Wet | 5 |
| | Ice | 1 |
| | Unknown | 2 |
| | **TOTAL** | **24** |
| Accident Severity | Injury | 4 |
| | Property Damage Only | 20 |
| | **TOTAL** | **24** |

As indicated in the above table, a total of 24 accidents were reported at the Coe Avenue/Hemingway Avenue/Short Beach Road intersection over the most recent three year period. Of the 24 accidents, the predominant type was rear end collisions (approximately 63 percent). Of the 24 accidents, four (approximately 17 percent) resulted in a personal injury, the remainder of accidents resulted in property damage only

## 2.4 *Environmental Conditions*

The project area is situated in the Town of East Haven near its western border with the City of New Haven in a highly developed area that is primarily comprised of industrial, commercial and retail properties and utilities. The East Haven Industrial Park abuts the site to the south and to the northwest is Tweed-New Haven Airport. Undeveloped areas surrounding the Site include inland wetlands, tidal wetlands, coastal waters, drainage channels and other coastal resources. The project area is located in the 100 year floodplain of Long Island Sound (elevation 10.7 NGVD).

Stormwater from the project area flows either west to Morris Creek or east to Tuttle Brook. Both watercourses are tidal estuaries and flow south to Long Island Sound. Large areas of these estuaries are degraded wetlands. The dominant vegetation in these estuaries is Phragmites australis (common reed), an invasive weedy species of limited value to wildlife that is associated with a degraded wetland environment.

The degraded condition of the wetlands is believed to be caused by constriction of the natural flow of tidal waters due to construction of roads, culverts, tidal gates, fill materials or other manmade interventions that altered or restricted the natural flow of tidal waters and prevents saltwater from

inundating upstream wetland areas. Prior to these interventions the wetland areas were reportedly dominated by Spartina alternaflora and Spartina patens, both indigenous tidal wetland plant species. The lack of adequate saltwater inundation caused the Spartina grasses to die and allowed Phragmites, which tolerates low salinity, to be the dominant species. According to several environmental studies of the area, the degraded Phragmites-dominated wetland system is extremely limited in terms of functions and values and provides little value to wildlife.

The mapping used in this effort was obtained from available sources such as Department of Energy and Environmental Protection (DEEP).

**Wetlands**

The project area is impacted by wetlands to the west of Coe Avenue and north of Proto Drive as shown in **Figure 2.2**. Field reviews conducted by various members of the project team indicate that the areas labeled "water feature" should be classified as wetlands.

**Flood Zone**

The 100 year flood zone is shown in **Figure 2.3**. As shown in the figure, the majority of the project area lies within the 100 year flood zone associated with Long Island Sound.

**Soil Classes**

The project area has poorly drained soils in several locations due to wetlands as shown in **Figure 2.4**.

# 3 REALIGNMENT OF PROTO DRIVE

This chapter discusses the alternatives reviewed for the possible realignment of Proto Drive and the preferred option selected by Town officials.

## 3.1 *Development of Conceptual Alternatives*

A set of conceptual alternatives associated with the realignment of Proto Drive were developed for review by Town officials. Based on this review and discussions with Town officials, these concepts were refined and depicted on available GIS mapping. **Figures 3.1** through **3.4** illustrate the concept-level sketches of these alternatives. As shown in the figures, all four alternatives required the relocation of the intersection of Proto Drive and Coe Avenue to the north of the vacant, town-owned building that is situated at the northwest corner of the existing intersection of Proto Drive and Coe Avenue.

Each conceptual alternative shows a variation in the roadway alignment between the starting point on Proto Drive and the ending point at the intersection with Coe Avenue. Since these alternatives shift Proto Drive to the west, they create additional development opportunities for the town on the east side of Proto Drive; however, most of the land west of the current alignment of Proto Drive is believed to be tidal wetlands, accordingly, the reconstruction of the street will result in direct impacts to wetlands and watercourses associated with Morris Creek.

## 3.2 *Evaluation Criteria*

The following evaluation criteria were selected in discussions with the town and the SCRCOG for comparing and evaluating the conceptual alternative road alignments.

- **Development Potential** – how can parcel dimensions be maximized?
- **Environmental Impacts** – how can environmental impacts be minimized?

The evaluation criteria, in conjunction with information in the decision matrix detailed below, were used to assist in developing and refining conceptual sketches of the four potential realignments of Proto Drive.

## 3.3 *Decision Matrix*

To assist in the decision-making process to identify the most viable alternative, a matrix was created to tabulate and assess the various benefits and negative impacts associated with each of the four alternatives considered (refer to **Table 3.1**. Three indicators aligned with the above-mentioned criteria were identified, including:

- **Length of New Roadway** – Assessed for total estimated cost
- **Development Area Gain** – Assessed for acreage that would be "opened" for development on/adjacent to the site
- **Potential Impact to Wetlands** – Assessed for potential acreage that would be disturbed and likely need to be mitigated

As shown in **Table 3.1,** the methodology developed to assess and rank the Conceptual Alternatives factors the relative cost of constructing the various realignment options and the relative impacts that each alignment option has on wetland resources. Table 3.1 tabulates the statistics of each of the three indicators listed above (refer to Columns 1, 2 and 3) and depicts the methodology developed to derive the final score (shown in the rightmost column). The final score is the product of ratios that reflect the expected road costs relative to the development area gained and the area of potential impacts to wetlands relative to the area if development gained. Following is a step-by-step explanation of this methodology.

The cost impact is presented relative to the area of potential new development that would be gained. This is determined by dividing the roadway cost (Col. 4) by the development gain (Col. 2) to derive the cost per acre of development gained (Column 5). The resulting ratios for each alternative were then converted to a "Cost Factor" (Col. 7) by comparing each alternative to a reference case; the reference case is the least costly (per development acre gained) of the four Alternatives (Alternative 4 in this analysis). Therefore, Alternative 4 is established as the Reference Case and assigned a value of 1.0; the Cost Factors for the remaining three alternatives were determined by dividing the respective cost per acre of development gained (Col. 5) by the Reference Case cost per acre of development gained or the relative cost of the Reference Case (highlighted cell of Col. 5).

The wetland impact is also presented relative to development gain. This is determined by dividing the area of wetland impact (Col. 3) by the area of development gained (Col. 2) to derive the ratio of wetland impact per acre of development gain (Col. 6). The resulting ratios for each alternative were then converted to a "Wetland Disruption Factor" (Col. 8) by comparing each alternative to a reference case; the reference case is the least wetland impacting (per development acre gained) of the four Alternatives (Alternative 1 in this analysis). Therefore, Alternative 1 is established as the Reference Case and assigned a value of 1.0; the Wetland Disruption Factors for the remaining three alternatives were determined by dividing the respective ratio of wetland impact and development gained (Col. 6) by the Reference Case ratio of wetland impact and development gained or the relative impact of the Reference Case (highlighted cell of Col. 6).

To determine the final "Score" of each alternative (rightmost column of Table 3.1), the Cost Factor (Col. 7) is multiplied by the Wetland Disruption Factor (Col. 8). The resulting product is a number

that represents the optimal alternative considering relative development and relative environmental impacts. Since this product is the result of ratios that compare each alternative to a Reference case that is assigned a value of 1.0, the lower the value or score represents a better performing alternative; accordingly, Alternative 1 received the best score and is ranked first, Alternative 4 is ranked second, Alternative 2 is ranked third, and Alternative 3 received the lowest score and is ranked fourth.

**Table 3.1**
Decision Matrix

| Alternative | Column 1 **Length of New Roadway (miles)** | Column 2 **Development Gain (acres)** | Column 3 [(1)] **Wetland Impact (acres)** | Column 4 **Potential Roadway Cost ($1M per mile)** | Column 5 **Roadway Cost per Acre of Development Gained** | Column 6 **Ac. of Wetland Impact per Ac. of Development Gained** | Column 7 **Cost Factor based on Column 5** | Column 8 **Wetland Disruption Factor based on Column 6** | Column 7 x Column 8 **Score (Rank)** |
|---|---|---|---|---|---|---|---|---|---|
| Alternative 1 | 0.11 | 1.12 | 0.63 | $109,848 | $98,079 | 0.563 | 1.69 | 1.00 | **1.69 (1)** |
| Alternative 2 | 0.262 | 3.72 | 3.36 | $262,311 | $70,514 | 0.903 | 1.21 | 1.61 | **1.95 (3)** |
| Alternative 3 | 0.303 | 3.35 | 2.90 | $303,030 | $90,457 | 0.866 | 1.55 | 1.54 | **2.39 (4)** |
| Alternative 4 | 0.453 | 7.78 | 7.92 | $452,652 | $58,181 | 1.018 | 1.00 | 1.81 | **1.81 (2)** |

**Note:** (1) Area of wetland impacts estimated from available GIS mapping layers (wetland soils, surface waters) and field observation. Future delineation of wetlands would be required.
**Source:** CDM Smith

Reference Case

This scoring methodology reveals that Alternative 1 attained the highest score even though it results in the least amount of development gain because it has the lowest potential wetland impact. Alternative 4 scored the second even though it represents the greatest potential impact to wetlands (and the highest Wetland Disruption Factor) and has the highest absolute cost of road construction (Col. 4) because it results in the greatest gain in development area and because it has the lowest road costs relative to the acreage of potential development that can be gained (Col. 5). .

## 3.4 *Preferred Option*

Based on discussions with Town officials, the preferred alternative or option selected for further consideration based on this study is **Alternative 4**. It should be noted that this option would not require demolition of the vacant, town-owned building at the northwest corner of Proto Drive and Coe Avenue. The rationale for the town's selection is that the gain of development area creates more viable options for redevelopment of the properties located on the southeast offside of the potential Proto Drive realignment and will result in greater square footage of future industrial development, higher increases to the Town's tax base and more potential jobs.

The Town recognizes that there will be a significant impact to wetlands under this alternative and considerable environmental analysis and permitting requirements with local, state and federal review agencies will need to be conducted. The Town also understands that more detailed studies of the location, characteristics and functional values of environmental resources, analysis of the wetland impacts and determination of road construction and environmental mitigation costs, may require the Town to reconsider the realignment of Proto Drive.

# 4 HEMINGWAY AVENUE – COE AVENUE CONCEPT PLAN

This chapter discusses the design elements of the existing Hemingway Avenue/Coe Avenue corridor. A conceptual plan and profile was developed to alleviate flooding issues based upon available floodplain and hydrological data and other engineering documentation and discussions with the Town officials.

As discussed in Section 2 of this report, Hemingway and Coe Avenues are principal arterials serving the southern areas of the Town of East Haven as well as portions of the Town of Branford. Regional arterials serve many functions; therefore, the design of arterial routes in East Haven must address numerous considerations including highway and pedestrian safety, maintenance of vehicular access to broad areas of the shoreline, supporting adjacent economic activity that is vital to the regional economy, and facilitating access to adjoining properties and businesses. In addition, and critical to the safety of shoreline residents, these arterials provide the principal routes of evacuation in the event of a hurricane or other coastal storm. Therefore, an important objective of this study is to determine the maximum height that the roadways can be elevated to raise the travel lanes as close as possible to the elevation of floodwaters (i.e. the 100-year flood elevations associated with the floodplain of Long Island Sound) without negatively affecting access or causing undue grading impacts to adjacent properties.

## 4.1 *Existing Survey*

A detailed survey was conducted on Hemingway Avenue/Coe Avenue between Short Beach Road and Proto Drive with the following limits - 850 feet on Coe Avenue plus 250 feet on either direction of the intersection for a total of 1,350 linear feet. The survey included 100 feet on side roads and mapped the following elements:

- **Horizontal Control** – survey baseline and control points
- **Vertical Control** – Spot elevations, contours, elevations of crown line, gutter line, top of curb, front and back of walk, and header elevations of driveway aprons.
- **Property Line information** – based on parcel data obtained from the Town.
- **Field Survey** - The topographic survey of edges of road, sidewalks, and other pavements, top and bottom of curbs, spot elevations, PC and PT points, bridge/culvert crossing locations, light poles, surface utilities, and signage.
- **Drainage** - Drainage structures, inverts, flow lines, and pipe sizes.
- **Utilities** - Underground utilities based on field observation, field notes, and mapping provided by various utility companies.

## 4.2 *Existing Plan and Profile*

The following are few of the key findings of the existing conditions of Hemingway Avenue/Coe Avenue:

- **Horizontal Alignment (plan view)** – Coe Avenue has a straight section for a predominant portion of this roadway segment. The travel lanes are 11-12 feet wide with approximately 2 foot shoulders on either side. Roadway crown lies on the centerline of Coe Avenue.
- **Vertical Control (profile view)** – The existing profile of Coe Avenue varies between the lowest point at EL 4.12 and the highest point at EL 6.99. There are three low points on Coe Avenue within the project area – around Station 12+00 – EL 5.85, around Station 18+75 – EL 4.58, and around Station 23+00 – EL 4.12.
- **Property Line information** – Based on the property line information obtained from the Assessor's maps of the Town of East Haven, the right of way on Coe Avenue is approximately 80 feet.
- **Drainage** - Drainage structures exist along Coe Avenue on both sides of the roadway. Based on field observations, the roadway experiences ponding during major rain events and it appears that the current drainage system cannot accommodate the run-off during these events.
- **Utilities** – Overhead utilities (i.e. power lines) exist on the west side of the roadway. Sanitary and gas lines run on the east side of the roadway.

## 4.3 *Conceptual Plan and Profile*

The conceptual plan and profile (included in the appendix) is based on the following design assumptions:

- The 100-year flood elevation is at EL 10.7[1]. Due to grade impacts that would be created on adjacent commercial and industrial properties along the corridor, it was determined that the maximum amount that Coe Avenue could be elevated at Station 23+00 (Intersection of Short Beach Road/Plaza Drive) is 2.0 ft. This would result in an elevation of EL 6.12 at the center of the intersection, well below the 100-year flood elevation but a great improvement over existing conditions

[1] Flood Insurance Study, Town of East Haven, Federal Emergency Management Agency, January 2003.

- Maintain the remaining existing low points on Coe Avenue (i.e. Station 12+00 and Station 18+75). Based on the conceptual review, these low points could be raised in elevation based on further discussions with the Connecticut Department of Transportation staff.

- Proposed drainage is conceptual in nature and shows suggestions for relocation or new catch basins/manholes based on available data. Detailed drainage analysis was not conducted as part of this effort.

- The design speed on Coe Avenue is 45 miles per hour (however, the posted speed limit will be maintained at the current limit of 35 miles per hour).

Based on these design assumptions and criteria, cross-sections for the conceptual plan were prepared at 20 foot intervals on Coe Avenue. The design assumptions were discussed with the Town Engineer and agreed upon at the meeting held on June 15, 2012. The concept plan and profile is a preliminary effort and could be adjusted as this project moves into preliminary design.

## 4.4 *Conceptual Cost Estimate*

A conceptual order of magnitude cost estimate was developed based on the concept plan. Table 4.1 provides a breakdown of the cost by design elements.

**Table 4.1**
**Conceptual Cost Estimate**

| **Description** | **Cost** |
|---|---|
| Roadway Quantities | $724,500 |
| Drainage Quantities | $225,500 |
| Traffic Quantities | $150,000 |
| **Subtotal A (Roadway + Traffic + Drainage)** | **$1,100,00** |
| Lump Sum Items | |
| Mobilization (7.5% of subtotal) | $82,500 |
| Maintenance and Protection of Traffic (4% of subtotal) | $44,000 |
| **Subtotal B (Lump Sum Items)** | **$126,500** |
| Engineering Percentages | |
| Incidentals (25%) | $306,625 |
| Contingencies (10%) | $122,650 |
| **Subtotal C (Engineering Percentages)** | **$429,275** |
| **TOTAL CONCEPTUAL COST (A+B+C)** | **$1,655,775** |

# 5 NEXT STEPS

This chapter provides a series of next steps for the town to undertake such as discussions with reviewing agencies, wetland mapping, and identification of permits.

## *5.1 Meeting with Review Agencies*

The Town would require meetings with reviewing agencies before advancing final design of the realignment of Proto Drive and the re-design of Cove Avenue. Regarding the Proto Drive realignment, it is our understanding that the Town has initiated discussions with the U.S. Army Corps of Engineers. The Town should also meet with property owners along Proto Drive i.e. Calabro Cheese and Town Fair Tire. The re-design of Coe Avenue will also require discussions with the Connecticut Department of Transportation staff.

## *5.2 Wetland and Stormwater Management*

To compensate for the environmental impacts that would result from the placement of fill in the wetlands for the proposed relocation of the northerly portion of Proto Drive, a wetland restoration plan will be required (potentially for an area of two to three times the area of wetlands that are proposed to be impacted). The restoration plan could include modifying the hydrological systems in the vicinity of the project through a combination of all or some of the following strategies: enhancing tidal creeks and channels to allow for improved tidal flows; removing Phragmites vegetation within specified areas to allow for the reintroduction of indigenous species and the creation of more diverse habitats for native wildlife; preventing of the reestablishment of Phragmites; dredging or removal of fill within limited areas of wetlands to result in an increase in wetlands; and undertaking a 5 year program to monitor the tidal wetland restoration efforts to ensure that the intended results are being achieved and to determine if modifications to the program are necessary to attain the desired results.

The placement of fill for the construction of the relocation of Proto Drive will also require hydraulic modeling and engineering analysis to demonstrate that the activity will not increase the 10 year and 100 year water surface elevation over existing conditions or diminish the flood storage capacity or flood control value of the floodplain. This analysis may indicate the need to excavate historic fills elsewhere in the Morris Creek/Tuttle Brook watersheds to compensate for loss of flood storage capacity.

The proposed construction of new or relocated impervious surfacing associated with the relocation of Proto Drive will also trigger the need to prepare a stormwater management plan since the stormwater discharges or surface runoff from the new pavement will be discharged into a tidal wetland. The CT Stormwater Quality Manual requires that the first inch of runoff from impervious surfaces that discharge into tidal waters be retained to reduce potential negative impacts of road surface pollutants to natural systems. This retention requirement will necessitate the construction of stormwater detention basins or holding ponds.

## *5.3 List of Permits and Agencies*

A preliminary list of permits and the agency involved is provided in the appendix. The agencies involved are the Town of East Haven, the Connecticut Department of Energy and Environmental Protection (DEEP), the Office of Long Island Sound Programs (OLISP), the U.S. Army Corps of Engineers, the Connecticut Department of Transportation, and others.

# Technical Appendix


CDM Smith

**PROJECT AREA**

FIGURE 1.1


CDM Smith

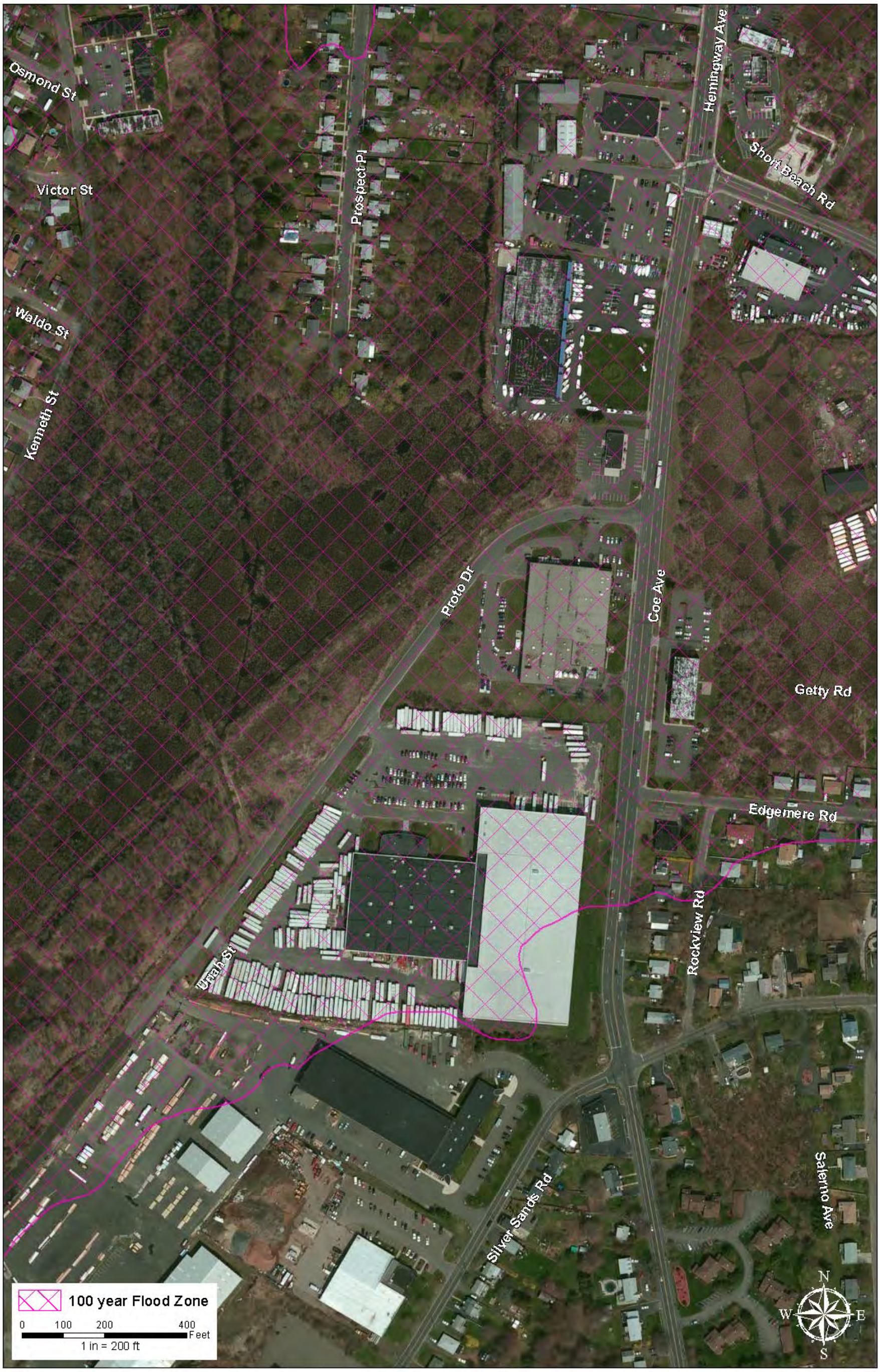
## EXISTING (2012) YRAFFIC VOLUMES

FIGURE 2.1


CDM Smith

**WETLAND MAPPING**

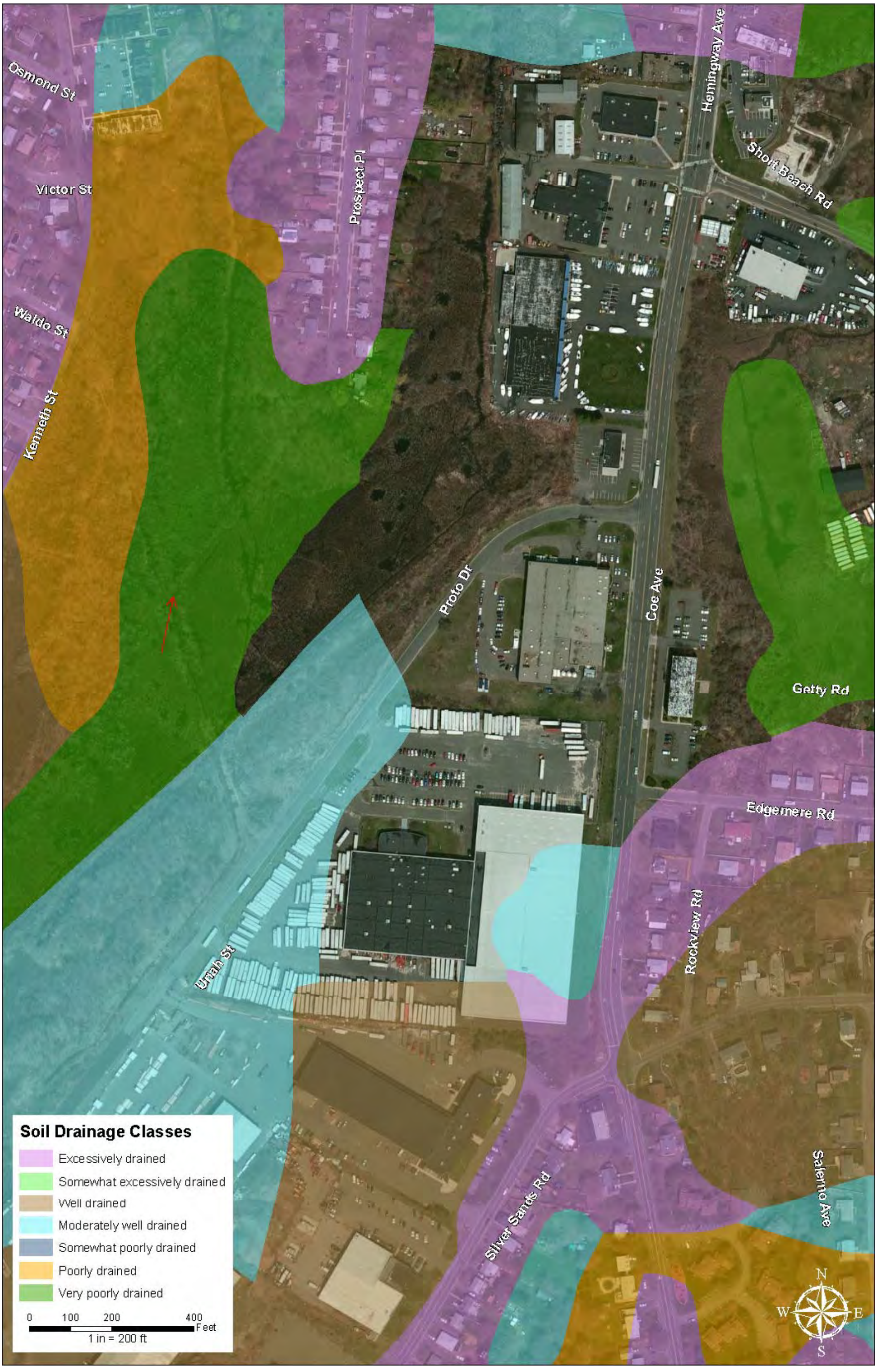
FIGURE 2.2




CDM Smith

## 100 YEAR FLOOD ZONE MAPPING

FIGURE 2.3




CDM Smith

**SOIL CLASSES MAPPING**

FIGURE 2.4

POTENTIAL WETLANDS SOILS
(FIELD OBSERVED)

EXISTING SURFACE WATERS
(GIS BASED)

EXISTING WETLAND SOILS
(GIS BASED)

PROTO DRIVE

COE AVENUE
(SR 337)

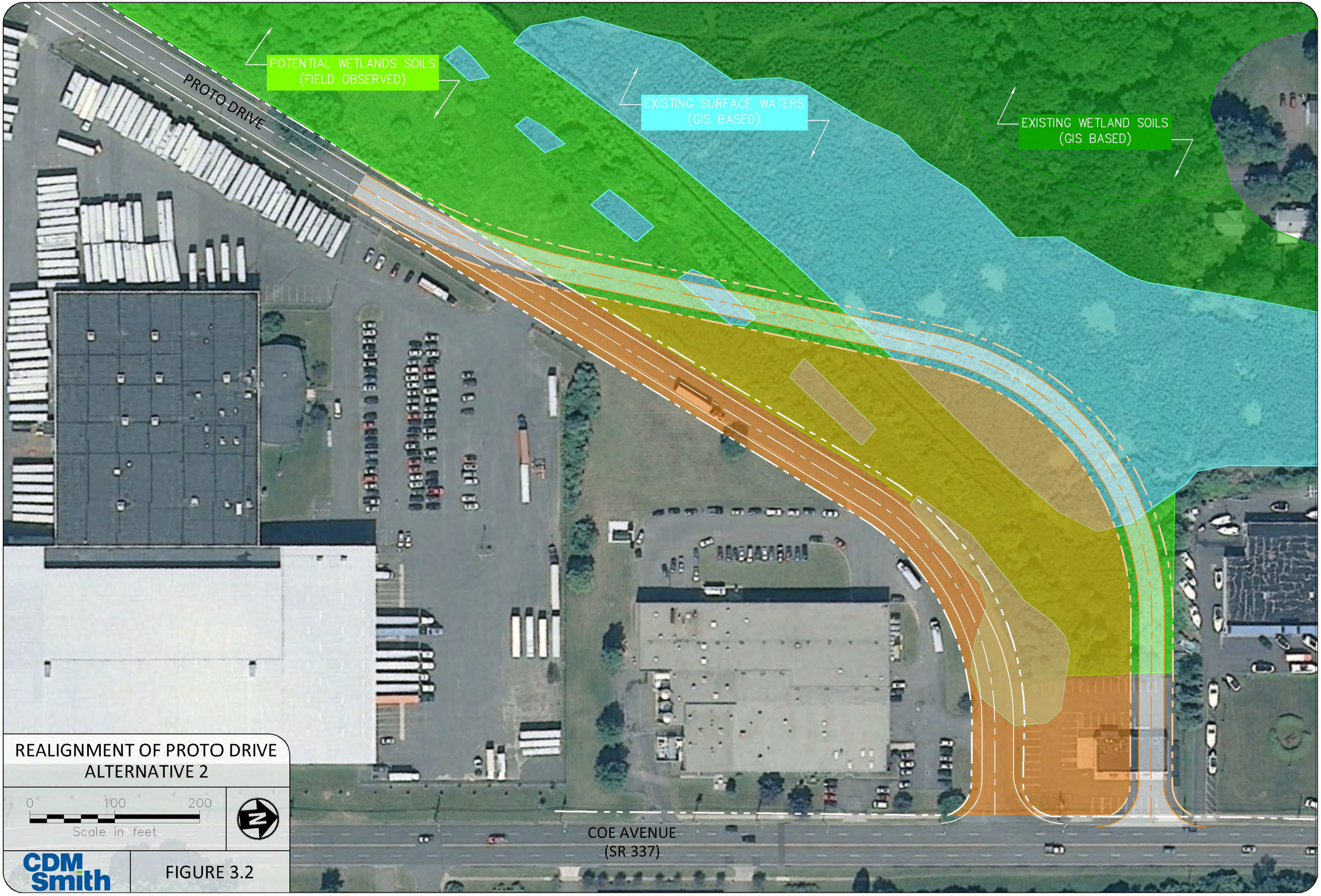
# REALIGNMENT OF PROTO DRIVE
# ALTERNATIVE 1

0 100 200
Scale in feet

N

CDM Smith

FIGURE 3.1



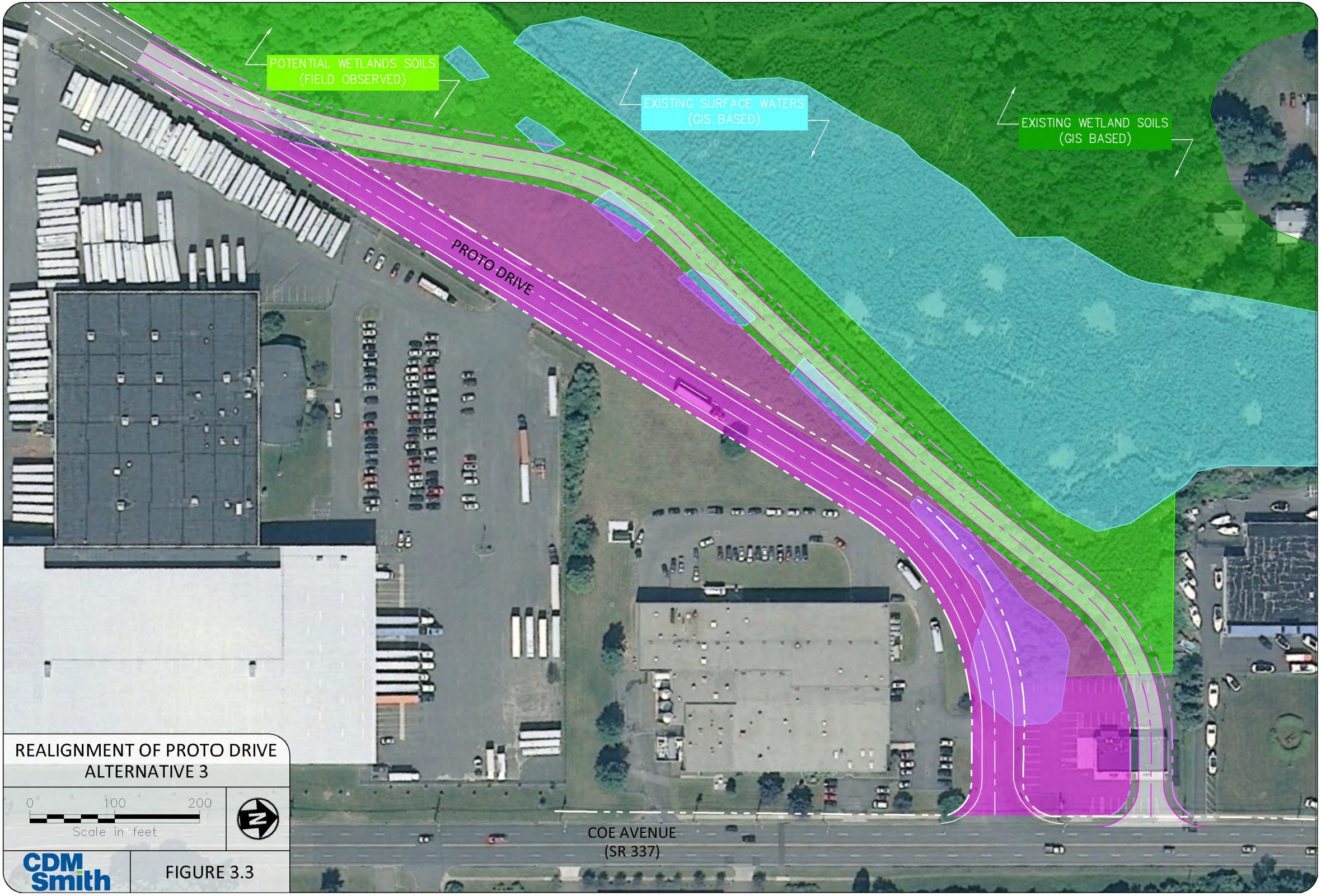

REALIGNMENT OF PROTO DRIVE
ALTERNATIVE 2

0 100 200

Scale in feet

CDM Smith

FIGURE 3.2




REALIGNMENT OF PROTO DRIVE
ALTERNATIVE 3

0 100 200
Scale in feet

CDM Smith

FIGURE 3.3

POTENTIAL WETLANDS SOILS
(FIELD OBSERVED)

PROTO DRIVE

EXISTING WETLAND SOILS
(GIS BASED)

EXISTING SURFACE WATERS
(GIS BASED)

COE AVENUE
(SR 337)

# REALIGNMENT OF PROTO DRIVE
# ALTERNATIVE 4

0 150 300
Scale in feet

N

CDM Smith

FIGURE 3.4

PRELIMINARY
NOT FOR CONSTRUCTION

## GENERAL NOTES:

1. Conceptual plans based on raising the road elevation at the center of the Coe Avenue/Hemingway Avenue/Short Beach Road intersection by 2 feet (EL 4.12’ to EL 6.12’).

2. The road elevation can be raised by at least 1 foot at the low points around stations 12+00 and 18+70 as project moves into design.

3. Conceptual plan can be adjusted in the future based on discussions with the Connecticut Department of Transportation (CTDOT) and other key stakeholders.

4. Proposed drainage is conceptual and shows suggestions for relocation or new catch basins/manholes based on available data. Detailed drainage analysis was not conducted as part of the concept plan.

5. Conceptual plan can be adjusted to address the existing or proposed location of Proto Drive.

| REV. | DATE | DESCRIPTION | SHEET NO. |
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| | | REVISIONS | |

SCALE IN FEET
0 10 20 30 40
SCALE 1:40

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DRAFTER: HEIDY J. BRENES
CHECKED BY: MICHAEL SNYDER
DATE CHECKED: 07/2012

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
APPROVED BY: DATE:

PROJECT TITLE: HEMINGWAY - COE AVENUE STUDY
CADD: x PLOTTED: JULY 2012

TOWN: EAST HAVEN
DRAWING TITLE: GENERAL NOTES

PROJECT NO.: -
DRAWING NO.: PLN-1
SHEET NO.: 1 OF 21

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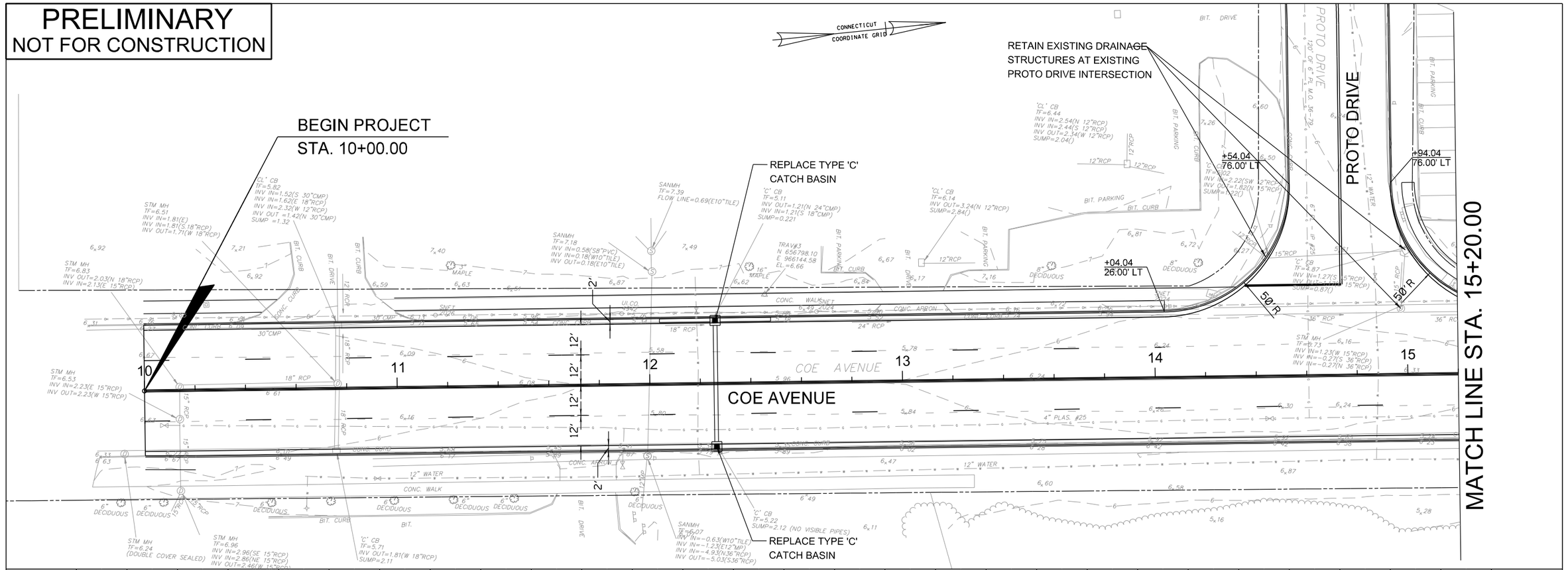


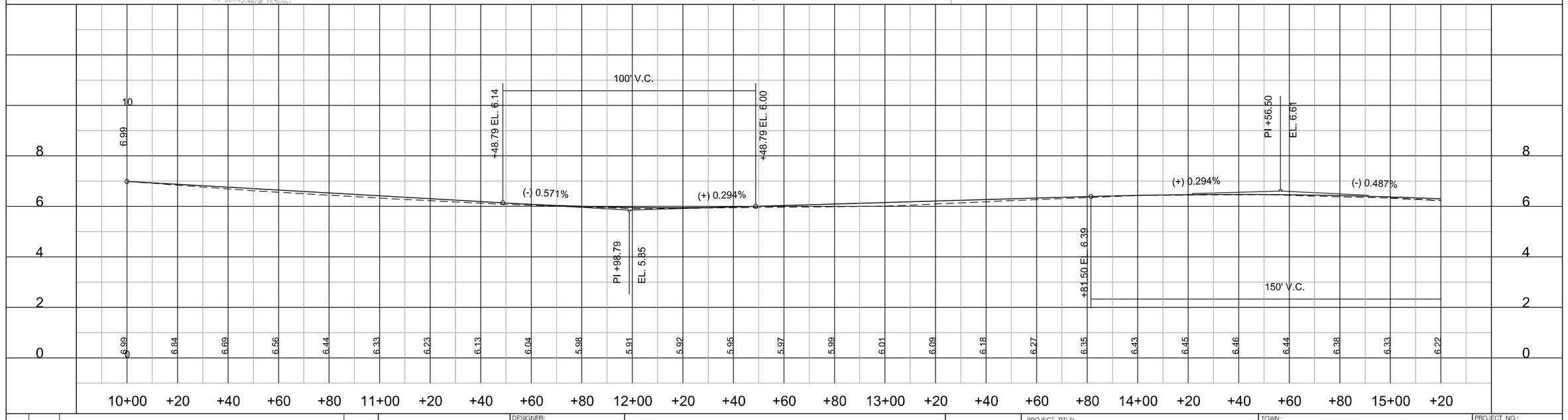


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ENGINEER: CDM SMITH
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PROJECT TITLE: HEMINGWAY - COE AVENUE STUDY

CADD: x PLOTTED: JULY 2012

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TOWN: EAST HAVEN

DRAWING TITLE: CONCEPTUAL PLAN STA. 10+00 TO STA. 15+20

PROJECT NO.: -

DRAWING NO.: PLN-2

SHEET NO.: 2 OF 21

# PRELIMINARY
NOT FOR CONSTRUCTION

CONNECTICUT COORDINATE GRID

MATCH LINE STA. 15+20.00

MATCH LINE STA. 20+40.00

PROTO DRIVE
POTENTIAL REALIGNMENT

15' 15'

50'R

50'R

REMOVE CATCH BASIN
CONVERT CATCH BASIN TO MANHOLE
NEW TYPE 'C' CATCH BASIN

REPLACE TYPE 'C-L' CATCH BASIN

NEW TYPE 'C' CATCH BASIN
REMOVE CATCH BASIN

EXISTING DRIVEWAY TO BE ADJUSTED BASED ON POTENTIAL REALIGNMENT OF PROTO DRIVE

REPLACE MANHOLE

REPLACE TYPE 'C' DOUBLE CATCH BASIN

RETAIN

NEW TYPE 'C' CATCH BASIN

+38.90
75.79' LT

+58.90
76.21' LT

+44.04
26.00' LT

+88.90
26.00' LT

CONNECT TO EXISTING 36" RCP

+18.90
26.00' LT

PI STA. 19+34.87

16 17 18 19 20

COE AVENUE

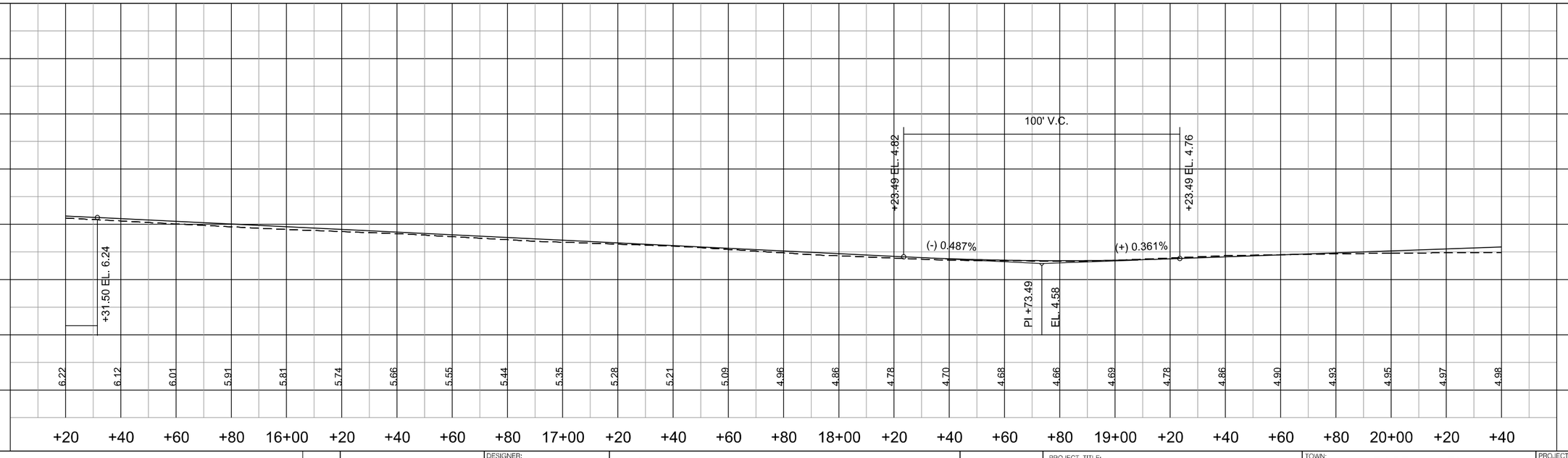
PC STA. 17+37.09

2' 12' 12' 12' 12' 2'

REPLACE TYPE 'C' CATCH BASIN

REPLACE TYPE 'C' DOUBLE CATCH BASIN

NEW TYPE 'C' CATCH BASIN

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0 10 20 30 40
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DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
APPROVED BY: DATE:

$USER$

PROJECT TITLE: HEMINGWAY - COE AVENUE STUDY

CADD: x PLOTTED: JULY 2012

$DATE$ $TIME$ $FILE$

TOWN: EAST HAVEN

DRAWING TITLE: CONCEPTUAL PLAN STA. 15+20 TO STA. 20+40

PROJECT NO.: -

DRAWING NO.: PLN-3

SHEET NO.: 3 OF 21

MATCH LINE STA. 20+40.00

REPLACE TYPE 'C' CATCH BASIN

REPLACE TYPE 'C-L' CATCH BASIN

NEW MANHOLE
REMOVE TYPE 'C' CATCH BASIN

REPLACE TYPE 'C' CATCH BASIN

REMOVE TYPE 'C' CATCH BASIN

DRAINAGE WILL BE ADJUSTED BASED ON FINAL SIDE ROAD DESIGN

NEW TYPE 'C' CATCH BASINS

REMOVE TYPE 'C' CATCH BASIN

REMOVE TYPE 'C' CATCH BASIN

NEW TYPE 'C-L' CATCH BASIN

NEW MANHOLE

NEW TYPE 'C' CATCH BASIN

CONNECTICUT COORDINATE GRID

+86.07
63.87' LT

+16.70
65.13' LT

+51.19
26.00' LT

+54.39
35.58' LT

+82.92
22.25' RT

+86.73
71.75' RT

+29.05
68.69' RT

PT STA. 21+32.31

POT STA. 25+19.67

LOW POINT SHOWN ON THE DRIVEWA
BE ADJUSTED BASED ON FUTURE DE

REPLACE TYPE 'C' CATCH BASIN

REMOVE TYPE 'C' CATCH BASIN

CONNECT TO EXISTING PIPE
(LOCATION UNKNOWN)

NEW TYPE 'C' CATCH BASIN
RETAIN

REPLACE TYPE 'C' CATCH BASIN

END PROJECT
STA. 25+19.67

DETAIL A

DETAIL A

SHORT BEACH RD

NEW TYPE 'C' CATCH BASIN

NEW TYPE 'C' CATCH BASIN

PRELIMINARY
NOT FOR CONSTRUCTION

PI +00.00
EL. 6.12

(+) 0.361%

(-) 0.849%

RAISE IN ROAD ELEVATION OF 2'

+25.00 EL. 5.85

150' V.C.

+75.00 EL. 5.48

110' V.C.

+08.27 EL. 5.29

(-) 0.849%

(+) 0.396%

PI +53.27
EL. 4.82

+08.27 EL. 5.04

5.08

4.98 4.96 4.95 4.90 4.83 4.77 4.71 4.64 4.61 4.59 4.56 4.42 4.20 4.12 4.14 4.13 4.33 4.47 4.56 4.65 4.74 4.82 4.91 5.00

+40 +60 +80 21+00 +20 +40 +60 +80 22+00 +20 +40 +60 +80 23+00 +20 +40 +60 +80 24+00 +20 +40 +60 +80 25+00

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PROJECT TITLE: HEMINGWAY - COE AVENUE STUDY

CADD: x PLOTTED: JULY 2012

$DATE$ $TIME$ $FILE$

TOWN: EAST HAVEN

DRAWING TITLE: CONSTRUCTION PLAN
STA. 20+40 TO STA. 25+19.75

PROJECT NO.: -

DRAWING NO.: PLN-4

SHEET NO.: 4 OF 21

PRELIMINARY
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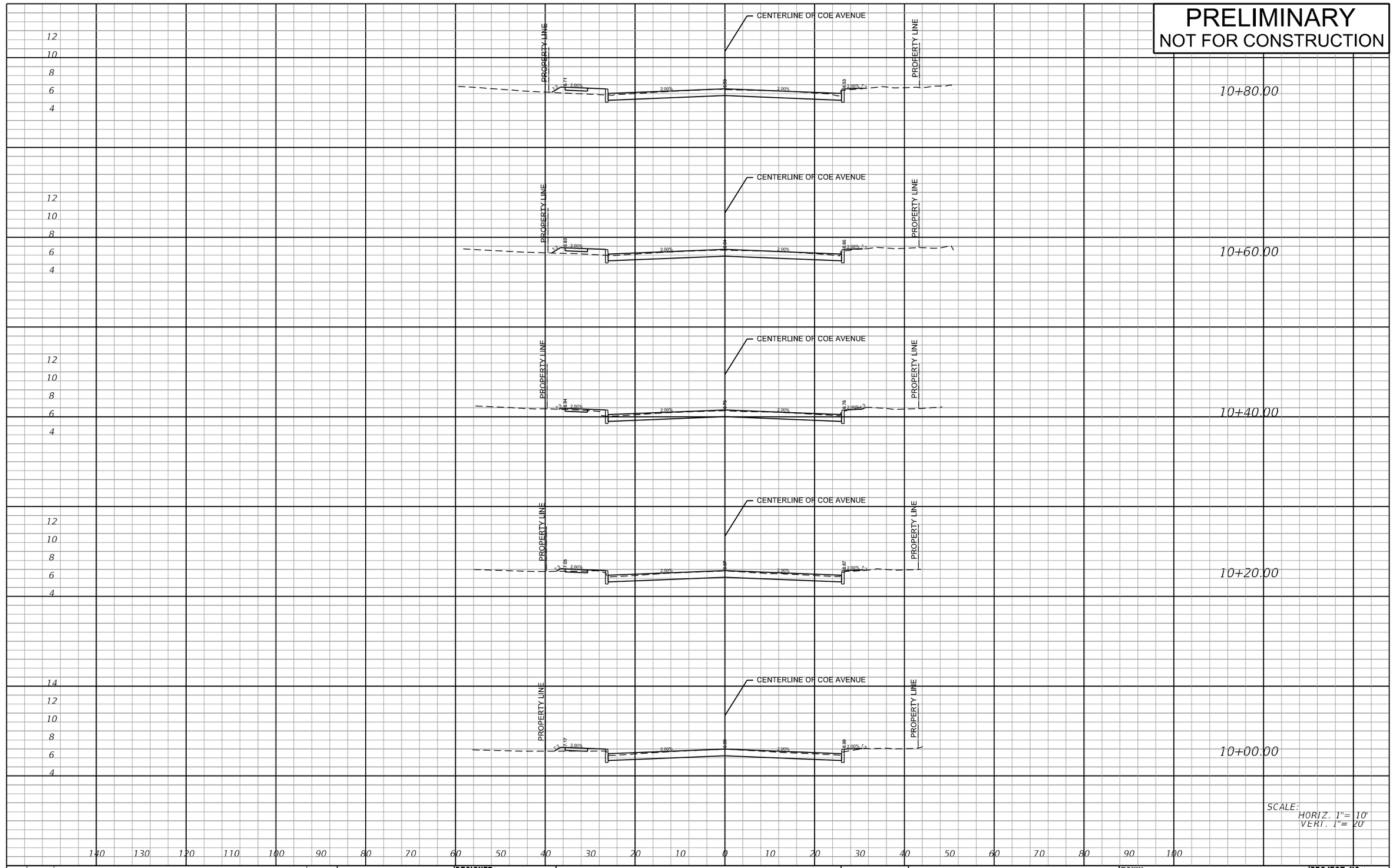


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0 10 20
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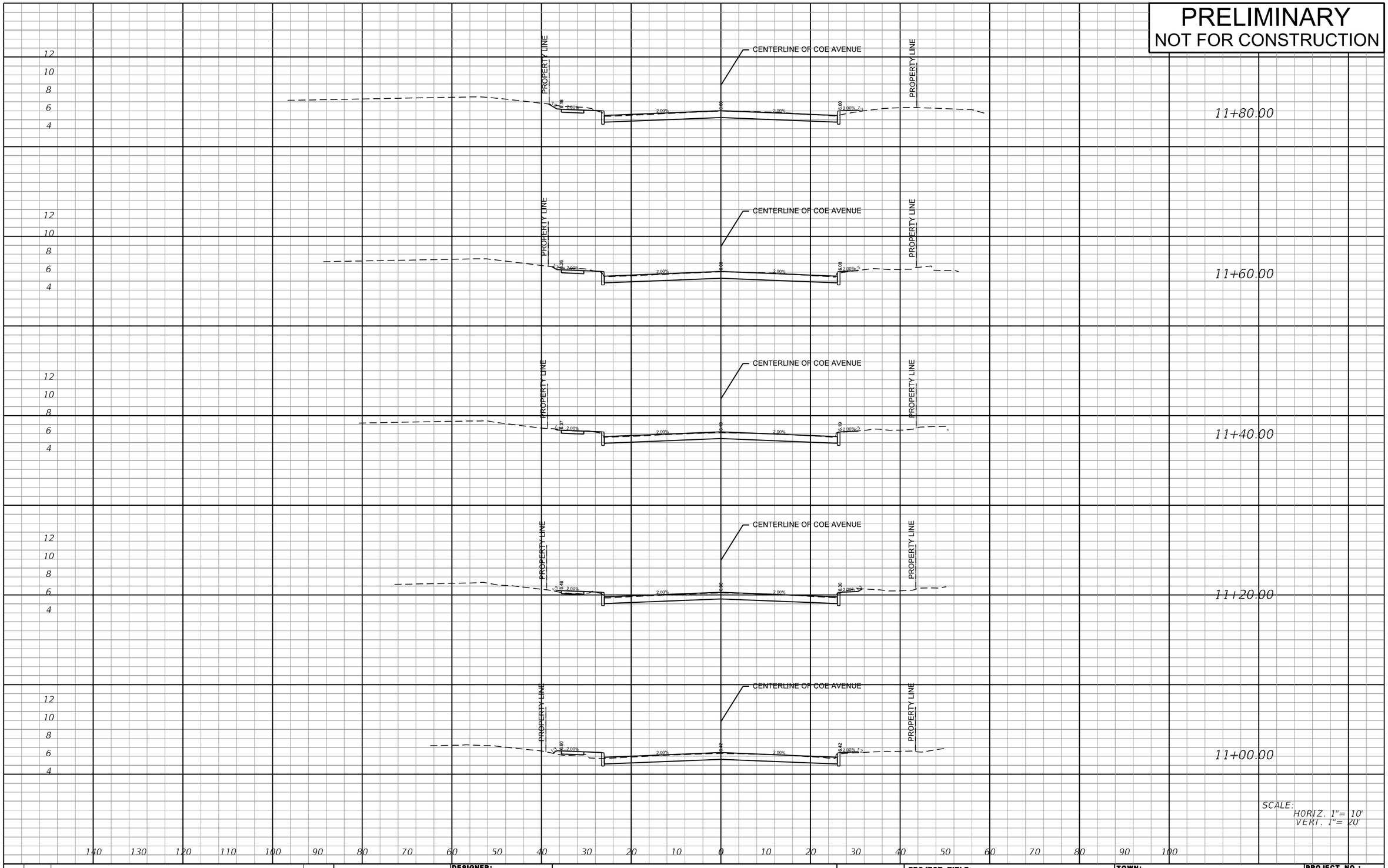


SCALE:
HORIZ. 1"= 10'
VERT. 1"= 20'

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SCALE IN FEET
0 10 20
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TOWN: EAST HAVEN

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**CROSS SECTIONS**

PROJECT NO.: -
DRAWING NO.: XS-2
SHEET NO.: 6 of 21

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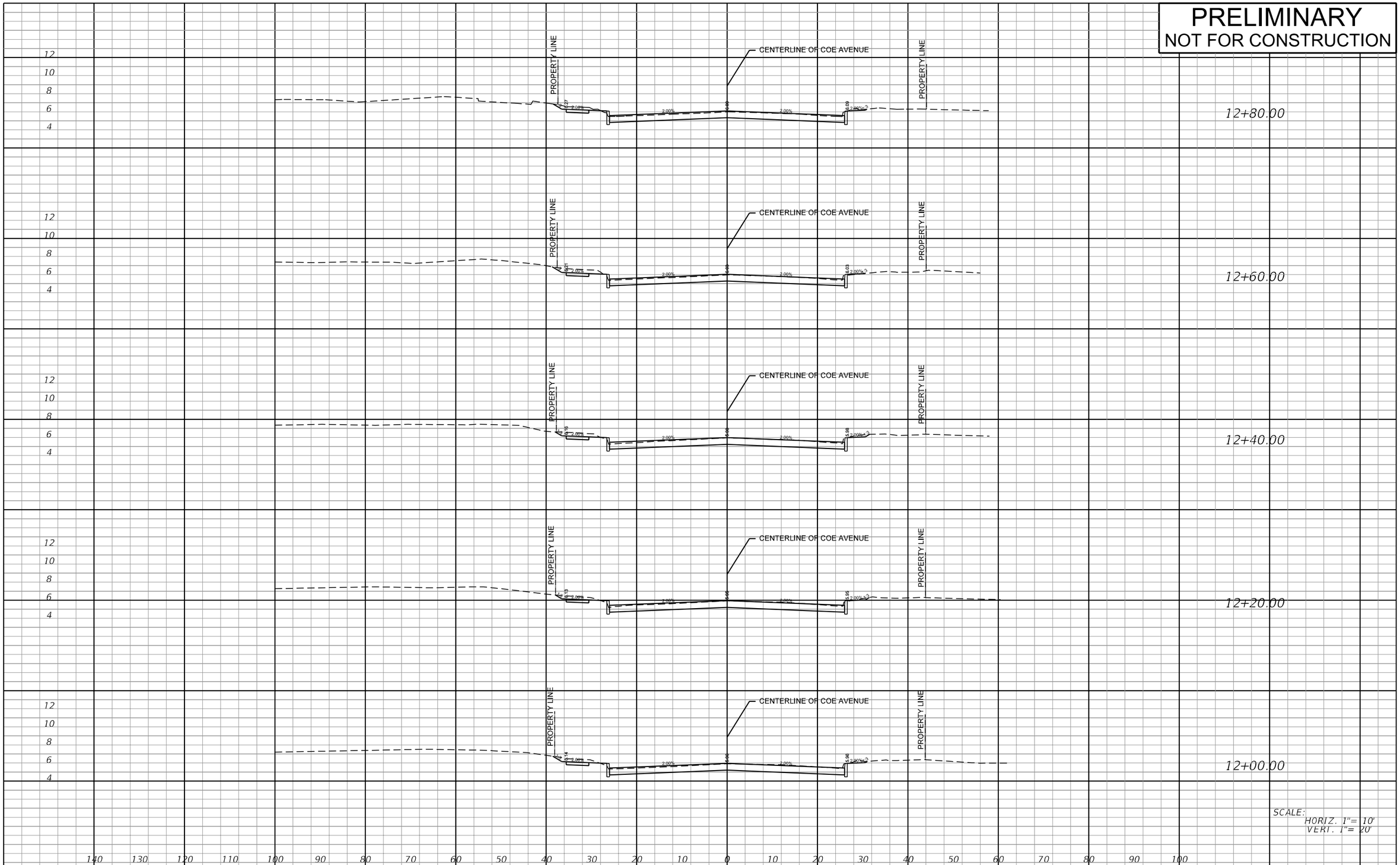


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|---|---|---|---|
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PROJECT NO.: -
DRAWING NO.: XS-3
SHEET NO.: 7 of 21

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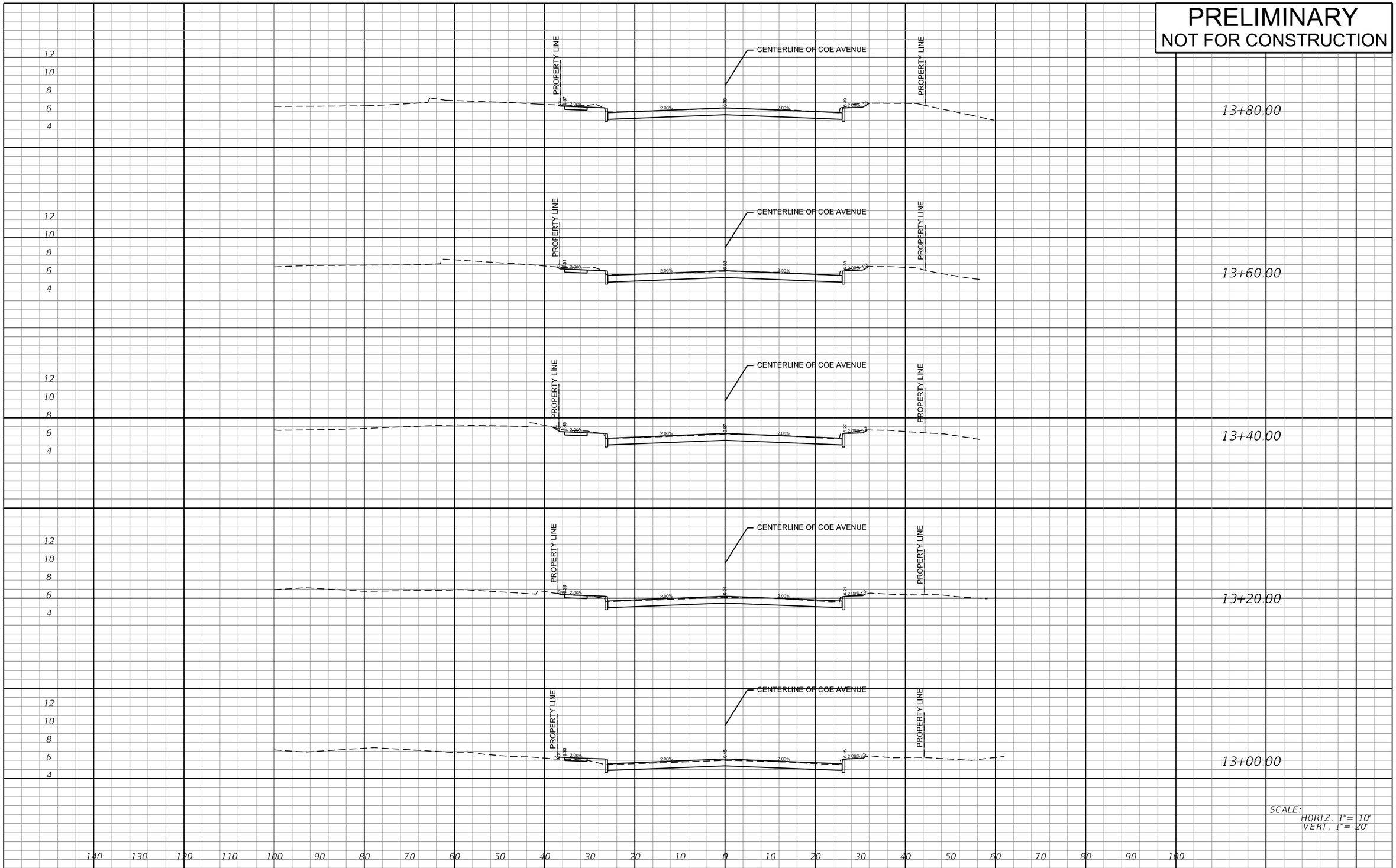


SCALE:
HORIZ. 1"= 10'
VERT. 1"= 20'

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**CROSS SECTIONS**

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DRAWING NO.: XS-4
SHEET NO.: 8 of 21

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PRELIMINARY
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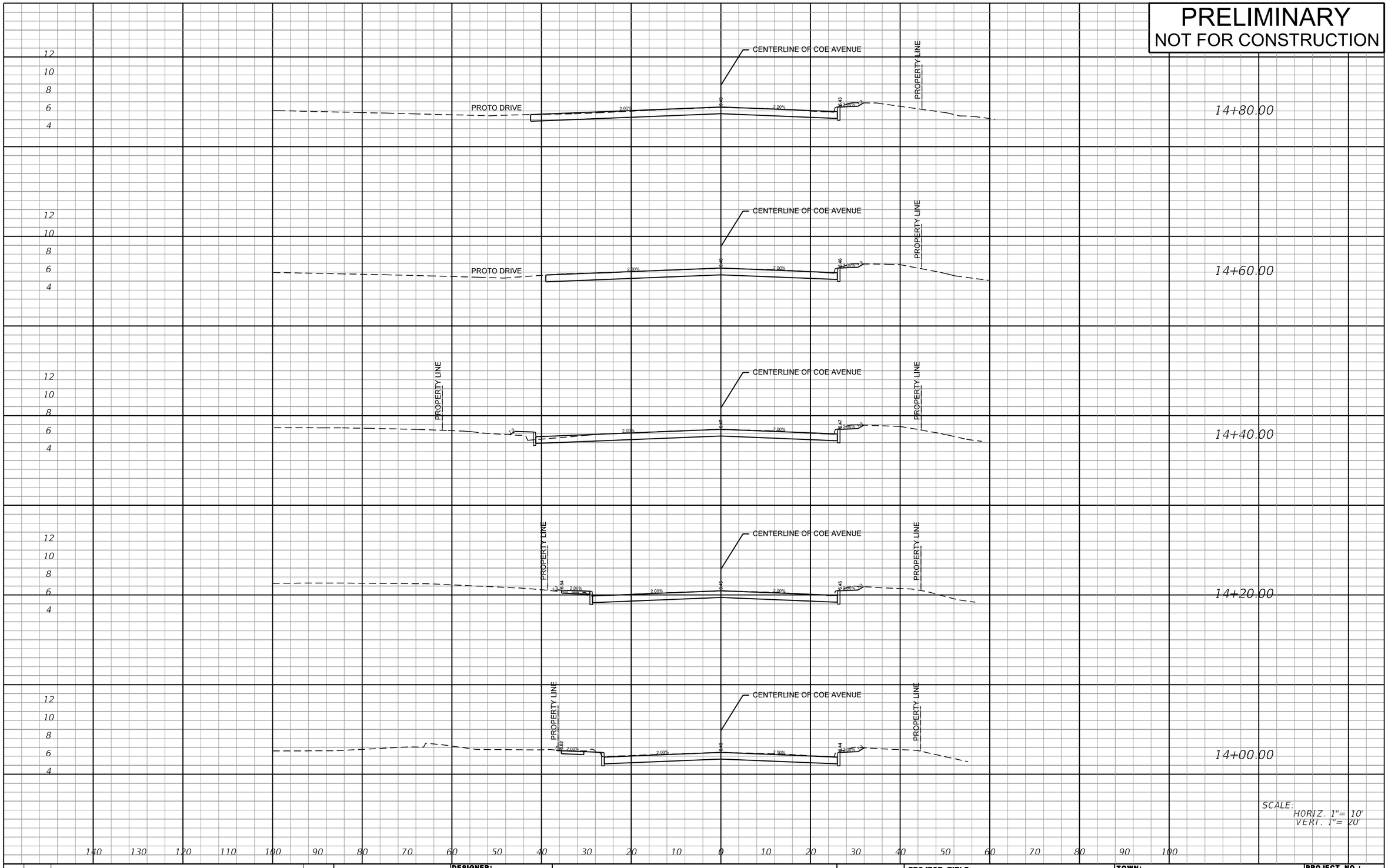


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TOWN: EAST HAVEN

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PROJECT NO.: -
DRAWING NO.: XS-5
SHEET NO.: 9 of 21

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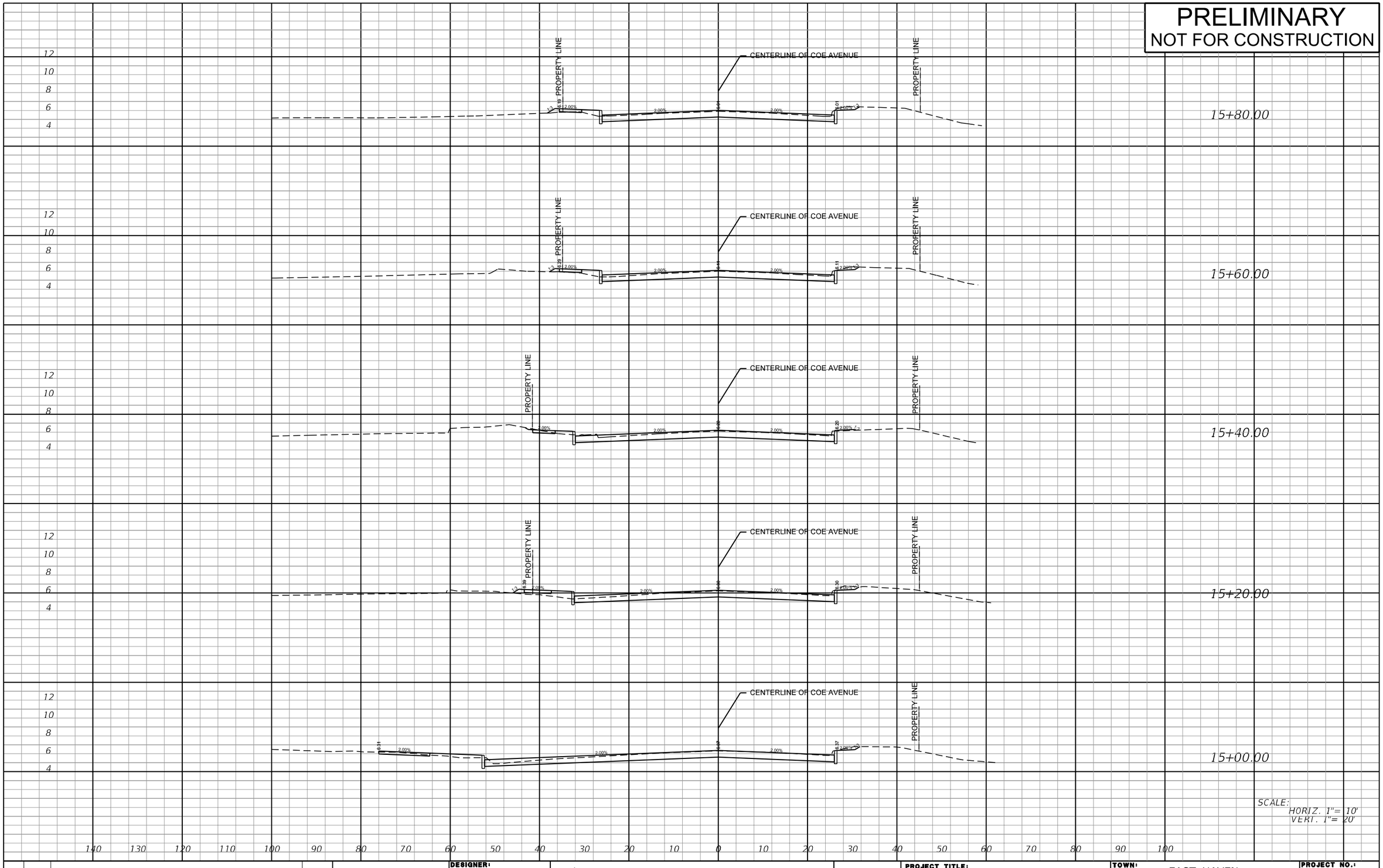


SCALE:
HORIZ. 1"= 10'
VERT. 1"= 20'

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0 10 20
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PROJECT TITLE:
HEMINGWAY - COE AVENUE STUDY

CADDx | PLOTTED: JULY 2012

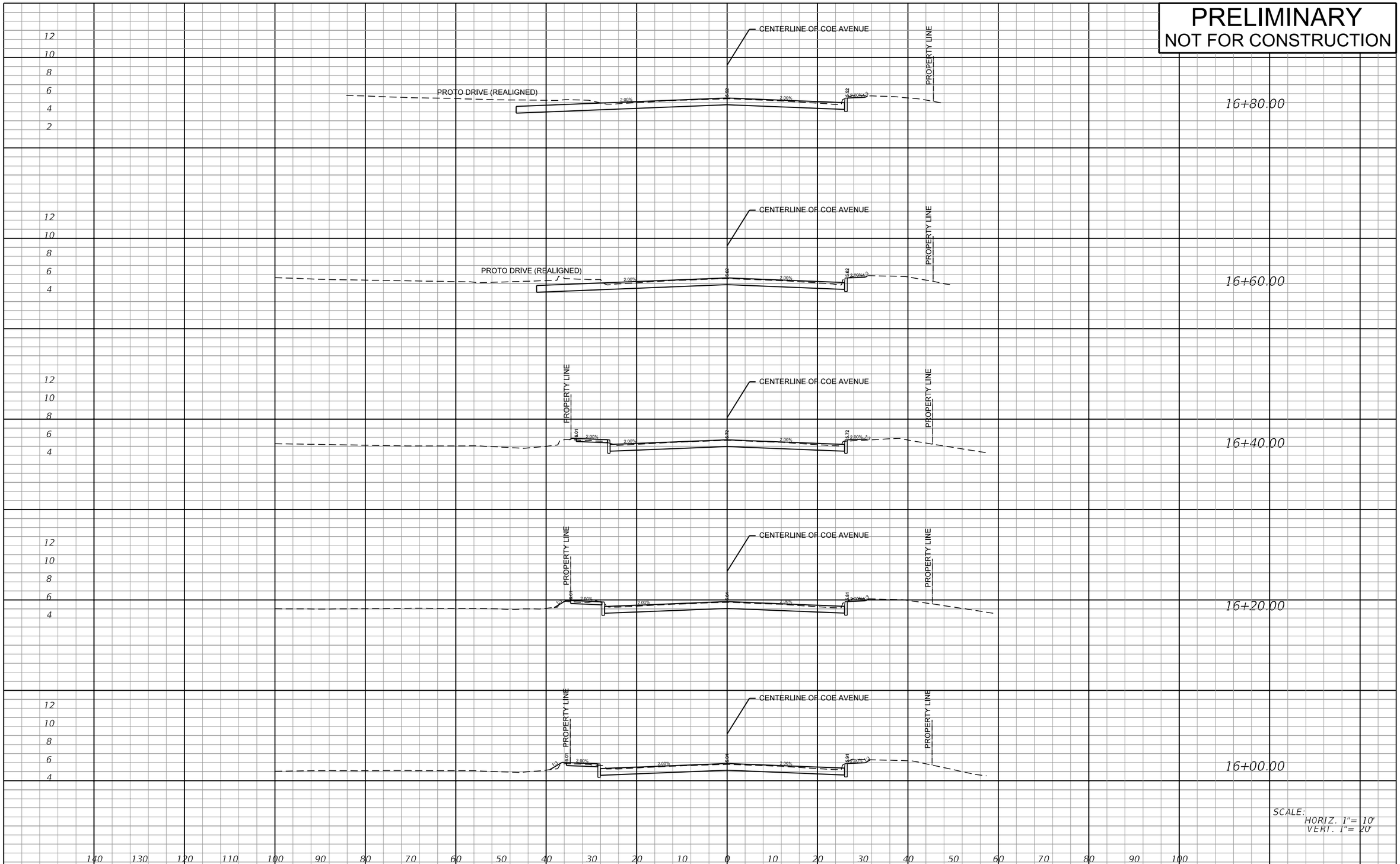
$USER$ $DATE$ $TIME$ $FILE$

TOWN: EAST HAVEN

DRAWING TITLE:
**CROSS SECTIONS**

PROJECT NO.: -
DRAWING NO.: XS-6
SHEET NO.: 10 of 21

PRELIMINARY
NOT FOR CONSTRUCTION

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0 10 20
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TOWN: EAST HAVEN

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PROJECT NO.: -
DRAWING NO.: XS-7
SHEET NO.: 11 of 21

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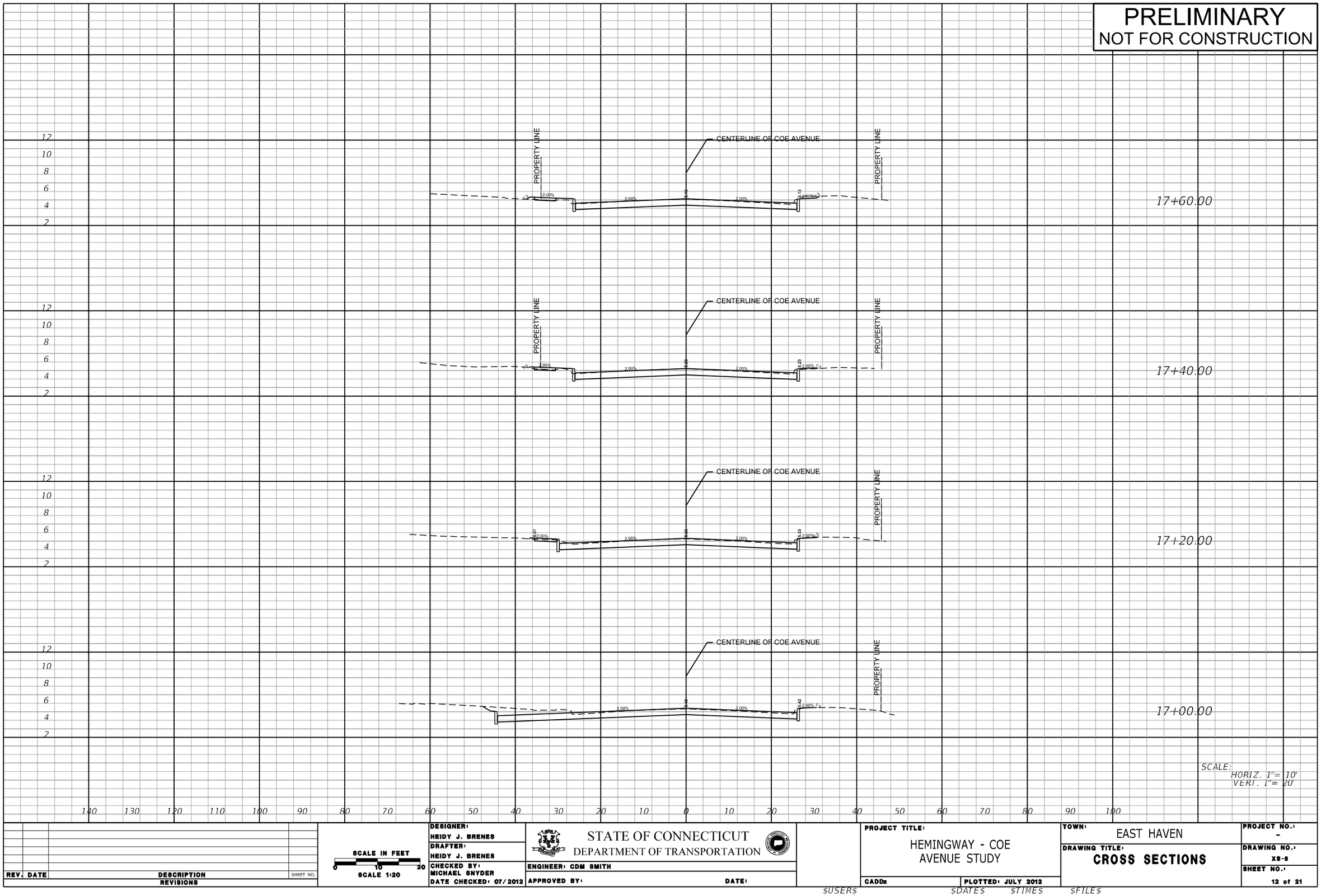


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|---|---|---|---|
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DRAWING NO.: XS-8
SHEET NO.: 12 of 21

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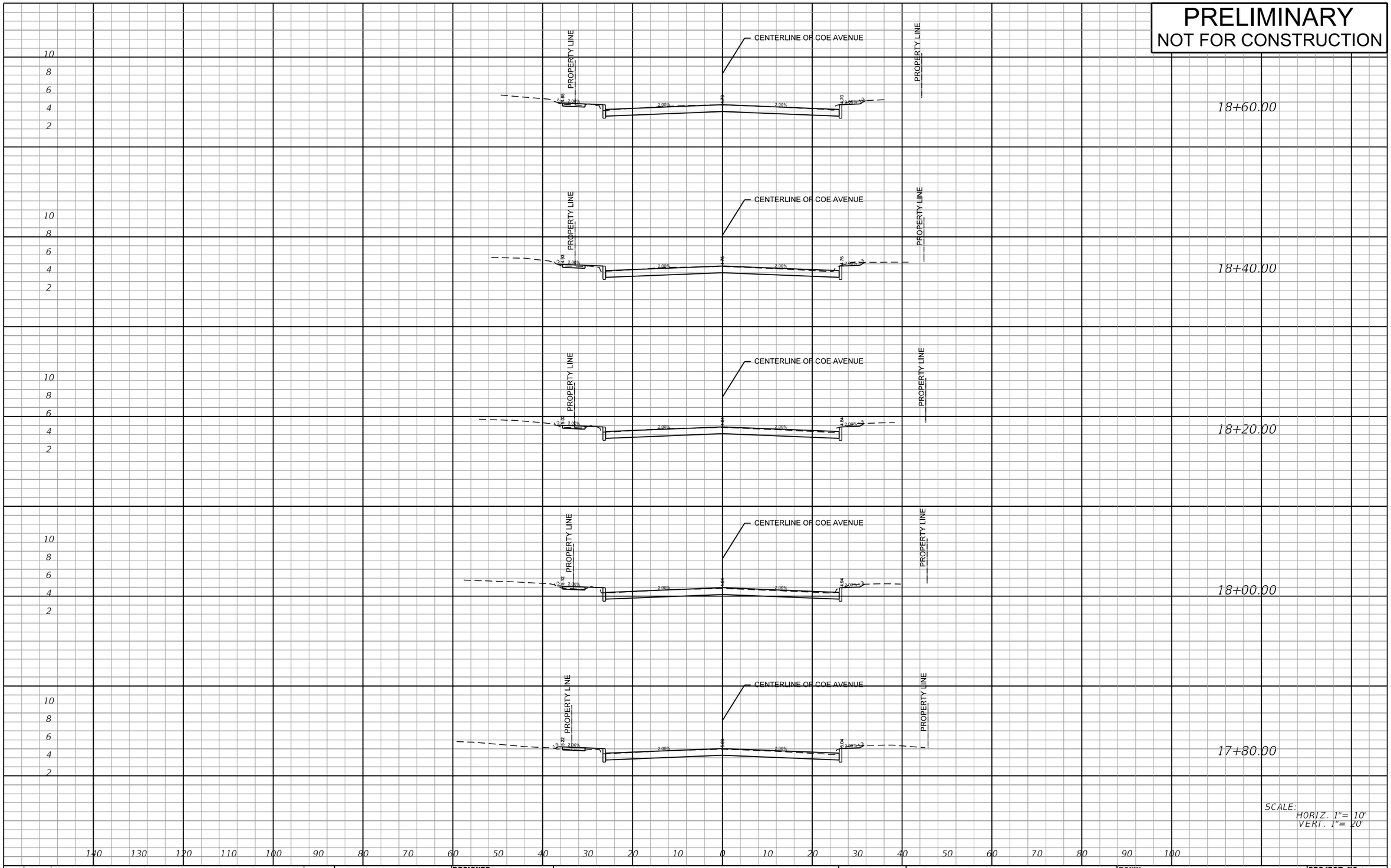


SCALE:
HORIZ. 1"= 10'
VERT. 1"= 20'

| REV. | DATE | DESCRIPTION | SHEET NO. |
|---|---|---|---|
| | | REVISIONS | |

SCALE IN FEET
0 10 20
SCALE 1:20

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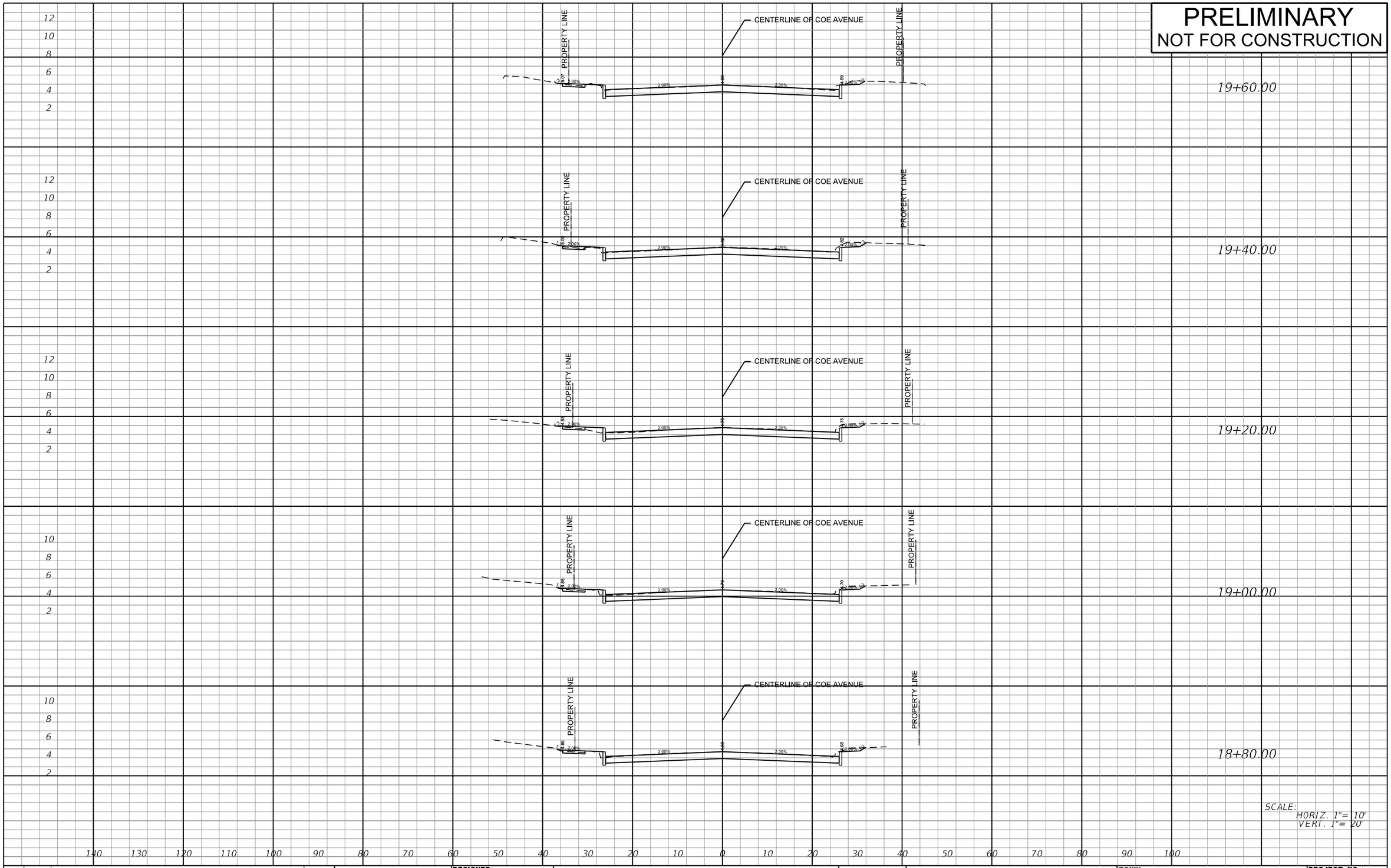
TOWN: EAST HAVEN

DRAWING TITLE:
**CROSS SECTIONS**

PROJECT NO.: -
DRAWING NO.: XS-8
SHEET NO.: 13 of 21

$USER$ $DATE$ $TIME$ $FILE$

PRELIMINARY
NOT FOR CONSTRUCTION

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SCALE IN FEET
0 10 20
SCALE 1:20

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CADDx | PLOTTED: JULY 2012

TOWN: EAST HAVEN

DRAWING TITLE:
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PROJECT NO.: -
DRAWING NO.: XS-10
SHEET NO.: 14 of 21

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PRELIMINARY
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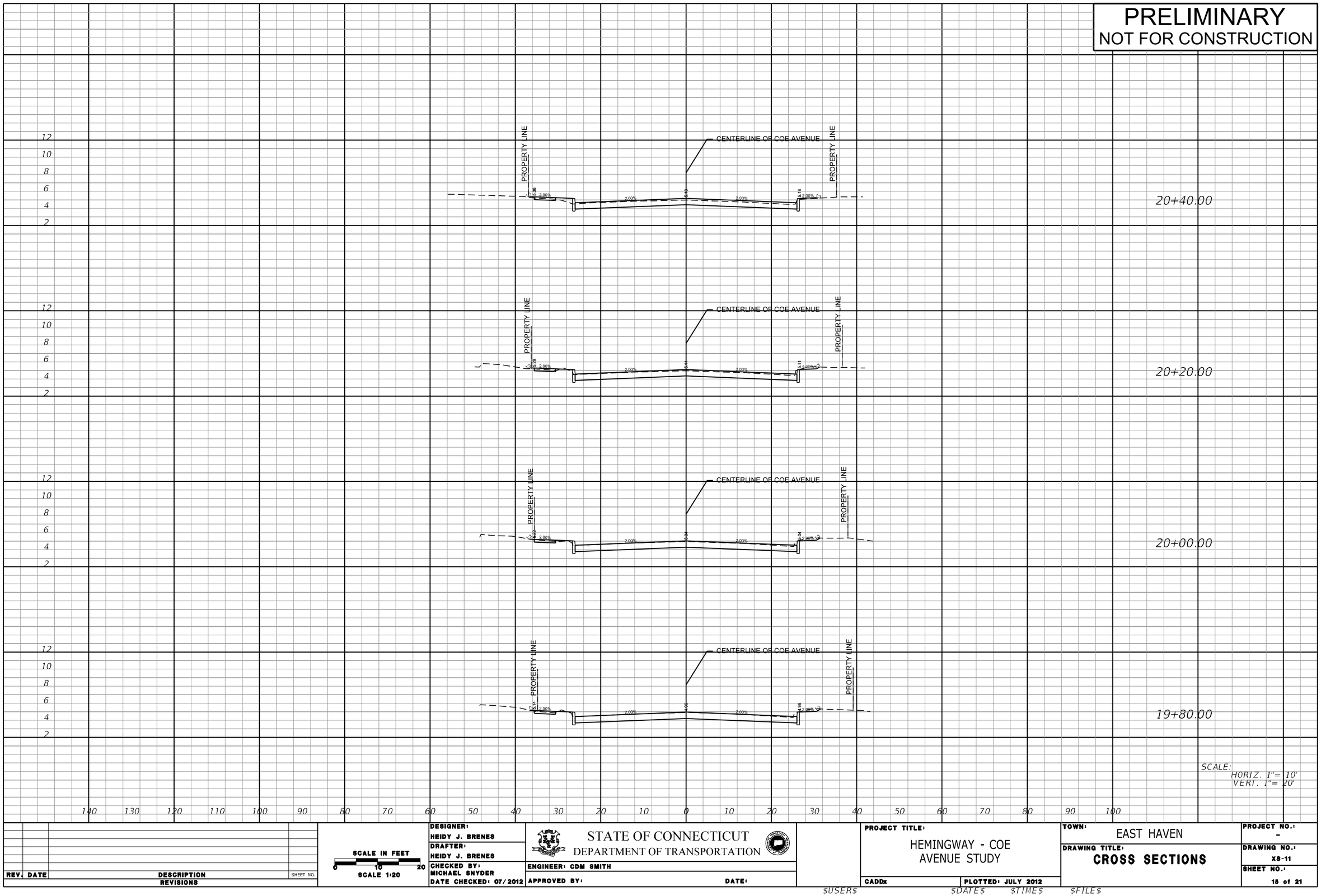


SCALE:
HORIZ. 1"= 10'
VERT. 1"= 20'

| REV. | DATE | DESCRIPTION | SHEET NO. |
|---|---|---|---|
| | | REVISIONS | |

SCALE IN FEET
0 10 20
SCALE 1:20

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ENGINEER: CDM SMITH
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CADDx | PLOTTED: JULY 2012

TOWN: EAST HAVEN

DRAWING TITLE:
**CROSS SECTIONS**

PROJECT NO.: -
DRAWING NO.: XS-11
SHEET NO.: 15 of 21

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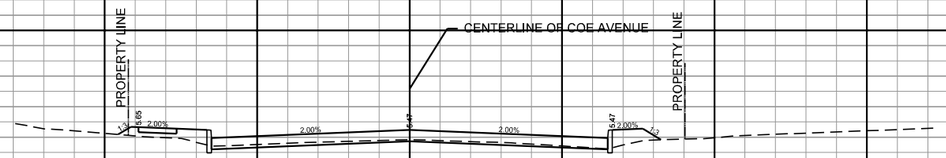
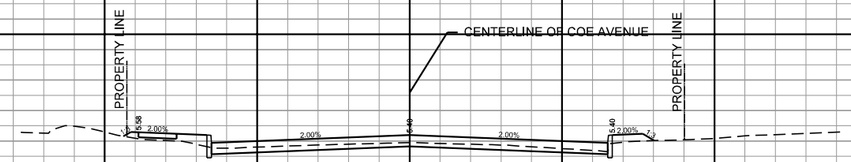



21+20.00

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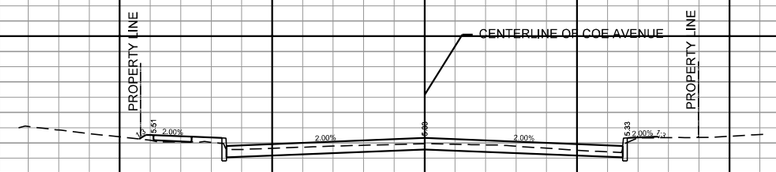


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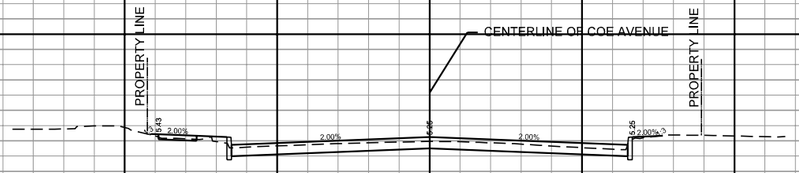


20+60.00

SCALE:
HORIZ. 1"= 10'
VERT. 1"= 20'

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| REV. | DATE | DESCRIPTION | SHEET NO. |
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| | | REVISIONS | |

SCALE IN FEET
0 10 20
SCALE 1:20

DESIGNER: HEIDY J. BRENES
DRAFTER: HEIDY J. BRENES
CHECKED BY: MICHAEL SNYDER
DATE CHECKED: 07/2012

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
APPROVED BY: DATE:

PROJECT TITLE:
HEMINGWAY - COE AVENUE STUDY

CADDx | PLOTTED: JULY 2012

TOWN: EAST HAVEN

DRAWING TITLE:
**CROSS SECTIONS**

PROJECT NO.: -
DRAWING NO.: XS-12
SHEET NO.: 18 of 21

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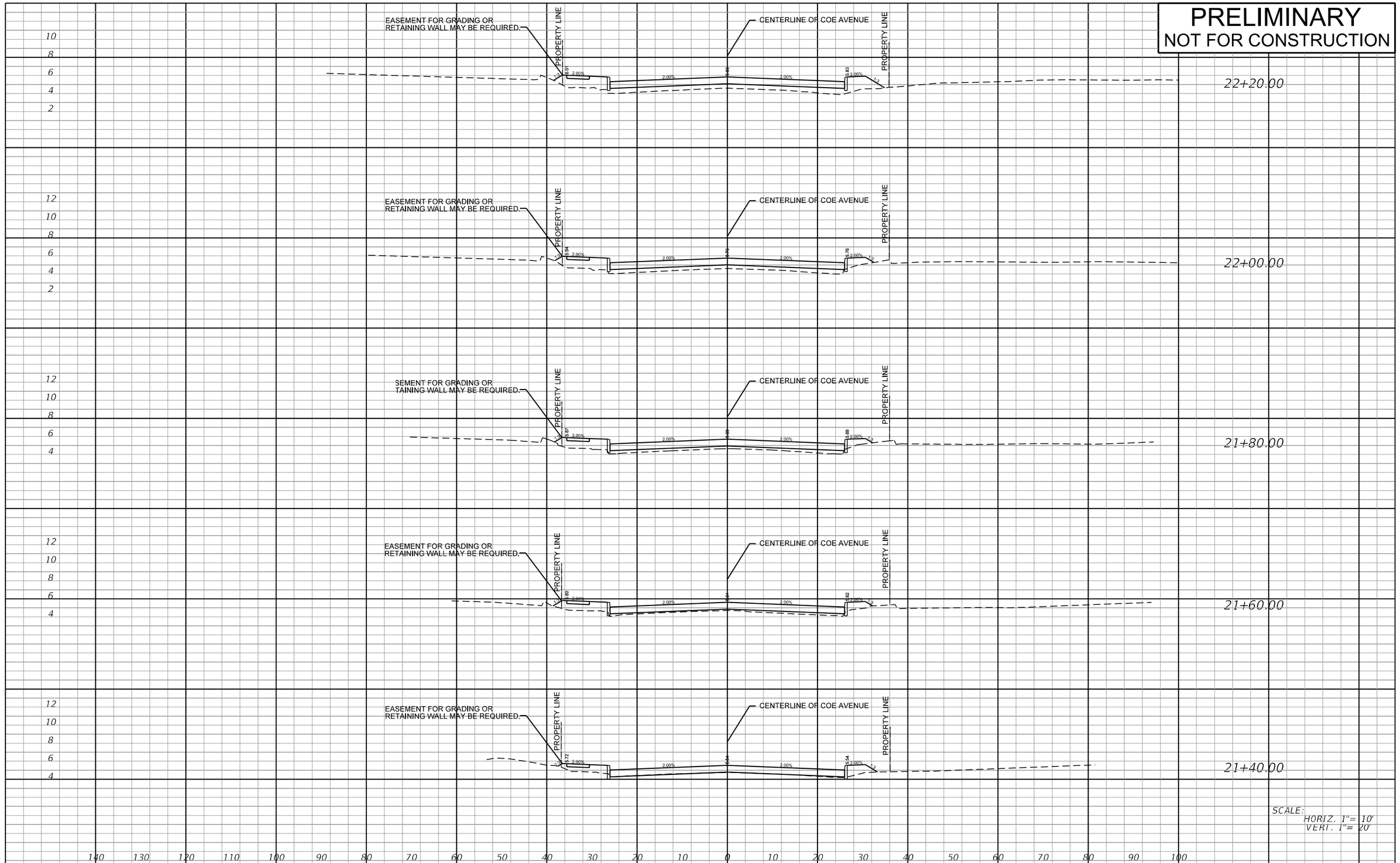
PRELIMINARY
NOT FOR CONSTRUCTION




| REV. | DATE | DESCRIPTION | SHEET NO. |
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SCALE 1:20

DESIGNER: HEIDY J. BRENES
DRAFTER: HEIDY J. BRENES
CHECKED BY: MICHAEL SNYDER
DATE CHECKED: 07/2012

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
APPROVED BY: DATE:

PROJECT TITLE:
HEMINGWAY - COE AVENUE STUDY

CADDx | PLOTTED: JULY 2012

TOWN: EAST HAVEN

DRAWING TITLE:
**CROSS SECTIONS**

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DRAWING NO.: XS-13
SHEET NO.: 17 of 21

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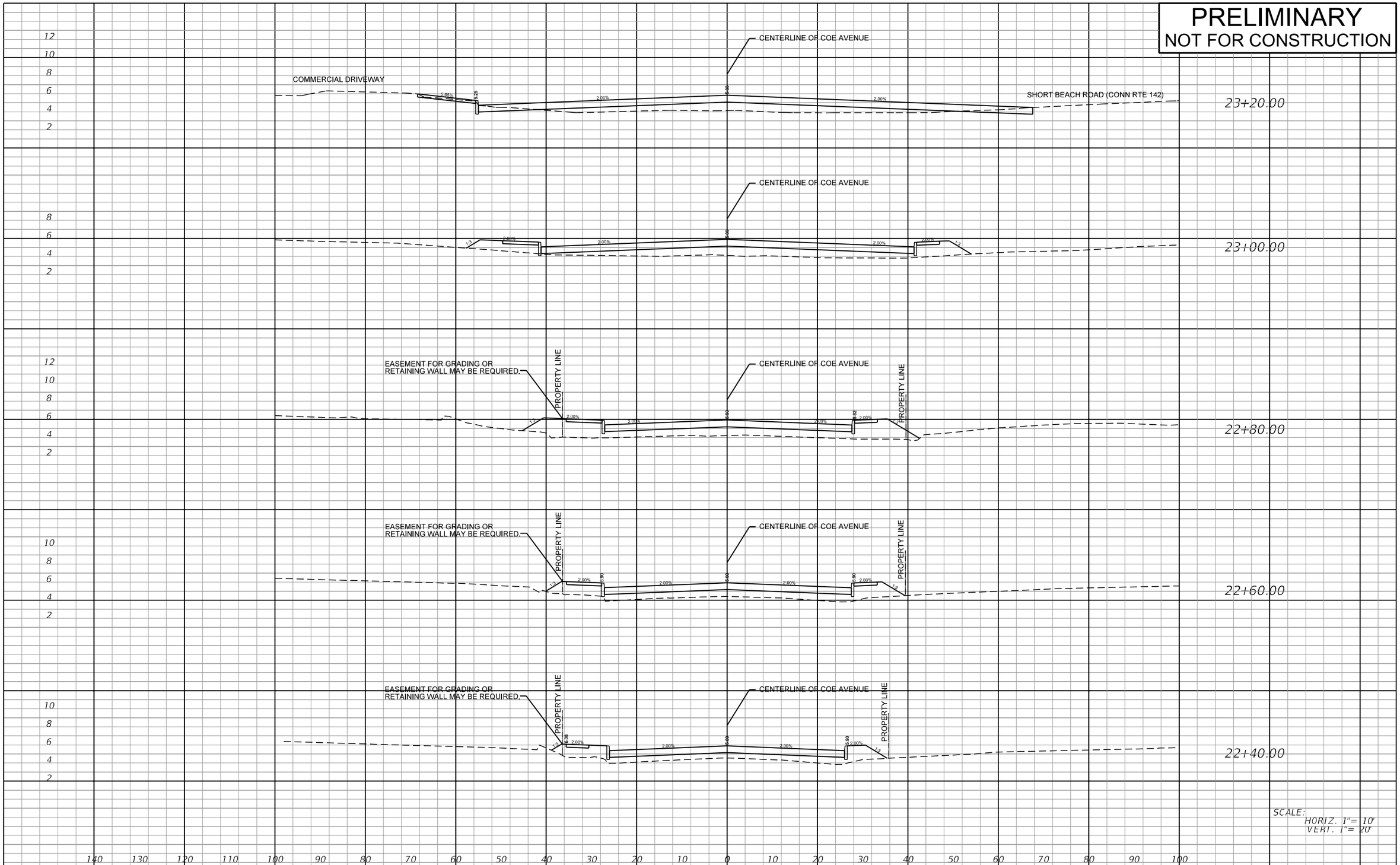


| REV. | DATE | DESCRIPTION | SHEET NO. |
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DESIGNER: HEIDY J. BRENES
DRAFTER: HEIDY J. BRENES
CHECKED BY: MICHAEL SNYDER
DATE CHECKED: 07/2012

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
APPROVED BY: DATE:

PROJECT TITLE:
HEMINGWAY - COE AVENUE STUDY

CADDx | PLOTTED: JULY 2012

TOWN: EAST HAVEN

DRAWING TITLE:
**CROSS SECTIONS**

PROJECT NO.: -
DRAWING NO.: XS-14
SHEET NO.: 18 of 21

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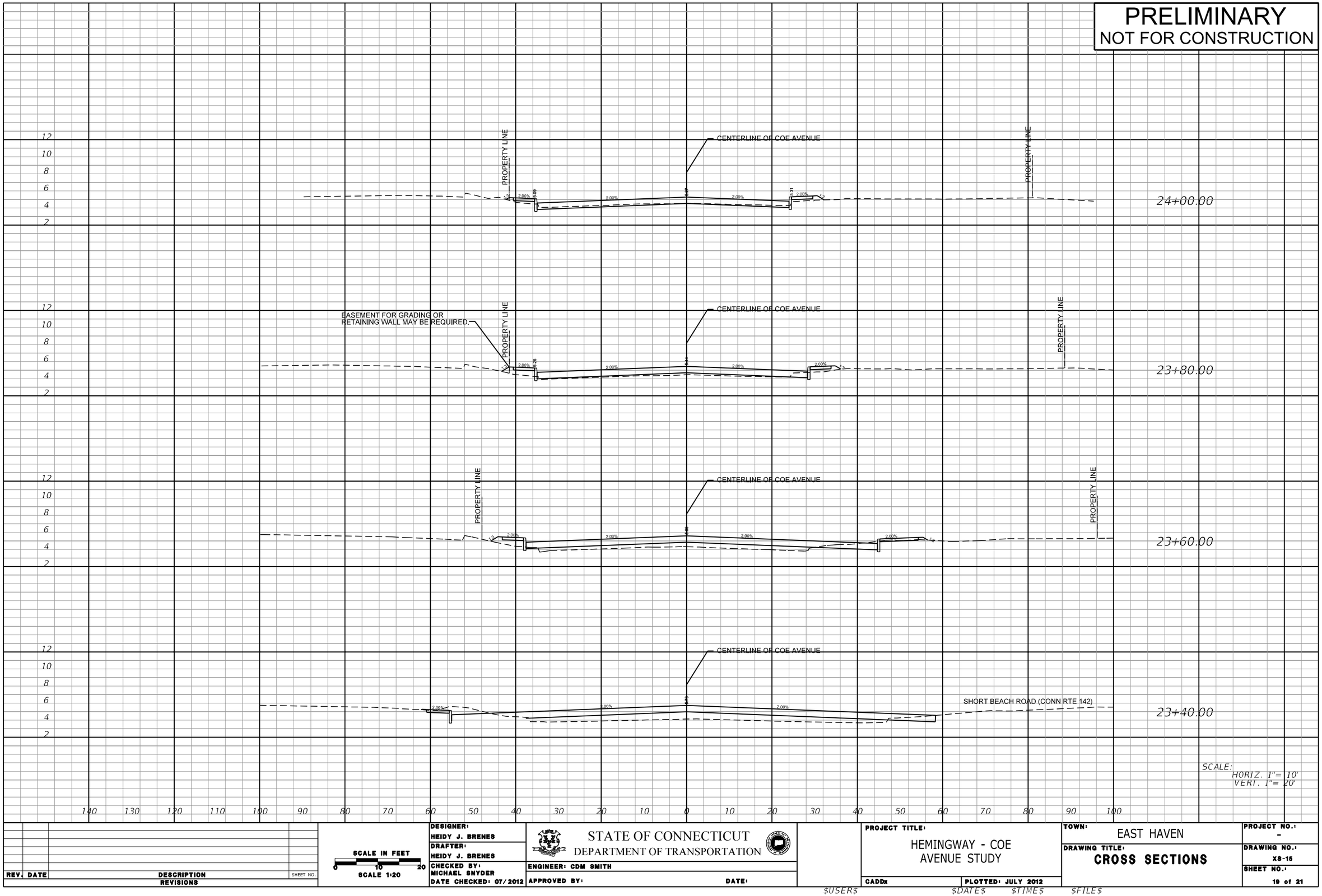


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DESIGNER: HEIDY J. BRENES
DRAFTER: HEIDY J. BRENES
CHECKED BY: MICHAEL SNYDER
DATE CHECKED: 07/2012

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
APPROVED BY: DATE:

PROJECT TITLE:
HEMINGWAY - COE AVENUE STUDY

CADDx | PLOTTED: JULY 2012

TOWN: EAST HAVEN

DRAWING TITLE:
**CROSS SECTIONS**

PROJECT NO.: -
DRAWING NO.: XS-15
SHEET NO.: 19 of 21

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PRELIMINARY
NOT FOR CONSTRUCTION


SCALE:
HORIZ. 1"= 10'
VERT. 1"= 20'

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SCALE 1:20

DESIGNER: HEIDY J. BRENES
DRAFTER: HEIDY J. BRENES
CHECKED BY: MICHAEL SNYDER
DATE CHECKED: 07/2012

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
APPROVED BY: DATE:

PROJECT TITLE:
HEMINGWAY - COE AVENUE STUDY

CADDx | PLOTTED: JULY 2012

TOWN: EAST HAVEN

DRAWING TITLE:
**CROSS SECTIONS**

PROJECT NO.: -
DRAWING NO.: XS-16
SHEET NO.: 20 of 21

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PRELIMINARY
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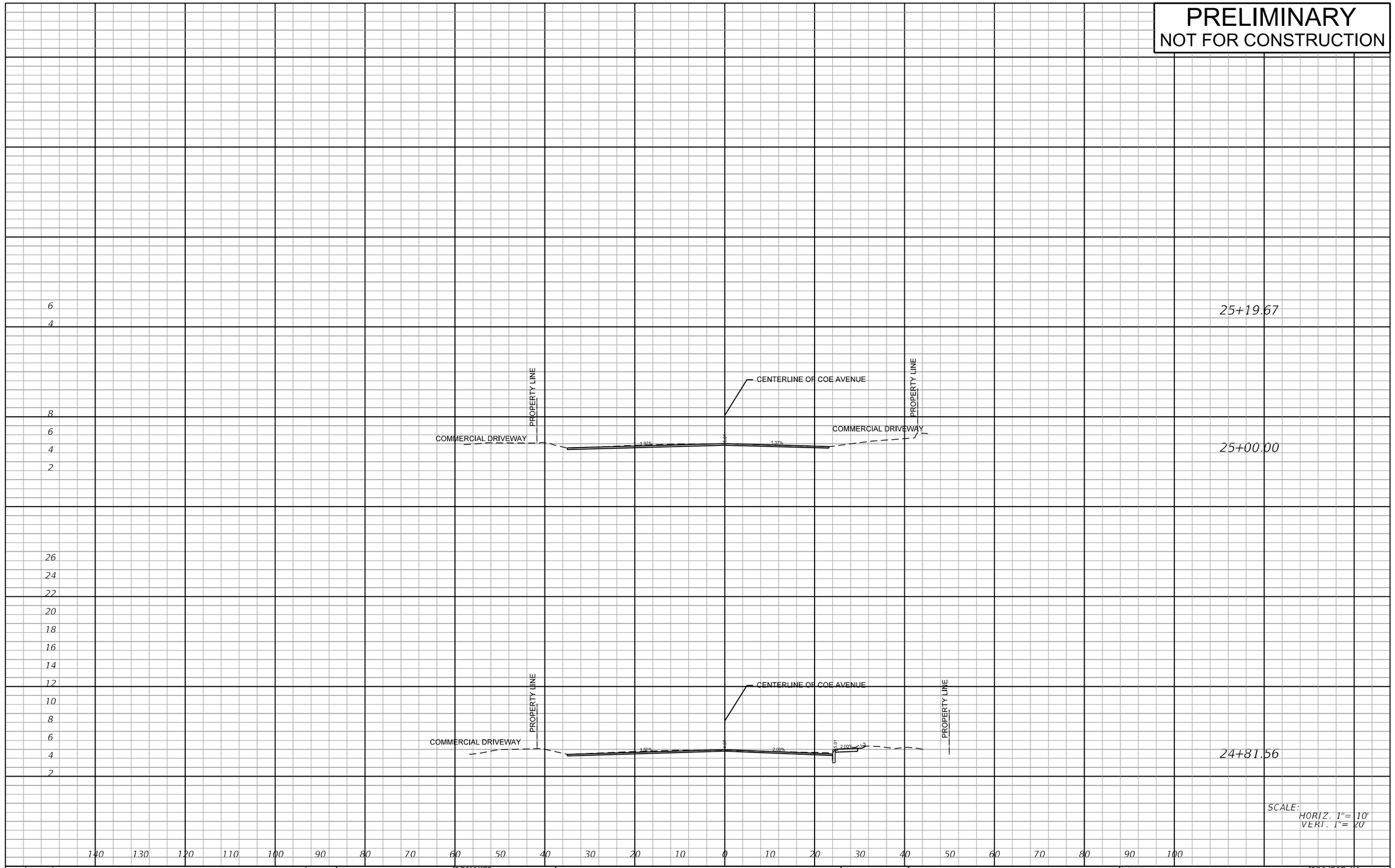


| REV. | DATE | DESCRIPTION | SHEET NO. |
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SCALE IN FEET
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SCALE 1:20

DESIGNER: HEIDY J. BRENES
DRAFTER: HEIDY J. BRENES
CHECKED BY: MICHAEL SNYDER
DATE CHECKED: 07/2012

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
APPROVED BY: DATE:

$USER$

PROJECT TITLE:
HEMINGWAY - COE AVENUE STUDY

CADDx | PLOTTED: JULY 2012

$DATE$ $TIME$ $FILE$

TOWN: EAST HAVEN

DRAWING TITLE:
**CROSS SECTIONS**

PROJECT NO.: -
DRAWING NO.: XS-17
SHEET NO.: 21 of 21

# List of Permits and Agencies

## Local, State and Federal Permits Which May be Required for the Proto Drive Realignment

| Permit | Agency: Town of East Haven | Agency: CTDEEP/ OLISP | Agency: CT DOT | Agency: Federal Agency | Permit Citation | Requirement |
|---|---|---|---|---|---|---|
| **Site Development Plan Application** Town of East Haven | X | | | | East Haven Zoning Regulations http://www.townofeasthavenct.org/pdf/planzone/East-Haven-Zoning-Regulations-May2012.pdf | Since this project will result in modification of lot sizes, it will likely require a review by the Town's Zoning Administrator under the town's Site Plan of Development process; approval of town-sponsored development activities will occur within the C.G.S. 8-24 statutory provisions. |
| **Re-subdivision Approval** Town of East Haven | X | | | | Subdivision regulations of the Town of East Haven http://www.townofeasthavenct.org/pdf/planzone/subdivision-regulations-may2012.pdf | As the project will result in changes to approved subdivision maps, it is considered a re-subdivision, requiring a Re-subdivision Approval. |
| **Demolition Permit** Town of East Haven | X | | | | Application for Demolition Permit http://www.townofeasthavenct.org/building.shtml | If the project will require demolition of existing structures. |
| **Town Plan of Conservation and Development** Town of East Haven | X | | | | [No permit but review and potential modification to Town Plan of Conservation and Development.] | Review of Town Plan of Conservation and Development and determine whether a modification is necessary to enable the expansion of the industrial district and the reconstruction of the street section. |
| **Special Permit for Farm River Flood Plain** Town of East Haven | X | | | | Flood Damage Prevention and Control Ordinance of the Town of East Haven – provisions and standards in Section 29 of the East Haven Zoning Regulations http://www.townofeasthavenct.org/pdf/planzone/East-Haven-Zoning-Regulations-May2012.pdf | The Zoning Administrator and Town Engineer must endorse the application to the general zoning permit as being in compliance with the Farm River Floodplain Overlay District requirements & any required Development Permit under the provisions of the Flood Damage Prevention and Control Ordinance. |
| **CT Coastal Management Act** (CMA)Town of East Haven | X | | | | Per Connecticut General Statutes (CGS) Sections 22a-90 through 22a-112. http://www.ct.gov/dep/lib/dep/long_island_sound/coastal_management_manual/manual_section_5_08.pdf | An Application for Review of Coastal Site Plans is required for any plans impacting coastal boundary, which is defined as a continuous line delineated on the landward side by the interior contour elevation of the one hundred year frequency coastal flood zone, as defined and determined by the national Flood Insurance Act, or a one thousand foot linear setback measured from the mean high water mark in coastal waters, or a one thousand foot linear setback measured from the inland boundary of tidal wetlands, whichever is farthest inland. The entire project area lies within the CMA jurisdictional boundaries. Coastal municipalities are required to undertake coastal site plan reviews including, e.g. architectural floor plans and elevations, hydrology report and stormwater pollution control plan. Applications are submitted to the Town. |
| **Inland Wetlands & Watercourses Permit** Town of East Haven Inland Wetlands and Water Courses Commission | X | | | | Per CGS Sections 22a-36 to 22a-45(a). http://cga.ct.gov/2011/pub/chap440.htm | An application to the Inland Wetlands and Water Courses Commission may be required for this project depending on the classification of the wetlands impacted by the road realignment. |
| **Flood Management Certificate** CTDEEP Office of Inland Water Resources | | X | | | Per CGS Sections 25-68b through 25-68h. http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324172&depNav_GID=1643 | Requires preparation of site plans, sedimentation and erosion control plans, stormwater hydrographs, stormwater pollution control plan (pretreatment basins, possible retention basins) and application form. The Permit requirements include that stormwater water from impervious surfaces be collected and treated to remove a minimum of 80% of total suspended solids. Various technical documents in support of the application include, but are not limited to: floodplain management consistency worksheets and hydrology and hydraulics, engineering design reports, plans and specifications describing the project and, where applicable, how fish populations and fish passage will be protected. |
| **Stream Channel Encroachment Line (SCEL) Permit** CTDEEP | | X | | | Per CGS Sections 22a-342 to 22a-349(a). http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324176&depNav_GID=1643 | Prior to placing any encroachment or obstruction riverward of a SCEL established by DEP under CGS Section 22a-342, a permit must be obtained. The following are examples of regulated activities for which a SCEL permit is needed: construction of structures; excavation or deposition of material; land clearing and grading; and substantial maintenance or repair of non-conforming structures (e.g., buildings that existed when the encroachment lines were adopted). DEP has designated about 270 miles of floodplain throughout the state on "SCEL maps". These maps are on file in the Town Clerk's Office. |
| **Tidal Wetlands, Structures, Dredge and Fill** CTDEEP/ Office of Long Island Sound Programs (OLISP) | | X | | | Per CGS Sections 22a-359 through 22a-363f. http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324180&depNav_GID=1643 and http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324222&depNav_GID=1643#LongIslandSound | For projects that impact tidal wetlands, the statutes require preparation of site plans, sedimentation and erosion control plans, stormwater hydrographs, stormwater pollution control plan (pretreatment basins, possible retention basins) and application form. The Permit requirements include that stormwater water from impervious surfaces be collected and treated to remove a minimum of 80% of total suspended solids. |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Water Diversion Permit**<br>CTDEEP Office of Inland Water Resources | | X | | | CT Water Diversion Policy Act per CGS Sections 22a-365 to 22a-378(a).<br>http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324178&depNav_GID=1643 | This program, administered by the Bureau of Water Protection and Land Reuse's Inland Water Resources Division, regulates activities which cause, allow or result in the withdrawal from, or the alteration, modification or diminution of, the instantaneous flow of the waters of the state. In general, any person proposing a diversion which was not registered with the Department and, which is not exempt, must apply for a permit. You must apply for a permit if, among other things, you propose to construct or otherwise modify roadway crossings or culverts which provide detention or retention of watercourse flows either by design or default; or relocate, retain, detain, bypass, channelize, pipe, culvert, ditch, drain, fill, excavate, dredge, dam, impound, dike, or enlarge waters of the state. |
| **Stormwater Permit Associated with Construction Discharges**<br>CTDEEP | | X | | | Per CGS Section 22a-430(b);<br>DEP-PERD-GP-015<br>http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324212&depNav_GID=1643 | This general permit applies to all discharges of stormwater and dewatering wastewater from construction activities which result in the disturbance of *one or more* total acres of land area on a site regardless of project phasing. For construction projects with a total disturbed area (regardless of phasing) of between one and five acres, the permittee shall agree to adhere to the erosion and sediment control land use regulations of the town in which the construction activity is conducted. No registration of this general permit shall be required for such construction activity as long as it receives town review and written approval of its erosion and sediment control measures and follows the Guidelines. If no review is conducted by the town, the permittee must register and comply with Section 6 of this general permit. For construction projects with a total disturbed area (regardless of phasing) of greater than five acres, registration is required to be submitted in order for the discharges to be authorized by this general permit. |
| **State Traffic Signal Approval**<br>CT Department of Transportation | | X | | | Per CGS Section 14-299.<br>http://www.ct.gov/dot/cwp/view.asp?A=1394&Q=259542 | Permits for the installation, revision, and removal of traffic control signals are issued to the Local Traffic Authority having jurisdiction – in East Haven it is the Police Commission. |
| **Coastal Zone Management (CZM) Consistency**<br>CTDEEP Office of Inland Water Resources | | X | | | CZM Concurrence under Section 307 of the Federal CZM Act of 1972, as amended.<br>http://www.ct.gov/dep/cwp/view.asp?A=2705&Q=441852 | Requires applicants to obtain a certification or waiver from the CTDEEP that the activity complies with the CT Coastal Management Program for activities affecting the state's coastal area. |
| **Section 401 of the Federal Clean Water Act** (Water Quality Certification) CTDEEP Inland Water Resources Division and OLISP | | X | | | Section 401 of the Federal Clean Water Act (33 U.S.C. 1314) and per CGS Sections 22a-30-1 through 22a-30-17.<br>http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324168&depNav_GID=1643 | The 401 Water Quality Certification program, administered by the, regulates any applicant for a federal license or permit who seeks to conduct an activity that may result in any discharge into the navigable waters, including all wetlands, watercourses, and natural and man-made ponds. Such persons must obtain certification from DEP that the discharge is consistent with the federal Clean Water Act and the Connecticut Water Quality Standards. |
| **Certificate of Operation of a Major Traffic Generator**<br>CT Department of Transportation | | | X | | Per CGS Section 14-311.<br>http://www.ct.gov/dot/cwp/view.asp?A=1394&Q=259538 | A certificate of operation is required for all developments of 100,000 square feet of floor area and/or 200 or more parking spaces which abut or adjoin a state highway or which substantially affect state highway traffic. A certificate is required for any new development or an expansion of an existing development which, in its entirety, equals or exceeds the aforementioned thresholds and abuts or adjoins a state highway. A new certificate is required for any development which is already certified, and is increasing its parking facilities by 50 or more parking spaces, increasing in square footage or is proposing any significant change in use from that previously approved (i.e., office-to-retail).<br>Developments which do not abut or adjoin a state highway, but equal or exceed the aforementioned thresholds, must first be evaluated to determine if a Certificate will be required. |
| **State Highway Encroachment**<br>CTDOT | | | X | | Per CGS Section 13b-17, Regulations, Delegations of duties and responsibilities of commissioner, Section 13a-143a, Driveway Permits and Section 13a-247, Excavations and Obstructions.<br>http://www.ct.gov/dot/cwp/view.asp?A=1394&Q=259544 | A permit (e.g. curb-cut permit) may be required if any change is made in the structure, layout, drainage or topography of a State highway and its appurtenances. Since Coe Avenue is a state highway, an Encroachment Permit will be required from the Connecticut Department of Transportation. |
| **National Environmental Policy Act (NEPA) and Connecticut Environmental Policy Act (CEPA)**<br>EPA Region 1 Office of Environmental Review | | | | X | Full NEPA review, including environmental assessments (EA's) or environmental impact statements (EIS's), may be required if federal agencies' funding is used or if federal agencies must make any permitting decisions. Similarly, CEPA review, EA's or EIS's may also be required if state funds are used for any portion of the project, depending on the threshold requirements of each state agency.<br>http://www.epa.gov/region1/nepa/ | NEPA and CEPA requirements go into effect when airports, buildings, military complexes, highways, parkland purchases and other federal or state sponsored activities with the potential for impacts are proposed. Environmental assessments (EA's) or Environmental Impact Statements (EIS's), which are assessments of the likelihood of impacts from alternative courses of action, are required from all federal and state agencies and are the most visible NEPA/CEPA requirements. NEPA/CEPA requires agencies to disclose these impacts to interested parties and the general public. The central element in the environmental review process is a rigorous evaluation of alternatives including the "no action" alternative. |
| **National laws protecting species**<br>EPA and Fish and Wildlife Service | | | | X | Endangered Species Act, Migratory Bird Treaty Act, or Wild Bird Conservation Act<br>http://www.fws.gov/permits/legacyfs.pdf | Review of these laws and the related requirements may be required if the habitat of any of the listed threatened or endangered species is in the impacted location. |
| **Section 404 of the Clean Water Act,**<br>Department of the Army<br>New England District -<br>US Army Corps of Engineers<br>(USACOE) | | | | X | The Corps of Engineers regulates work and structures that are located in, under or over navigable waters of the United States under Section 10 of the Rivers and Harbors Act of 1899; the discharge of dredged or fill material into waters of the United States under Section 404 of the Clean Water Act; and the transportation of dredged material for the purpose of disposal in the ocean (regulated by the Corps under Section 103 of the Marine Protection, Research and Sanctuaries Act).<br>http://www.nae.usace.army.mil/Regulatory/ | "Waters of the United States" are navigable waters, tributaries to navigable waters, wetlands adjacent to those waters and/or isolated wetlands that have a demonstrated interstate commerce connection. Review is conducted jointly by the ACOE and CTDEEP (see CT 401 Water Quality Permit). Additional review by U.S. Fish and Wildlife, U.S. Environmental Protection Agency and other federal agencies may be conducted based on potential impacts of the wetlands or wildlife habitat. Since the relocation of Proto Drive will require the deposition of fill (or dredged) materials within the jurisdictional limits of the USACOE (i.e. waterward of the high tide line), an Individual permit will likely be required. The National Oceanic and Atmospheric Administration (NOAA) may also be involved for review if federal funds are involved. |
| **Federal Aviation Administration** | | | | X | | May need review of new street lights by the FAA regarding airfield lighting safety in the vicinity of the New Haven airport. |

Note: This permit list is based on a preliminary assessment; actual permitting requirements may vary and will require documentation of existing coastal and environmental resources, preliminary engineering and additional research.

# NANCY DUTTA, PH.D., PE, PTOE

**TITLE**
Traffic Engineer

**EDUCATION**
Doctor of Philosophy, Civil Engineering, University of Charlotteville, 2019

Master of Science, Civil Engineering, University of Massachusetts, 2011

**YEARS OF EXPERIENCE:**
6

**YEARS WITH VN:**
1

**PROFESSIONAL REGISTRATIONS**
- P.E., VA #040263817
- PTOE, 2022

**PROFESSIONAL AFFILIATIONS**
- Institute of Transportation Engineer
- LeadershipITE Alumni (Class of 2020)

Nancy Dutta has over five years of experience in the transportation engineering. She has worked in both private and public sector and in multitude of projects involving traffic safety, data analysis, intelligent transportation systems, traffic operations and site development. She is a registered professional engineer in Virginia and an active member of Institute of Transportation Engineers (ITE). Nancy is experienced in the use of computer applications including Synchro, Highway Capacity Software (HCS), VISTRO, VISIO and R.

## EXPERIENCE

**SCRCOG Congestion Management Report.** This is a congestion management report update for SCRCOG that identifies the region's most congested roadways and help the COG take appropriate actions. As part of this project, Nancy coordinated the travel time data collection effort, included the new congestion performance measure adopted by CTDOT in the report and updated the report and summary tables. (09/2022 – Present)

**Toelles Rd Safety Study.** This project includes evaluation of the existing condition and past crash history at Toelles Road and Hartford Turnpike intersection and propose safety improvements that could range from low-cost alternatives to more elaborate geometric and new traffic signal alternatives. Nancy is responsible for obtaining the crash data for this intersection and its approaches, preparing summary tables and crash diagram, and identifying crash patterns. She developed several alternatives and evaluated their effectiveness using crash modification factors, cost, and constructability. (11/2022 - Present)

**Route 15 Interchange 59 Improvements.** The project involves the widening of Route 15 to incorporate acceleration and deceleration lanes for all ramps at interchange 59 and the addition of a new loop ramp to access Route 15 northbound from Route 69 southbound in New Haven and Woodbridge. Nancy performed the safety analysis and identified crash patterns and high crash locations within the study area, developed collision diagrams to graphically depict on-ramp and off-ramp crashes. She also proposed improvements based on the crash patterns and evaluated them using the crash reduction factors related to the improvements. (07/2022 – Present)

**Route 161 corridor study.** This project includes assessment of existing and forecasted conditions of Route 161 in Town of East Lyme and develop a comprehensive plan to guide future transportation improvements along the corridor. Nancy was involved in the safety analysis part of the project and analyzed crash data and identified potential safety issues along 3.7 miles of Route 161 corridor. (04/2022 – 06/2022)

**I-95 Planning and Environmental Linkages (PEL) Study.** This project includes crash analysis for over 50 intersections and key segments along I-95 in Stamford. The task includes summarizing five years of crash data and developing crash diagrams for each location and identifying the prominent crash types and level of injury. Nancy Dutta is responsible for gathering and analyzing crash data, developing crash diagrams, prepare safety analysis report and coordination with VN team members internally to ensure efficient workflow. (2021-Present)

**Bridge Replacement, Bridge No. 01872, Route 1 over Greenwich Creek, Greenwich, CT.** This project included the replacement of existing Bridge No. 01872 which carries U.S. Route 1 over Greenwich Creek in Greenwich, CT. VN Engineers was responsible for the design of Temporary and Permanent Traffic Signalization Plans for the intersection of US Route 1 at Hillside Road. Nancy was involved in calculating clearance intervals and preparing the quantity estimates and special provisions for all the temporary and permanent traffic signalization items. (5/2018-Present).

Gorove Slade Associates, Alexandria, VA. Transportation Engineer. Performed traffic and transportation impact studies for Arlington County, City of Alexandria and DDOT projects. Prepared parking management plan (PMP) and transportation management plan (TMP) documents. Performed multimodal transportation studies. Conducted transportation demand management and capacity analysis. (10/2019 – 11/2020)

T3 Design Corporation, Fairfax, VA. Transportation Engineer II. Performed intersection improvement studies for VDOT/SHA. Conducted safety assessment and detour analysis for VDOT. Performed numerous Signal timing optimization and warrant analysis. Prepared tech memo and detailed report to present the project findings. (6/2019 – 10/2019)

Virginia Transportation Research Council (VTRC)/ University of Virginia, Charlotteville, VA. Graduate Research Assistant. Performed data analysis and evaluation of the Diagonal Down Yellow Arrow Lane Use Control Signal. This project was a MUTCD experimentation to determine the usefulness of a new type of lane control signal. Evaluated the effect of the I-66 Active Traffic Management System on safety and operations. Conducted research on how to improve the current safety analysis methodology included in Highway Safety Manual to better address traffic conditions and dynamic countermeasures. (8/2015 – 5/2019)

Binghamton Metropolitan Transportation Study, Binghamton, NY. Traffic Engineer. Conducted traffic operations studies and developed alternative solutions for Village of Endicott under the jurisdiction of Broome County. Performed traffic signal warrant studies for all state-owned traffic signal in Binghamton. Performed safety audits on streets under local jurisdiction and developed sustainable countermeasures for city of Binghamton and village of Endicott. (8/2012 – 03/2014)

# ROBERT S. GOMEZ, P.E.

**PROJECT TITLE**
Project Manager / Traffic

**EDUCATION**
Bachelor of Science Civil Engineering, Florida International University; Miami, Florida 1994

**YEARS OF EXPERIENCE:**
37

**YEARS WITH VN:**
14

**PROFESSIONAL REGISTRATIONS**

- Professional Engineer
  1999 FL #53847
  2004 GA #29873
  2004 CT #23842
  2007 NY #85134-11999
  2009 MA #48289
  2010 RI #9378
  2015 PA #082911
  2020 VA #062120

**PROFESSIONAL AFFILIATIONS**

- Past President of American Society of Highway Engineers
- Past President of Connecticut Society of Civil Engineers

Mr. Gomez has 37 years of experience in transportation engineering. He is proficient in design standards, procedures, practices, and guidelines. He brings years of experience in a wide variety of roadway and CADD software including MicroStation, OpenRoads and InRoads. As a project manager, he takes a hands-on approach to project management and is involved in all phases of rail and roadway design.

## EXPERIENCE

**Task Order Regional Transportation Safety Studies, Various Locations.** Project Manager for a study that will assist the CTDOT in developing a Regional Transportation Safety Plans for various Municipal Planning Organizations. The Regional Safety Study serves as a road map and strategy to save lives. The study is data-driven, multimodal and multidisciplinary, and it will identify collaborative partners. The project includes the collection of crash and traffic volume and analyzing using arcGIS tools to prepare crash maps and identify high crash intersections and corridors. The data is then used to make countermeasure recommendations based on FHWA list of proven countermeasures. The studies involve the following tasks: Task 1: Data Collection, Task 2: Document Review, Task 3: Stakeholder Meetings, Task 4: Data Analysis, Task 5: Countermeasure Selection, Task 6: Prioritize/Initiate Projects, and Task 7: Report Preparation.

**U.S. Route 1 Operational Lanes, Orange, CT.** Project Manager for the development of the new storm drainage design to accommodate and provide stormwater quality for the additional impervious surface associated with the roadway widening. Oversaw the development of Synchro models and traffic analysis for the development of the new signal designs and optimization of the signal timings at the intersections of Boston Post Road (Route 1) with Peck Lane, Orange Center Road, and Lambert Road. Oversaw the preparation of a traffic study and Traffic Signal and Signing and Pavement Marking Plans.

**Rehabilitation of the Approach Spans for Arrigoni Bridge No. 00524, Middletown and Portland, CT.** Project Manager. Provided QA/QC for the production of Signing and Pavement Marking, Maintenance and Protection of Traffic, Illumination, Incident Management System, and Highway plans for the approach spans to the Arrigoni Bridge.

**Waterbury Downtown Traffic Signal Upgrade, Waterbury, CT.** Project Manager. Oversaw the performance of traffic signal analysis, modeling, and design of 10 signalized intersections in Downtown Waterbury as part of the Congestion Mitigation and Air Quality (CMAQ) program. Project included revised traffic signal timing and phasing and implementation of wireless interconnect coordination and leading pedestrian intervals to optimize traffic operations and reduce congestion. Participated in public outreach for the project to solicit input from the public on known issues and identify concerns within the project area.

**Bicycle-Pedestrian Safety Corridors Study Greenwich, Stamford, Norwalk and Westport, CT.** Project Manager. VN Engineers identified bike and pedestrian safety deficiencies on corridors identified by SWRPA, and designed street improvements that calm traffic, improve pedestrian and bike connectivity, and comfort, while enhancing the urban environment. Project included design of innovative bike infrastructure such as bike boxes, sharrows, and buffered bike lanes, and enhancing the pedestrian realm with widened and texturized sidewalks and crosswalks, pedestrian refuge islands, and curb extensions.

**Traffic Control Signal Replacement Project on State Roads in District 4.** Project Manager for the preparation of signal plans and signal analysis for signal replacements for the intersection of Route 4 at Huckleberry Hill Road in Farmington, CT and at Route 6 at Route 17 at Town Hall Library Drive in Woodbury, CT. The project included installation of new signal support structures, 360-degree video detection and accessible pedestrian signals with concurrent signal phasing.

**Bridge No. 00388- Route 17 Northbound over Route 17 Southbound Ramp 007, Glastonbury, CT.** Project Manager. Provided QA/QC for the performed traffic analysis to address changes to the interchange geometry and the design of new signal plans at the intersections of New London Turnpike with Oak Street/Williams Street East and the Route 17 southbound on/off-ramps.

Transportation Plan for Lake Avenue and West Street, Danbury, CT. Project Manager. This study addressed and documented the numerous roadway safety concerns throughout the area. Some road safety concerns documented included traffic flow and safety operations, an existing narrow and low clearance railroad structure, and periodic flooding. Options were evaluated and roadway capacity upgrades were recommended. This project also included the creation of a mapped driveway management and pedestrian access plan. Coordination with HART was important to consider transit service and operation in the corridor and typical details and guidelines for enhancement and beautification along the corridor were developed. A list of improvements and project cost estimates were developed and presented to the public.

Charter Oak Bridge, Hartford/East Hartford, CT, SPN. 63-703. Project Manager. The proposed improvements included widening I-91 northbound to extend the four-lane travel section from Interchange 27 to Interchange 29 to relieve congestion, address significant safety concerns, and provide an efficient I-91 to I-84 connection. It was also proposed to remove the existing ramp at I-91 northbound Interchange 29 and provide a major diverge south of the I-91 bridge over route 15 to address the existing adverse vertical grade and limited capacity of the existing ramp. Responsibilities on this project included providing QA/QC for the traffic analysis utilizing Highway Capacity software, the design of maintenance & protection of traffic staging and detour plans and the design of signing and markings.

Preliminary, Semi-Final, and Final Design for Bridge Nos. 03160A-D. 03301, and 03303 – I-84 EB and WB over Amtrak and Local Roads (Aetna Viaduct), Hartford, CT. Project Manager. Provided QA/QC for the design of maintenance and protection of traffic plans, detour plans, signing and pavement marking plans, traffic standard and guide sheets, special provisions, quantities, and cost estimates.

CT*fastrak*. Project Manager for a 2.5-mile section of a new BRT contained within the Amtrak rail corridor in Hartford, CT. The project entails design of a new two-lane BRT facility including drainage design, permit coordination, public involvement, signalization, lighting design, four new bridges, and multiple retaining walls. Project included the development of the signing and marking plans for the project.

I-95 US-1 Exit 14 &15 Improvement Project, Norwalk, CT. Project Manager for the preliminary and final traffic engineering design and public outreach services for the reconstruction of I-95 Interchange 14, Norwalk, CT. Responsible for overseeing capacity analyses utilizing Synchro and HCS software programs. Design of four traffic signals including required revisions to an existing traffic signal interconnect. Design of highway illumination for the I-95 mainline and associated ramps. Preparation of pavement marking and ground mounted regulatory, warning, and guidance signing design for all state and town roadways within the project limits, estimated quantities, and preparation of special provisions. Oversaw the development of the project website and ongoing site maintenance.

Design of the I-84 Interchange 5, 6, and 11 Improvements, Danbury and Newtown, CT. Project Manager for operational analysis and capacity analysis for six signalized intersections and three unsignalized intersections using Synchro and Highway Capacity software. Accident data was collected and summarized in collision diagrams. A warrant analysis was prepared for four intersections. A PE report was prepared outlining improvements addressing safety and operations to I-84 and the route 34 and route 25 intersection including acceleration lanes, deceleration lanes, taper lengths, and the need for turning lanes. Design of three traffic signals and traffic signal improvements for four signalized intersections including quantities and special provisions.

Reconstruction on I-95/I-91/Rte-34 Interchange State Project Nos. 92-619 & 92-531/622, New Haven, CT. Project Manager. Responsible for oversight and QA/QC of the operational and capacity analysis of nine signalized intersections for this project using highway geometric design criteria including capacity, intersection sight distance, design vehicle, lane arrangements, lane widths, and volumes etc. Design drawings for all intersections were prepared by developing a fiber-optic interconnected traffic signal system controlled by the City of New Haven's system. Developed plans, special provisions, and details for the installation of the signals and interconnect. Developed signing for the maintenance of traffic plans, ground mounted and overhead guide signing to facilitate twelve construction stages; developed approximately thirty overhead temporary and permanent signing for the freeway corridor, ramps, and local streets that supported cross-sections, and quantities, special provisions, and proposal estimate; and prepared ground mounted regulatory, warning, and guidance signing and overhead guide side designs for approximately fifteen locations. Designed permanent highway illumination, preparing ten 1:500 scale design plans and prepared temporary illumination design for each of the twelve construction stages.

Route 305 Corridor Study, Bloomfield and Windsor, CT. Project Manager. The Route 305 study corridor is approximately 2.5-miles and extends from Interstate 91 – Interchange 37, in the Town of Windsor, westerly to Route 187 in the Town of Bloomfield. The study evaluated options of extending Route 305 in Bloomfield westerly to Route 189 (a distance of approximately 2 miles). Tasks included the preliminary traffic engineering analysis of twelve intersections, the preparation of traffic simulations for presentation at public hearings, and accident analysis of intersections within the study corridor.

# SYDNEY BROOKS LALUNA, P.E.

**PROJECT TITLE**
Traffic Engineer

**EDUCATION**
Bachelor of Science, Civil Engineering, Worcester Polytechnic Institute, Worcester, MA, 2018

**YEARS OF EXPERIENCE:**
5

**YEARS WITH VN:**
5

**PROFESSIONAL REGISTRATIONS:**
- Professional Engineer
  2022 CT #0036324

**PROFESSIONAL AFFILIATIONS**
- Chi Epsilon Honor Society President (2017-2018)
- Rho Lambda Leadership Society
- American Society of Civil Engineers
- Phi Sigma Sigma Sorority

Mrs. Brooks LaLuna is a highly skilled and experienced professional engineer. Her technical proficiency includes a variety of software such as Microsoft Office, Bentley Connect Systems, AutoCAD, Synchro, Highway Capacity Software, HydroCAD, Civil 3D, Revit, Matlab, RISA 2D, Primavera, iMovie, Photoshop, Echo360, Logger Pro, Maple, and social media. Additionally, she has hands-on experience with various equipment including miter saws, planners, coping saws, mechanical fretsaws, G- and C-clamps, car jacks, and hydraulic car lifts. She is professional, meticulous, and a respected team member, maintaining excellent client relations throughout her career.

## EXPERIENCE

**Traffic Assessment for Proposed Fast-Food Restaurant with Drive-Thu**. Evaluated the traffic impact of a proposed fast-food restaurant development in Waterbury, CT. Performed traffic capacity analysis and crash analysis for the Route 69 corridor including five signalized intersections. Determined site-generated traffic and distribution patterns per the Institute of Transportation Engineers (ITE) Trip Generation Manual. Summarized results within a traffic report.

**Rehabilitation of Bridge No. 00162, Interstate 95 over Metro-North Railroad, West Haven, CT**. Assisted in the preparation of a traffic study along State Route 122 (First Avenue) to assess current traffic operations and identify possible signal-focused improvements at the study area intersections to improve progression along First Avenue.

**Old Dominion Freight Lines, North Haven, CT.** A Comprehensive Traffic Impact Assessment report for a proposed Old Dominion Truck Terminal Facility. The study included a thorough analysis of five intersections in proximity to the proposed facility site. Existing and future traffic conditions, as well as crash history, were examined to the standards relative to the local approval and OSTA review processes. Responsibilities included: Primary author of the report, performed the crash analysis, traffic counts, calculated future traffic volumes and determined site generated trips, developed the Synchro traffic model, performed the capacity analysis, and compiled OSTA submission documents.

**Hartford Line, CT Rail – Windsor Locks and North Haven Stations.** Developed two new signal plans in Windsor Locks involving the New Haven-Hartford-Springfield railroad grade crossing. Additionally, prepared illumination plans for the North Haven station lots.

**New Haven Rt. 34 Downtown Crossing.** Developed two preliminary signal plans to be used in the Base Technical Concept for the design-build contract.

**Waterbury Downtown Traffic Signal Upgrade.** Developed 10 new coordinated signal plans in downtown Waterbury. Calculated quantities and cost estimate. Assisted in traffic modeling and coordination improvements and calculated clearance intervals. Attended progress meetings at the Department of Transportation. Reviewed the Traffic Technical Memorandum.

**New Britain Signal Design.** Developed signal plan and mast arm detail sheet for an intersection in New Britain, CT. Attended utility coordination meeting and a site visit.

**Rehabilitation of the Approach Spans for the Arrigoni Bridge No. 00524**. Designed maintenance & protection of traffic plans and signing & pavement marking plans for the traffic set. Calculate the quantities and cost estimate for the traffic set and the incident management system set. Contributed to the research and writing for the protective fence study. Performed sight distance analysis for crosswalks and summarized results within a safety memo. Attended DOT meetings.

**U.S. Route 1 (Orange, CT) Operational Lanes**. Developed traffic signal plans for two intersections along U.S. Route 1. Analyzed the traffic operations at two intersections and summarized results in a traffic report.

I-95 New Haven Harbor Crossing Corridor Improvement Program. Evaluated the pre- and post-construction operational conditions of a 7-mile corridor along Interstate 95. Analyzed the post-construction conditions using Highway Capacity Software (HCS). The post-construction conditions were compared to pre-construction conditions from the previous traffic reports. Performed and compared the pre- and post-construction crash analyses to quantify the safety improvements. Compiled the results and comparisons into a traffic study report.

Route 7 - Route 15 Interchange, Norwalk/Wilton, CT. Performed accident analysis and prepared diagrams summarizing the crash experience along different segments within the study limits as part of preparation for the Environmental Assessment (EA) Documentation. Updated synchro models for existing, build year, and design year conditions. Optimized phasing and timing at one redesigned and five new signalized intersections. Oversaw the preparation of signal plans.

Centerline Rumble Strips – Local Road Screening and Outreach, Statewide, CT. Performed and reviewed safety analysis for 430 project corridor segments and identified target crashes that could be reduced from Centerline Rumble Strips (CLRS) implementation.

Reconstruction of I-95, Exits 7-9, Stamford, CT. Performed safety analysis for 50 intersections in the downtown Stamford area and 8 segments along I-95. Reviewed safety analysis report, diagrams, and maps. Deliverables to be utilized in the Planning and Environmental Linkages (PEL) study.

District 4 Traffic Control Signal Replacement on State Roads. Developed traffic signal plans for two intersections in District 4. Analyzed the traffic operations at two intersections and summarized results in an Intersection Design Statement. Performed utility coordination for traffic signal installation.

JCI Phase II MET Interlocking 30% Design. Designed maintenance & protection of traffic plans. Researched current traffic conditions and develop reference documents for MPT locations. Created initial civil sheets and sheet sets. Aided in the progression of the rail drainage design.

Rehabilitation of Williamsburg Bridge. Developed scope for collecting the necessary traffic count data. Perform accident analysis of the study area. Performed traffic capacity analysis through Synchro and HCS. Contributed to traffic study report. Coordinated with prime company and the traffic count sub. Evaluated traffic capacity for work zone conditions. Reviewed shop drawings for Design Services During Construction (DSDC).

LKB 111$^{th}$ Avenue (Queens, NY) Traffic Study. Performed accident analysis of the study area. Coordinated with the prime company and the traffic count sub. Uploaded the data to the Traffic Information Management System (TIMS) database.

Van Wyck Expressway Design Build. Developed temporary and permanent traffic signal plans and a Basis of Design Report for the 5-stage construction of Atlantic Ave./94th Ave. Bridge (BIN 1055699) over the Van Wyck Expressway to allow for widening.

Astoria Blvd Eastbound Bridge over 278I (BQE West Leg) BIN 2-23081-0 NYCDOT. Coordinated data collection. Developed Synchro traffic models for various conditions. Produced traffic capacity and accident analysis reports. Processed speed data. Provided non-technical support for the compilation of the Design Approval Document.

Washington Avenue Safety Improvements – Brooklyn NY Traffic Study. Developed traffic study model for various conditions. Contributed to traffic study report. Performed field observations. Reviewed crash analysis. Coordinated with traffic count subconsultant.

John F. Kennedy International Airport Federal Circle Improvements, Queens, NY. Progressed signal plans from 25% preliminary stage with the addition of timing plan, standard details, and removal plans. Developed Synchro model to determine the coordination and optimization of five signalized intersections. Coordinated with the Port Authority of New York and New Jersey (PANYNJ) on the electrical supply to the traffic signal cabinets.

John F. Kennedy International Airport Westbound Connector, Queens, NY. Designed a signal plan layout with the development of wiring plan, dimensioning plan, and removal plans.

COMMENTS OF THE TOWN OF EAST HAVEN ON THE TWEED NEW HAVEN AIRPORT NEPA DRAFT ENVIRONMENTAL ASSESSMENT RUNWAY 02-20 EXTENSION AND TERMINAL EXPANSION PROGRAM

Attachment E

Letter dated April 26, 2023 from the Honorable Joseph A. Carfora, Mayor, Town of East Haven, Connecticut

Town of
EAST HAVEN
CONNECTICUT

OFFICE OF THE MAYOR
Joseph A. Carfora
Mayor

April 26, 2023

VIA EMAIL: hvn-ea@mjinc.com

HVN-EA Public Comments
McFarland Johnson
49 Court Street, Suite 240
Binghamton, NY 13901

RE: Draft Environmental Assessment for Tweed New Haven Airport

Dear Sir or Madam,

As Mayor of East Haven, I, and my team of professionals, have been paying careful and detailed attention to the proposed runway extension and the relocation and expansion of the terminal building (and associated facilities and infrastructure) that are the subject of the draft Environmental Assessment or EA referenced above.

We have consistently said that this project is the most transformative project in our town's history. After a full review of the scope of the proposals and findings in the EA, we believe this statement is more accurate today than ever before.

We believe the EA is legally deficient, and that it lacks essential substance, so much so that the FAA should remedy the deficiencies by either requiring a new EA or beginning the much more rigorous Environmental Impact Statement (EIS) process to the benefit of all stakeholders.

250 Main Street • East Haven, CT 06512
www.townofeasthavenct.org • (203) 468-3212 • Fax (203) 468-3372 • mayor@townofeasthavenct.org

As currently proposed, this project will negatively impact the quality of the human environment for people in East Haven, in New Haven, in Branford, in Guilford and in other nearby communities. I am here to speak for the people of East Haven but all people in this area will suffer the effects of this project as proposed.

I would like to address **just a few** of the profoundly problematic aspects of the EA. Additional comments and expert reports will be provided shortly to the FAA on the Draft EA.

**The EA Contains a Fundamental Inconsistency that Infects the Environmental Analysis**

The EA contains a fundamental inconsistency which undermines every aspect of the document:

> The beginning of the document is filled with references to how totally inadequate the existing facilities at Tweed are to handle current air traffic -- much less any expansion.
>
> The second half of the document carelessly assumes that the existing facilities can not only handle existing air traffic, but could handle 3.5 times the number of passengers enplaning at the airport today -- or a whopping 1.2 million enplaning passengers which actually means almost 2.5 million enplaning and deplaning passengers per the forecasts contained in the EA.

These assertions in the EA cannot both be true: either the existing facilities are inadequate to handle projected traffic increases – and therefore will constrain the amount of future traffic (and, critically, environmental impacts) – or the existing facilities can handle the projected traffic increases, and the new facilities are not really needed.

This fundamental disconnect allows the EA to reach the startling – and implausible – conclusion that there will be greater environmental impacts from a no-build scenario than if the project were to proceed as proposed.

This analysis is clearly unreliable and needs to be corrected to address the relevant issues honestly and consistently.

**The Scope and Size of the Project is Fundamentally Incompatible with the Community**

As a threshold matter, it is important to note that the magnitude of change associated with the sheer size of the proposed new facilities and the forecast number of enplanements and vehicle traffic is vastly beyond what we were initially told to expect. We continue to be presented with important

information regarding the project at the last minute and without any meaningful opportunities for input, other than this forum, to date. Importantly the project as presented continues to change in material and important ways. For instance:

Original estimates of cost associated with construction of the project have ballooned from $60 million to the current $165 million.

Parking facilities were originally proposed to accommodate 1,700 vehicles at peak, but the EA now envisions an additional 4,000 vehicle spaces and a six-story parking garage which is elevated due to its location in a flood plain.

The size of the proposed terminal has increased from a minimum of 30,000-70,000 square feet to approximately 80,000 square feet. I also note that the Master Plan that was published a few short years ago explicitly contemplates an expansion of the existing terminal building, a possibility that is not contained in the EA.

The forecasted number of passengers expected to enplane at the airport was originally estimated in the Master Plan at 82,273 for the year 2025. This of course was far surpassed in the year 2022 when the actual number of enplaning air passengers was 351,506. The current forecasts are for 665,334 enplanements in 2026 and 1,222,551 in 2031. This means that almost 2.5 million enplaning and deplaning passengers will be coming through Tweed Airport in 2031 if this forecast holds true.

The proposed project would result in a very different airport than the one that currently exists or even the one contemplated just a few years ago. Its placement in a sensitive coastal area replete with our most precious natural resources and surrounded, at least on the East Haven side, by designated Environmental Justice communities is frankly astonishing.

Even more astonishing is the flip assertion in the EA that the project would result in a cumulative environmental benefit to the community including "reduced noise and air emissions compared to the no action alternative".

**The Proposed New Airport Access Route Suffers from Severe Flooding that Makes it Impossible to Meet the Project's Purpose and Need**

The EA rejects the existing terminal as not meeting the purpose and need of the project to provide safe and efficient facilities, in part because it suffers from flooding from time to time (per the EA the existing terminal has flooded 2 times in 3 years). However, as the Town has informed the FAA and the Authority, the proposed new Airport main access route through the Town

suffers severe flooding much more frequently, including, recently, two times in just two weeks. Not 2 times in 3 years.

Moreover, this flooding occurs at Hemingway Avenue at Coe Avenue and Short Beach Road -- a critical juncture through which virtually all traffic to and from the Airport would travel under the proposed plan. If this intersection is flooded, the route to and from the Airport is cut off.

In order to provide safe, reliable, and efficient ground access to the Airport, at a minimum, another access route must be provided. One alternative would be leaving the existing access road open to passengers.

Finally, while the EA claims to resolve the concerns of current Airport access traffic traveling through residential neighborhoods, this is not accurate. The new route simply moves the traffic from New Haven residential neighborhoods to East Haven residential neighborhoods. It is worth noting that the East Haven neighborhoods that are expected to take this burden are designated as Environmental Justice communities -- a designation that is intended to protect residents from exactly this kind of shifting of burden.

**The Effect of the Project on the Physical Environment is Woefully Understated**

I am going to very briefly highlight just a few of the impacts the project will have on the physical environment. Given the short period of time I have to speak I will leave it to our experts to more fully identify and address these issues.

The EA fails to address what the impact will be of placing the estimated 61,300 cubic yards of fill required for the construction of the project within a 100-year flood plain. This in an environment that is already subject to constant flooding that is expected to worsen as sea levels rise. I am told there is a realistic potential that the actual quantity of fill needed may be significantly higher, and that the issues associated with mitigating or otherwise addressing this amount of fill are terribly complex and challenging.

I'd also like to mention that even the stated levels of fill will result in a relentless convoy of at least 4,000 noisy, dusty dump trucks bringing this material to the Airport through the streets and neighborhoods of the Town. The impacts of this massive earth-moving enterprise are not mentioned in the EA.

In addition to the issues associated with fill, the EA estimates the direct loss of wetlands to be 9.3 acres and notes there will be an estimated increase in

impervious surfaces at the airport of approximately 941,922 square feet or 21.62 acres which will result in a large volume of polluted stormwater runoff that must be managed. As with the placement of fill, all of these actions will have a profoundly negative impact on the surrounding environment exacerbating already severe flooding issues and harming adjacent wetlands and other precious coastal resources.

**Impacts on Parks and Community Events**

We are also concerned with the very significant impacts on Town parks and the community activities held there that this project will have. This is especially true for the Town Green, located along Hemingway Avenue (at Main St. and River Street) – which would become the primary road for to the proposed new terminal – and the Town Beach.

The Town Green is the focal point of the East Haven Green Historic District which is listed on the National Register of Historic Places and is the heart of civic life in East Haven, where many events for families, youth, and seniors are held throughout the year, as well as annual all-Town events such as fireworks celebrations, our road race and the Fall Festival, now in its 30th year.

The EA gives absolutely no consideration to interference by heavy Airport traffic on Town and community functions at the Town Green or on the ability of the Town's residents to access the Town Green on foot or by vehicle. I'll leave it to other Town representatives to discuss in more detail how the increased traffic impacts will impact the Town Green.

Moreover, as with any beachfront community, the Town Beach is a very popular gathering place for recreation, especially in warm weather months. The impact of vastly increased overflights with heavier aircraft over the beach is not even discussed, much less analyzed, in the EA.

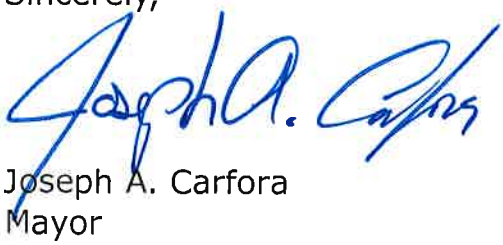
**In Conclusion**

I join the many good citizens who have urged the FAA to do the right thing and simply follow applicable federal laws and regulations and require the preparation of an EA that meets standards or immediately move to the preparation of an Environmental Impact Statement. An EIS will allow for fully informed decision-making, with meaningful consideration of the impacts of the proposed action based on adequate information and consideration of true alternatives. I applaud these citizens and thank them for their diligence and efforts.

The Town of East Haven will be providing additional detailed and comprehensive comments to the FAA shortly. We expect the FAA will be

diligent in its review and consideration of all materials submitted and realize the deficiencies of the EA recently published.

Sincerely,



Joseph A. Carfora
Mayor

COMMENTS OF THE TOWN OF EAST HAVEN ON THE TWEED NEW HAVEN AIRPORT NEPA DRAFT ENVIRONMENTAL ASSESSMENT RUNWAY 02-20 EXTENSION AND TERMINAL EXPANSION PROGRAM

Attachment F

Letter dated April 26, 2023 from Edward R. Lennon, Jr., Police Chief, Town of East Haven, Connecticut

# East Haven Police Department

471 North High Street • East Haven, Connecticut 06512
Tel (203) 468-3820
www.easthavenpolice.com

**Edward R. Lennon, Jr.**
*Chief of Police*

**Patrick Tracy**
*Deputy Chief of Police*

April 26, 2023

HVN-EA Public Comments
McFarland-Johnson, Inc.
49 Court Street, Suite 240
Binghamton, NY 13901

Via email: hvn-ea@mjinc.com

Re: Draft Environmental Assessment for Tweed New Haven Airport

Dear Sir or Madam,

The East Haven Police Department (EHPD) continues to carefully evaluate and assess the impact of the project described in the draft EA including the relocation and expansion of the terminal building and associated facilities and infrastructure, and the routing of all airport traffic through the Town of East Haven.

We have the following comments and concerns to share. Note that we are only sharing the comments and concerns we perceive as relevant to the EA. We have many other concerns.

## Impact on Patrol Operations and Local Roads

With the proposed terminal located off Proto Drive and all airport traffic routed through town streets to eventually reach I-95, as shown in the EA, there will be a tremendous increase in the volume of vehicular traffic on the East Haven roadways.

To be very clear, the roads designated in the EA for airport traffic are together the Town's "Main Street corridor." These roads include substantial residential, town service and community elements. The surrounding streets, which GPS systems will send drivers through when traffic is backed up, are almost exclusively residential. Proto Drive itself is home to the Town's largest business, which generates frequent large heavy truck traffic. Proto Drive will need substantial improvement to manage the proposed heavy volume of airport traffic and continue to provide service to its existing users.

Naturally, with this increase in traffic volume on local streets, an increase in motor vehicle collisions is expected which will require additional EHPD and East Haven Fire Department (EHFD) resources. Although we may not know the actual volume of increased traffic we will experience or the increased number of traffic collisions, we do know that it will be significant.

It is anticipated that the EHPD will be required to always staff at least one (1) additional patrol officer each shift to its current patrol complement to provide public safety services associated with airport traffic. To fulfill this obligation utilizing the patrol schedule in the Collective Bargaining Agreement of the East Haven Police Union, the Department will have to hire six (6) additional police officers.

We also are concerned with the potential impact on response times due to the increase in traffic volume and associated incidents and thus are concerned about our ability to respond to reported criminal activity and emergencies in the surrounding area adjacent to the airport. As already stated, the streets that are expected to carry the airport traffic are the main arteries through town. These streets are already over congested and subject to flooding and delays impacting residents, businesses, and school buses.

We are surprised that the EA does not mention the flooding generally experienced on many town roads and properties. The flooding issues are particularly pronounced at the intersection of Hemingway Avenue (Route 142) at Coe Avenue and Short Beach Road. The State DOT is often forced to limit traffic through this intersection and delays are frequently experienced. It would seem this would be a point of concern for those planning traffic routes to and from the airport.

Further, we have significant concerns about the increased traffic congestion over the bridge that connects North High Street to High Street (Route 100). This bridge (Webster Bridge) is the only route connecting the "north" and "south" end of town. During rush hour times, to include the beginning and end of school, the bridge and all surrounding streets experience extreme traffic congestion. By moving the terminal to the proposed location in East Haven, motorists heading to or from the airport via the I-95 52 entrance or exit ramp, must travel over the Webster Bridge, exacerbating the already serious traffic problem.

**Other Traffic Impacts**

The Town of East Haven offers a variety of events for the community to enjoy. Many of these events will be directly impacted and may no longer be feasible if the airport terminal is located in East Haven and access is solely through local streets. Many events occur on the Town Green, which is located on Hemingway Avenue – the primary road for egress and ingress to the airport terminal. As it stands now, when these events take place additional officers are hired on overtime to handle the implications of increased traffic. Because parking at the Town Green is limited, those attending events typically park in the parking lots of neighboring businesses. To get to the Town Green after parking, pedestrians must cross Hemingway Avenue on foot. Due to this being a heavily traveled main roadway, officer(s) must stop traffic to ensure it is safe for pedestrians to cross the road. During the warmer months of the year, there is at least one weekly event that takes place on the Town Green requiring pedestrians to cross the road. With the increased traffic volume, the chances of a pedestrian being struck by a vehicle will exponentially increase.

The Annual East Haven Fall Festival takes place on the Town Green over the course of three (3) days. Due to the volume of people attending the event, Hemingway Avenue between Main Street and Edward Street is closed for much of the day. Diverting airport traffic from Hemingway Avenue onto neighborhood streets during this event will cause numerous traffic congestion points and will create hazardous conditions for motorists and pedestrians alike.

In addition to the normal festivities on the Town Green, the Fall Festival also includes an annual road race. During this road race, all major roadways, and most secondary residential roadways, are closed to thru traffic for approximately two (2) hours during peak times. This is a well-known event by Town residents who avoid travel during this time. Traffic must be rerouted into Branford and into New Haven during the race. The additional volume of traffic, particularly those coming from another town and unfamiliar with the area and trying to reach the airport, will be a very complex, if not an impossible traffic challenge to overcome.

The Town of East Haven hosts an annual fireworks celebration in the month of June. This is one of the most attended Town events of the year. In previous years, the volume of people attending the fireworks has been estimated to exceed 7,000 people, all within a congested area. Following this display, the Town experiences gridlocked traffic on all main and residential roadways south of Dodge Avenue for approximately two (2) hours. This includes the intersection of Coe Avenue by Proto Drive, a critical intersection for reaching the proposed terminal.

There are several other events/activities not detailed herein such as the Italian American Heritage Parade, beach traffic during the summer months, and the Town Farmers' Market that will also affect the flow of traffic to the airport via the proposed new route.

The EHPD joins with other concerned stakeholders to request that the FAA require a new EA addressing these significant concerns or begin the much more rigorous Environmental Impact Statement process to the benefit of all stakeholders.

Sincerely,

Edward R. Lennon Jr.

Digitally signed by Chief Edward R. Lennon, Jr.
Date: 2023.04.26 12:21:22 -04'00'

Edward R. Lennon, Jr.
Chief of Police

COMMENTS OF THE TOWN OF EAST HAVEN ON THE TWEED NEW HAVEN AIRPORT NEPA DRAFT ENVIRONMENTAL ASSESSMENT RUNWAY 02-20 EXTENSION AND TERMINAL EXPANSION PROGRAM

Attachment G

Letter dated April 26, 2023 from Christopher Rosa, Assistant Fire Chief, Town of East Haven, Connecticut

TOWN OF
EAST HAVEN
FIRE DEPARTMENT

April 26, 2023

VIA EMAIL: hvn-ea@mjinc.com

HVN-EA Public Comments
McFarland Johnson
49 Court Street, Suite 240
Binghamton, NY 13901

RE: Draft Environmental Assessment for Tweed New Haven Airport

Dear Sir or Madam,

The East Haven Fire Department has been closely following the proposed runway extension and relocation and expansion of the terminal building (and associated facilities and infrastructure) that are the subject of the EA referenced above.

The Fire Department has many concerns about the impact of this project on public safety efforts in Town if it is constructed as proposed. I would like to call your attention to the following:

Firstly, and most importantly, the foreseeable critical delays in emergency response times due to the greatly increased volume of traffic associated with the construction and then operation of the airport facilities. This traffic will be traveling on some of the most heavily congested roads in town. The ability of emergency services to respond to the airport will almost certainly be impeded by the additional heavy traffic on these roads as exacerbated by frequent flooding and periodic loss of travel lanes.

In fact, the introduction of such a heavy volume of additional traffic, will inevitably impact and possibly impede the routes of travel of emergency vehicles for daily activity. This may cause critical delays in emergency response to our day-to-day operations town wide -- not just those on airport property. It is likely the entire town will see an increase in response times as a result of the airport traffic. Increased response times may result in decreased survivability, larger fires and delayed transport and treatment in critical medical emergencies.

The sheer number of people traveling through town associated with the airport is expected to present unique challenges to the East Haven Fire Department. This will place a significant burden on the Department.

PFAS or "forever chemicals" which are found in firefighting foam have been used for years by the Airport Authority during training exercises and incidents and used by crash fire rescue crew and the New Haven Fire Department. These chemicals are likely still found in the soil surrounding the runways. The disruption of this soil could cause the PFAS to leach out and contaminate groundwater or runoff into tidal wetlands. The extent of potential PFAS contamination and its impact on the environment need to be very carefully considered.

Finally, the discussion in the EA does not address, does not even mention, the regular flooding experienced at the intersection of Hemingway Avenue (Route 142) at Coe Avenue and Short Beach Road. This intersection experiences significant flooding which at times requires the placement of warning signs and closing off of lanes. This flooding will at times impede or even prevent access to the airport using the route designated in the EA. The "work around" that GPS systems will provide and the panicked driving of travelers anxious to not miss their flights is a terrifying prospect. The state DOT is well aware of these problems as this is a state road and it has not been able to offer a solution due to the physical parameters of the road.

This flooding is of course particularly significant during storm events but is experienced regularly -- for instance when tidal action is especially pronounced due to the confluence of a high tide with a full moon and strong winds. I am concerned that the loss of wetlands, the increase in impervious surfaces and the filling and raise in elevation of the new airport facilities will make this flooding worse but will leave that discussion to the experts.

The East Haven Fire Department joins with other concerned stake holders to request that the FAA require a new EA addressing these concerns or begin the much more rigorous Environmental Impact Statement process to the benefit of all stakeholders.

Respectfully,

Christopher Rosa
Assistant Fire Chief

COMMENTS OF THE TOWN OF EAST HAVEN ON THE TWEED NEW HAVEN AIRPORT NEPA DRAFT ENVIRONMENTAL ASSESSMENT RUNWAY 02-20 EXTENSION AND TERMINAL EXPANSION PROGRAM

Attachment H

Letter dated April 26, 2023 from Michael J. Luzzi, Esquire, Town Attorney-Town of East Haven, Connecticut

Town of
EAST HAVEN
CONNECTICUT

Michael J. Luzzi – Town Attorney
1172 Townsend Avenue
New Haven CT 06512
(203) 404-5155

April 26, 2023

VIA EMAIL: hvn-ea@mjinc.com

HVN-EA Public Comments
McFarland Johnson
49 Court Street, Suite 240
Binghamton, NY 13901

RE: Draft Environmental Assessment for Tweed New Haven Airport

Dear Sir or Madam,

As Town Attorney, I have carefully reviewed the draft Environmental Assessment (EA) and discussed it with the Town of East Haven's team of professionals. We believe the EA is legally and substantively deficient and the FAA should remedy these deficiencies by either requiring a new EA or beginning the much more rigorous and transparent EIS process to the benefit of all stakeholders.

As has already been made clear, the project described in the EA -- the proposed runway extension, the relocation and expansion of the terminal building including associated facilities and infrastructure, and the routing of all airport traffic through East Haven -- will have a significant negative impact on the quality of the human environment.

I would like to address just a few of the problematic aspects of the EA.

**Noise, Air and Water Quality, Traffic, and Environmental Justice Analysis**

The analysis in the EA of noise, air and water quality, traffic, and environmental justice impacts are all based on the same fundamental flaw in the EA's alternatives analysis -- as already discussed by Mayor Carfora – the assumption that the same exact amount of passenger demand will be accommodated whether the facilities supposedly needed to accommodate that demand are built or the Airport carries on with the existing, severely inadequate facilities.

This is an incredible assumption, given that the Master Plan Update recently completed by the Authority clearly stated that "Existing facilities are constraining commercial service at HVN." The assumption that unconstrained (and vastly increased) demand could nonetheless be handled by the existing facilities, and the "no action" level of enplanements is, thus, identical to the number of enplanements that could be handled after completion of the proposed $165 million airport expansion project, makes a mockery of the intended environmental analysis.

In a more realistic assessment unconstrained demand could only be accommodated by the new facilities – otherwise they are not truly needed -- and unconstrained demand would not be fully met by the existing, inadequate facilities. Therefore, as one would expect logically, aircraft operations and related ground vehicle traffic – and their environmental impacts – would be **greater** under the build than the no-build scenario.

However, the EA, incredibly, reaches the exact opposite conclusion, claiming that aircraft operations – and thus, environmental impacts – **are greater under the no-build scenario.**

The consequences of the EA's fundamental disconnect between its dire assessment of the current Airport facilities' inadequacy to handle projected traffic and their remarkable ability to nonetheless accommodate massive increases in passenger activity are pervasive and infect virtually all of the subsequent environmental analysis.

It is also worth noting that despite stating up front that other airline, such as Allegiant, want to serve the Airport but cannot because the current runway is too short and thus it is likely that **other airlines** would add flights to additional cities that will result in increased passenger levels at HVN beyond the No Action Alternative, the EA only considers the potential enplanements generated by future Avello flights. Thus, the EA likely undercounts the potential environmental impacts of the proposed project.

**Access Roads**

The EA simply ignores the very real and current issues with the East Haven roads designated in the EA for airport access. You have already heard from the Mayor, and the public safety professionals who deal with these roads every day, and we will provide more specific evidence and information in our written comments.

The EA states that "Providing a more direct access route that avoids residential neighborhoods and is able to support the traffic to the Airport, is a key goal of the project. New access that favors compatible land use and safe and efficient routes between the terminal and I-95 is

needed." It goes on to find that the no-build alternative "does not provide suitable and efficient roadway access to the terminal area."

The EA then goes on to find that the proposed alternative, access through residential neighborhoods in East Haven, does provide suitable and efficient access to the terminal. This notwithstanding the fact that the Town has informed the Authority and the FAA that the access route (also the Town's "Main Street" and evacuation route) experiences frequent flooding – and not just related to storm events.

The proposed project would route Airport traffic through the Town, specifically through the critical intersection at Hemingway Ave (Route 142) at Coe Ave and Short Beach Road (Route 142), which has flooded twice in a recent two-week period – which is far more frequent than the two times in the past 3 years that the existing terminal has flooded.

If this intersection is impassable, access to and from the Airport is cut off. **Without ground vehicle access, Airport operations would be severely disrupted, passengers would be greatly inconvenienced, and emergency response to the Airport could be delayed or impeded to disastrous effect.**

All Airport traffic coming from or going to Route One and I-95, as well as the Town, the City of New Haven, and most surrounding areas will have to approach or leave the Airport through that intersection. This is most of the Airport traffic.

Thus, the answer to the EA's Evaluation Criteria question, "Does the alternative provide … suitable, efficient roadway access to the terminal area?" clearly must be **"No."**

Yet, remarkably the EA does not even mention the flooding and simply declares that this access route **meets** the purpose and need for the project.

In the real world, however, this flooding is severe enough to block access to and from the Airport, and therefore, **an alternate entrance to the Airport needs to be available in order to ensure safe and reliable access on a continuous basis** and should have been included as an alternative for FAA consideration per regulatory requirements.

**Residential Impacts**

The EA also states that the proposed project will "provide better landside access through non-residential areas avoiding the New Haven and East Haven neighborhoods" and "[m]inimize use of access corridors through residential areas", noting that, "Providing a more direct access route that avoids residential neighborhoods and is able to support the traffic to the Airport, is a key goal of the project."

However, the proposed project does not avoid residential neighborhoods in East Haven. And, in fact, elsewhere, the EA acknowledges that "The area surrounding HVN is generally residential in both communities, including "single family, two family, and multi-family residential areas."

I am going to reiterate here that the East Haven neighborhoods that are expected to shoulder this burden are designated Environmental Justice communities -- a designation that is intended to protect residents from exactly this kind of shifting of burden. These residents will also be faced with a new visual landscape: A two story terminal to be built on piles and a six-story parking garage which is planned to have a peak 76 feet above existing grade. Both of these will be built on a raised grade due to the fact that this is a flood plain. The EA acknowledges that these structures will be visible year-round regardless of the "vegetated buffer" that may provide a visual screen when fully "leafed" out.

Moving the terminal/access to the East side of the Airport via the Preferred Alternative does **not** adequately address the concern of avoiding impacts on residences. It simply shifts such impacts from New Haven to East Haven.

**Impacts on Parks**

We are also concerned with impacts on Town parks and civic activities held there, especially the Town Green, located along Hemingway Avenue (at Main St. and River Street) – which would become the primary road for egress and ingress to access the proposed new terminal.

The EA gives no consideration at all to potential interference by the rerouted Airport traffic on Town and community functions at the Town Green that are an important part of the Town's character and appeal to its residents.

The Mayor and the Police Chief have described the impacts that the rerouted airport traffic will likely have in constraining, if not curtailing, the ability of the Town and its residents to use the Town Green for various community events.

These impacts raise significant concerns over the "constructive use" of the Town Green and other parks, which can result when "a project results in a restriction in access which substantially diminishes the utility of the property." This is supposed to be studied and evaluated as part of the DOT Section 4(f) analysis, but there is no evidence in the EA that it was.

Instead, the EA merely states that "any proximity impacts resulting from the increased traffic flow would not substantially impair or interfere with activities, features or attributes that qualify resources for Section 4(f) or Section 6(f) protection," without any reference to the Town Green or the other parks along the proposed Airport traffic route.

In fact, there are 10-20 public parks of local significance that we believe should be analyzed for potential 4(f) impacts, whether by overflights or ground vehicle traffic, such as the Town Beach and Memorial Field. Further information and analysis will be provided to the FAA in our written comments.

**In Conclusion**

I applaud all of the people who are working to keep their community safe. I join with my colleagues and neighbors to urge the FAA to do the right thing and simply follow applicable federal laws and regulations and require the preparation of an EA that meets standards or immediately move to requiring the preparation of an Environmental Impact Statement that will allow for fully informed decision-making, and consideration of all of the impacts of the proposed action based on adequate information and consideration of true alternatives.

Sincerely,

Michael J. Luzzi, Esquire

COMMENTS OF THE TOWN OF EAST HAVEN ON THE TWEED NEW HAVEN AIRPORT NEPA DRAFT ENVIRONMENTAL ASSESSMENT RUNWAY 02-20 EXTENSION AND TERMINAL EXPANSION PROGRAM

Attachment I

Letter dated October 7, 2022 from the Honorable Joseph A. Carfora, Mayor, Town of East Haven, Connecticut

Town of
EAST HAVEN
CONNECTICUT

OFFICE OF THE MAYOR
Joseph A. Carfora
Mayor

October 7, 2022

**Via E-Mail (colleen.dalessandro@faa.gov)**

Ms. Colleen D'Alessandro
Regional Administrator
New England Region
Federal Aviation Administration
1200 District Avenue
Burlington, MA 01803-5299

**Re: Proposed Expansion of Tweed-New Haven Airport**

Dear Regional Administrator D'Alessandro:

This letter is sent on behalf of the Town of East Haven, Connecticut ("Town"), which has significant concerns regarding the planned expansion and relocation of operations ("Project") at Tweed-New Haven Airport ("Tweed") as described in the Tweed-New Haven Airport Master Plan Update Final Report dated October 2021 ("Master Plan"). Our concerns center on the significant and unavoidable negative impacts the Project will have on public health and the environment in contravention of local, state and federal policy and legal requirements.

For the reasons set forth below, the Town requests that the Federal Aviation Administration ("FAA") prepare an Environmental Impact Statement ("EIS"), as required by the National Environmental Policy Act ("NEPA") (42 USC § 4321 et seq.) and the Council on Environmental Quality regulations implementing NEPA (40 CFR §§ 1500-1508), regarding the Project. The Project would result in significant impacts to the human environment, includes a major runway extension,[1] is highly controversial on environmental grounds, and involves substantive special purpose laws, such as Department of Transportation Act Section 4(f), wetlands, sensitive coastal areas, and air quality laws. These factors warrant proceeding to an EIS.

The FAA's own guidance documents contemplate such an action (the agency "must prepare an EIS when one or more environmental impacts of a proposed action would be significant and mitigation measures would not reduce the impact(s) below significant levels. Direct, indirect, and

[1] *See* Environmental Impacts: Policies and Procedures FAA Order 1050.1F (7-16-15) ("Order 1050.1F"), Paragraph 3-1.3(b)(1)(c), Actions Normally Requiring Environmental Impact Statement.

cumulative impacts must be considered when determining significance . . .").[2] Moving to prepare an EIS is appropriate even if preparation of an EA has already commenced. ("If the FAA determines that the proposed action would significantly affect the human environment as the analysis proceeds, the FAA can make a decision to prepare an EIS without first completing the EA.")[3]

Tweed is located in two municipalities: the Town and the City of New Haven ("City"). This letter will primarily discuss impacts and concerns that the Town and its residents have regarding the proposed expansion. It is worth noting however that the proposed expansion will have a negative effect on the physical environment and the health and well-being of those living and working in the City of New Haven and the surrounding region as well.

Having said that, the vast majority of the Project consists of a planned expansion and relocation of facilities to the Town. This includes an extended runway and ancillary access to the runway; a new terminal facility with up to 6 gates; new parking facilities with up to 1,800 parking spaces; and a new primary access road. Traffic will be routed through and on Town roads in residential and town-center areas that are already inadequate for current local purposes and are unable to be expanded due to physical constraints.

The impacts of the Project on families, businesses and other members of the community will be immense and negative. It is unlikely that any noticeable economic benefit (the main driver for the Project) will be experienced by those in the Town, which is a "distressed municipality" under the laws of the State of Connecticut. Town residents will instead experience increased air, noise and light pollution, unsafe and at times unpassable roads, and many other negative impacts associated with potentially up to 100 additional daily passenger flights and an unknown number of new cargo flights to and from Tweed enabled by the Project.

The Town itself is not equipped to undertake the public safety requirements that would be thrust upon it by this relocation and expansion. The current terminal is located in New Haven, a large city with significant public safety resources. The Town is a small New England town. Its public safety resources are appropriately sized for the community and are an order of magnitude smaller than those in the City. Relocation of the terminal to the Town would shift public safety responsibilities for Tweed at great expense to the Town, which will also experience a predictable increase in required public safety measures owed to residents and visitors due to increases in traffic and other impacts associated with the Project. Neither the FAA nor the City has the authority to require the Town to undertake such additional measures or incur the expenses incidental thereto, so any planning or analysis prepared or overseen by the FAA should not assume that the Town will do so.

Unfortunately, the Town representatives on the Board of Directors of Tweed-New Haven Airport Authority (the "Authority"), Town officials and the Town's counsel were afforded almost no time

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[2] Order 1050.1F, Paragraph 7-1 Preparation of Environmental Impact Statements.
[3] Order 1050.1F, Paragraph 6-2.2(a). Environmental Assessment Process.

to review the Lease and Development Agreement with the proposed private developer and operator which are foundational to the Project. That agreement was approved by the Authority Board with no discussion of impacts on the Town of the relocation and expansion of the runway, the terminal, the parking facilities, and the access road. As you can see from the attached letter recently sent to the Authority, the Town has significant questions regarding the Project, the Master Plan and the Lease and Development Agreement. No response has been received to date to this inquiry.

***The National Environmental Policy Act***

NEPA requires a federal agency to prepare an EIS when "major federal actions significantly affecting the quality of the environment" are proposed. 42 USC § 4332(C). NEPA was enacted by Congress in 1969 with the goal of protecting human health and the environment and promoting environmental quality. A federal agency such as the FAA must prepare an EIS if there is a possibility that a project may have a significant environmental impact. Direct, indirect and cumulative impacts must be considered when determining significance.

An Environmental Assessment ("EA"), such as the Authority has stated will be prepared for the Project, is a preliminary document that can be the basis for a Finding of No Significant Impact ("FONSI") or a finding that an EIS, which fully considers the project pursuant to federal standards, must be conducted. FAA has noted that "the determination of a significant impact, as used in NEPA, requires consideration of both context and intensity (see 40 CFR § 1508.27)."[4] The agency further stated, "For a site-specific action, significance would usually depend upon local impacts. Both short and long-term impacts are relevant."[5] It is such local impacts that are of great concern to the Town. Given the scope of the Project, the universe of direct, indirect and cumulative impacts will be intense.

FAA has observed that "According to the CEQ Regulations, intensity refers to the severity of the impacts and includes, but is not limited to, consideration of the following:"[6]

• "Unique characteristics of the geographic area (e.g., proximity to historic or cultural resources, parks, . . . wetlands, ecologically critical areas)" The Project will impact the very sensitive and important environmental receptors which surround the Airport, particularly the area of the proposed expansion, given the proximity to Long Island Sound and tidal wetlands. Moreover, given that the Project is proposed for a sensitive coastline area that is located at or below sea level, as is much of the surrounding areas, Project impacts must be studied carefully in light of concerns relating to climate change and resiliency. In addition, the access road portion of the project is likely to constructively use East Haven's Town Green, a park that is an integral part of civic life in the community.

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[4] Order 1050.1F, Paragraph 4-3.2, Context and Intensity.
[5] *Id.*
[6] *Id.*

• "Adverse impacts on endangered or threatened species or critical habitat;"[7] The Project will impact salt marsh habitat which is considered a state critical habitat because of the species that depend on it for critical life cycle stages. Several threatened or endangered species were identified by the Connecticut Department of Energy and Environmental protection ("DEEP") as reported to occur on the Airport with either known or potential dependency on habitat located therein.

• "Whether an action threatens a violation of Federal, state, or local law or requirements imposed for the protection of the environment."[8] The Project is contrary to stated local, state, and federal goals to protect and enhance conditions related to human health and the environment and not contribute to further degradation of these conditions. For instance, the State of Connecticut strictly regulates development and other disturbances of sensitive coastal areas.

• "The degree to which the effects on the quality of the human environment are likely to be highly controversial." The Project essentially seeks to shift much of the burden associated with Tweed from the City to the Town. As a result, the Project has generated intense opposition within the community, which is a densely populated State-designated distressed municipality that is already suffering the impacts of living next to Tweed which has in recent years unexpectedly and significantly expanded the quantity and frequency of flights. Moreover, there is likely to be significant disagreement about the nature and extent of Project impacts, including the level of ground vehicle and aircraft traffic that would be enabled and induced by the Project.

The Town has many additional concerns, some of which are set forth below, including the proposed shared use of the access roads associated with the neighboring small industrial park, which includes the Town's largest taxpayers and the other Town roadways needed to access Interstate 95.

**Based on Established FAA Standards, an EIS is Warranted for the Project**

In determining whether an EIS is needed, "The FAA uses thresholds that serve as specific indicators of significant impact for some environmental impact categories. FAA proposed actions that would result in impacts at or above these thresholds require the preparation of an EIS, unless impacts can be reduced below threshold levels."[9]

For some categories, FAA has not established quantitative significance thresholds, but "the FAA has identified factors that should be considered in evaluating the context and intensity of potential environmental impacts. If these factors exist, there is not necessarily a significant impact. Some impact categories may have both a significance threshold and significance factors to consider. In these instances, a conclusion of significance can be determined based on the factors to consider

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[7] *Id.*
[8] *Id.*
[9] Order 1050.1F, Paragraph 4-3.3 Significance Thresholds

even if the impacts do not meet the significance threshold criteria."[10] Of course, the FAA may also consider other factors in making its determination of significance.

Below are some of the key categories and significance thresholds or factors that particularly concern the Town, and which we believe demonstrate that an EIS is warranted for the Project:

**Coastal Resources** (No established significance threshold). Key factors: "Be inconsistent with the relevant state coastal zone management plan(s)" and/or "Cause adverse impacts to the coastal environment that cannot be satisfactorily mitigated."[11] The Project is in the heart of a coastal zone, ¾ mile north of Long Island Sound, with Morris Cove approximately ¼ mile to the west. The Project is inconsistent with Connecticut coastal zone management plans. The Airport is subject to the Connecticut Coastal Management Act and the State Plan of Conservation and Development. As one example, Section 22a-92(b)(2)(E) of the Connecticut Coastal Management Act ("CCMA") requires that activities in coastal areas be undertaken in a manner that prevents the despoliation and destruction of tidal wetlands in order to maintain their vital natural functions. The Project fails to meet this standard.

Because tidal wetlands are sensitive and can suffer adverse impacts from adjacent land development and stormwater runoff, they are strictly protected. The Master Plan discusses and notes that there are numerous applicable coastal resource policies that need to be complied with, including those associated with tidal wetlands, freshwater wetlands, coastal flood hazard areas and shorelands. An independent, careful and thoughtful evaluation of how any proposed Airport expansion can be accomplished while complying with policies and regulations relating to coastal resources appears to be beyond the scope of an EA, based on FAA's established threshold significance criteria. In addition, there are local land use regulations that regulate activities proximate to these resources.

**Department of Transportation Act, Section 4(f)** Significance Threshold: "The action "constitutes a 'constructive use' based on an FAA determination that the aviation project would substantially impair the Section 4(f) resource. Resources that are protected by Section 4(f) are publicly owned land from a public park . . . of . . . local significance; and publicly or privately owned land from an historic site of . . . local significance. Substantial impairment occurs when the activities, features, or attributes of the resource that contribute to its significance or enjoyment are substantially diminished."[12]

The Town Green is the focal point of the East Haven Green Historic District which is listed on the National Register of Historic Places and is the heart of civic life in East Haven. Town and community functions that are regularly held there (e.g., weekly summer concerts, senior citizen activities/annual events, the Town's annual road race, regularly scheduled youth recreation programs such as movies nights, family game nights, annual holiday events, and the annual (30

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[10] *Id.*

[11] Order 1050.1F, Exhibit 4-1. Significance Determination for FAA Actions, p. 4-5.

[12] Order 1050.1F, Exhibit 4-1. Significance Determination for FAA Actions, p. 4-6

years) East Haven Fall Festival) are an important part of the Town's character and appeal to its residents. The Town Green is located along Hemingway Avenue, which will become the primary road for egress and ingress to access the new terminal. Pedestrian traffic and street crossings during events are high in volume and frequency. A large increase in airport traffic on the same routes due to implementation of the Project – especially with visitors unfamiliar with local roads and events -- will directly impact, if not curtail, the ability of the Town and its residents to use the Town Green for various community events.

Several parks and playgrounds are in the vicinity of the Airport including Memorial Field, East Shore Park and Lighthouse Point Park.

The Master Plan itself notes that several properties in the New Haven neighborhoods surrounding the Airport are listed on the National Register of Historic Places including two houses, Fort Nathan Hale, the carousel and lighthouse at Lighthouse Point Park and the Morris Cove Historic District. It should be noted that while the Master Plan does highlight the New Haven locations that are listed on the National Register of Historic Places, it does not provide the same relevant information regarding the East Haven Green Historic District which is also listed thereon. Truthfully, not only is the East Haven Green Historic District located in close proximity to the Airport, it is also adjacent to Hemingway Avenue, the main ingress and egress to the Airport, and it will be directly and unavoidably affected by the Project.

**Wetlands.** Significance Threshold: "The action would: 1. Adversely affect a wetland's function to protect the quality or quantity of municipal water supplies, including surface waters and sole source and other aquifers; 2. Substantially alter the hydrology needed to sustain the affected wetland system's values and functions or those of a wetland to which it is connected; 3. Substantially reduce the affected wetland's ability to retain floodwaters or storm runoff, thereby threatening public health, safety or welfare (the term welfare includes cultural, recreational, and scientific resources or property important to the public); 4. Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands; 5. Promote development of secondary activities or services that would cause the circumstances listed above to occur; or 6. Be inconsistent with applicable state wetland strategies."[13]

All six of these significance threshold factors are implicated by the Project. There are a large number of wetlands including marine, estuarine, riverine, lacustrine and palustrine wetlands present on and immediately adjacent to the Project area, and activities in or proximate to these wetlands are subject to regulation by federal, state and local authorities. The Master Plan states there are 24 wetlands systems on the Airport property. Wetlands off the property will be affected by the Project as well. Wetland resources are inextricably linked to threatened and endangered species, resiliency, coastal resources and stormwater discharge. The Project will clearly and unavoidably have a negative impact on wetlands and the entire ecosystem of which they are a part of due to direct loss of wetlands to development, destruction and degradation during construction

[13] Order 1050.1F, Exhibit 4-1, Significance Determination for FAA Actions, p. 4-11

and hydrologic changes that will impact other wetlands and water systems. Wetlands are critical to stormwater management and their loss and degradation, will exacerbate already critical issues.

***The Project***

Tweed has a dedicated URL for the Project headlined "Tweed New Haven Airport Terminal & Runway Expansion Program": https://www.tweedmasterplan.com. The Project is described as "multiple projects to continue advancing the Airport Master Plan, including the development of a new terminal area and a runway extension."

Public input is key to a successful environmental review under NEPA, and to date, the information provided to the public, and the opportunity for meaningful comment, have been woefully inadequate. A link to a presentation made at a public information meeting to "kick off the environmental assessment" on November 18, 2021, includes four slides showing graphic representations of four proposed actions. Three of the slides depict runways and one depicts a terminal area development. The remainder of the slide deck is process oriented and general in nature. There is no narrative description of the Project, and the slides are presented without any context or even cardinal orientation. The Authority has provided no meaningful opportunity for the community to obtain updated information or feedback.

The Master Plan itself describes the Project as follows:

> ***Table 1-3*** *presents the proposed phasing of projects over the 20-year planning period. Projects were phased to prioritize addressing immediate needs in Phase I (1-5 years). These projects include Runway 2 and 20 extensions and EMAS, on-going land/easement acquisition/obstruction removal, taxiway reconfiguration Phase I, east side terminal building, east side terminal apron, noise mitigation, a Part 150 noise exposure map update, and a fuel farm expansion. Phase II (6-10 years), or medium-term, projects include ARFF building expansion, on-going land/easement acquisition/obstruction removal, maintenance/SRE building expansion, and taxiway reconfiguration Phase II. Phase III (11-20 years) includes projects that address long-term aviation demand, including on-going land/easement acquisition/obstruction removal and taxiway reconfiguration Phase III.*

Tweed also released a legal notice on June 8, 2022, wherein it notified "all interested parties" of its intention to use revenues for an "Environmental Assessment — 5 Year Development Plan" The description of the Project as published follows:

> *Per 49 USC § 47106(c), any airport project funded with AIP funds requires an environmental finding prior to initial grant programming. Consequently, the TNHAA is conducting an environmental assessment of projects anticipated to be programmed over the next three to five years to ensure the eligibility of the projects for AIP funding.*

> *The projects to be evaluated in the EA include the lengthening of Runway 02-20, including associated airside improvements to taxiways, runway and taxiway edge/centerline lighting, taxiway guidance signage, and navigational aids; and construction of a new Eastside passenger terminal, including aircraft parking apron, connector taxilane, automobile parking, access roadway and circulation road. The EA will include preliminary design sufficient to evaluate the environmental, social, and economic consequences of the proposed improvements. The preliminary design effort will generally be to a level of detail to establish approximate limits of disturbance for construction of the improvements, including required drainage, and stormwater management measures. The EA will also include an extensive public outreach program throughout the duration of the project. Coordination with state and federal agencies is anticipated due to the airport's location in an environmentally sensitive area (wetlands and wildlife habitat). Key issues to be addressed include aircraft noise, wetlands impacts, air quality, stormwater runoff, and resiliency.*

Contrary to the assertion made in the Public Notice of "extensive public outreach," there has been a noticeable lack of recent public outreach on the Project. FAA guidance emphasizes the need for, and benefits of, significant public outreach in the environmental processing of airport development projects, and we certainly expect such outreach to improve as the project planning moves into the FAA-supervised environmental processing phase. The above notice which we assume was published in the New Haven Register on the legal notices page contains the most complete description of the Project for NEPA purposes provided by the Authority. We understand that the Authority has commissioned numerous environmental, noise, traffic, and other relevant studies which have not been provided to the Town. A formal Freedom of Information Act Request was made to the Authority on September 16, 2022, requesting all such information. None have been provided to date.

Of even more concern is the statement in the Public Notice that the EA contemplated will be truncated and not include the full Project as described in the Master Plan. This is on its face unacceptable under NEPA and FAA standards and best practices for implementing NEPA. The scope of the Project must be thoughtfully and fully considered. All necessary and likely components of the Project must be included in the description of the proposed action and thus considered as part of the NEPA analysis. If project components are not included in a project description, then affected community members, regulators and others are deprived of an honest, cumulative and comprehensive evaluation of the proposed action, thus defeating Congressional purpose.

The Master Plan includes a detailed list and description of planned action items in four phases and a privately-funded list:

Phase I Projects are planned for 2022-2026 and include 16 discrete line items. Not all of these items are included on the list of proposed actions included in the Public Notice published by the Authority setting forth the scope of the project to be evaluated in the EA.

Phase II Projects are planned for 2027-2031 and include 9 discrete line items. None of these were included in the Public Notice.

Phase III Projects are planned for 2032 – 2040 and include 3 discrete line items. None of these were included in the Public Notice.

Phase IV Projects are beyond the 20-year planning period and include 3 discrete line items. None of these were included in the Public Notice.

Finally, there is an "As Demand Warrants Projects" section which are privately funded. Because these projects must be depicted on the FAA-approved Airport Layout Plan, they are subject to NEPA. None of these were included in the Public Notice.

We are concerned that the Authority is not utilizing an accurate and complete description of the planned expansion in its public facing statements and dealings with the public and the regulatory community. If the Authority does not include all known elements required for the Project in its NEPA analysis, the analysis will be fundamentally flawed. Based on CEQ requirements, FAA guidance provides that the agency must consider connected actions, cumulative actions, and similar actions when conducting its environmental analysis.[14] A complete description of the proposed action subject to NEPA is critical – particularly when considering whether an EIS rather than an EA is required by Federal law.

For instance, the Master Plan notes that a taxiway reconfiguration is required which is consistent with historic FAA criticism of Tweed for its failure to have a full-length parallel taxiway. The Authority has publicly stated that the initial plans for the Project will not include the taxiway reconfiguration and extension. Phase II, Phase III, and Phase IV of the Master Plan include taxiway reconfiguration. This item however is not included in the Public Notice of the Authority's planned EA. Similarly, lighting improvements required for runway safety, namely an upgrade from MALSF to MALSR, are not contemplated until Phase IV and thus are not included in the Public Notice. Any projects that are contemplated to address immediate safety needs presumably should be considered as part of the Project now.

The FAA required an EIS be prepared for a prior planned activity at Tweed, the construction of runway safety areas and reconstruction, realignment and southerly extension of a taxiway on site. It has required the preparation of an EIS for similar activities proposed at Igor I. Sikorsky Memorial Airport in Stratford Connecticut (another small shoreline airport). Given that the Project includes a runway extension, as well as construction in sensitive coastal areas and wetlands, and significant vehicular traffic impacts (including the constructive use of an important Town park) in a distressed municipality, we urge the FAA to be consistent and require the same for this Project also.

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[14] Order 1050.1F, Paragraph 2-3.2(b) Scope of Proposed Action

An important point regarding the Project for NEPA purposes is that although the Project on its face is for the **physical expansion** and reorientation of the Airport in terms of its runway location, terminal, parking, and access roads; this physical expansion is designed to accommodate an expansion in operations that will mean more airplanes, more flights, larger airplanes, more passengers, flight and maintenance crews, more emergency service requirements, more passenger automobiles, freight conveyances and traffic, and more infrastructure. Impacts of these resulting increased operations must be examined along with the physical expansion.

In this regard, we note that there appears to be significant discrepancy between assumptions made in the Master Plan and the agreements between the Authority and its private airport management company, AvPorts, relating to projected levels of passenger enplanements, which will affect estimates of both ground and air traffic. In short, the agreements appear based on far more aggressive assumptions about future activity levels than the FAA-approved forecast in the Master Plan. FAA has acknowledged the need for accurate forecasts as a basis for sound environmental analysis, and the agency should ensure that its environmental processing of the Project does not rely on faulty projections.

The validity of projections has an impact on fundamental aspects of the Project, such as Purpose and Need and the Alternatives Analysis, which is the heart of the NEPA analysis. Thus it is critical that the FAA scrutinize and validate the projections at the outset of the environmental process, not at some later date, when it will be difficult to change the purpose and need and alternatives considered. For instance, if the projections are not accurate, perhaps a 6-gate terminal and related facilities located in the Town is not needed, but an addition to the existing terminal could be sufficient.

As you know, the nation's smaller airports are littered with overbuilt projects that were based on overly optimistic, if not pie-in-the-sky, projections of aviation activity by new airlines that soon failed.

If the projections are accurate, however, the planned expansion in operations will lead to myriad negative direct, indirect and cumulative effects that will necessarily and unavoidably be experienced by the community and the physical environment in the Town and surrounding communities.

**Additional Areas of Particular Concern**

The following brief list of concerns is mostly based on information provided in the Master Plan focusing on the preferred alternative: the Project. Because no information has been released since the November 2021 scoping meeting described above (itself a serious concern regarding the environmental process to date), the list is likely not comprehensive, and should therefore be considered tentative.

Many of the Town's areas of concern intersect and the negative impacts of the Airport expansion in a given area will be magnified in these intersections. For instance, wetlands – both freshwater

and tidal – are an incredibly important resource that are protected under federal, state and local programs in Connecticut. Wetlands play a crucial role in protecting the built environment during major storm events such as are now being experienced with increased frequency and intensity. They are the foundation for many species to thrive. They serve as a filter and conduit to protect and replenish our groundwater resources. They are a frontline natural resource for resiliency in light of our increased storm events. Particularly in the area of the Long Island Sound, the importance of protecting wetlands and sensitive coastal areas has long been recognized in Connecticut, and analysis of impacts is particularly important. All of the wetlands that are lost to development such as is contemplated here have rebounding effects on other areas of impact.

**Noise pollution,** already problematic and inadequately addressed, will be exacerbated by additional flight traffic and roadway traffic. The Master Plan acknowledges aircraft noise is a major factor influencing land use compatibility. Nevertheless, the only recommendation in the Master Plan is to acquire avigation easements or fee simple ownership in the affected areas. In other words, for people to learn to live with it or leave their neighborhoods. A related concern are the many reports of people experiencing vibrations in their homes – literally shaking houses – due to aircraft.

Noise pollution is known to have an adverse effect on mental and physical health and negatively affects wildlife. Further review of this issue is warranted and measures to address the adverse effects need to be provided. Residents are already impacted by the existing noise pollution and are justifiably concerned that their already-compromised quality of life will be further degraded with the proposed expansion of facilities and thus operations, including the projected increase in daily scheduled flights. The impact of noise on the Town Green and other parks also warrants careful study and consideration.

**Vehicular Traffic.** The Town has extensive concerns with the increase in **traffic** that will occur due to the Project. As stated previously, the proposed expanded and relocated new terminal and new parking lot will be accessed via Town roads. The proposed primary route to and from the Airport will traverse local roads, including the designated evacuation route for the community, that are already congested and experience significant backups requiring police assistance on most weekdays. School buses and emergency vehicles as well as residents, business owners, and visitors are already adversely impacted by current levels of traffic, and the increase in traffic proposed under the Project will exacerbate these problems significantly. An increase in response time from emergency responders due to Airport traffic (in addition to the increased demand on their services associated with the Airport) would be inevitable without appropriate mitigation measures.

**Impact on Town Parks and Civic Activities.** The Town takes pride in its efforts to bring the community together by hosting a variety of events for residents. Most of these events will be directly impacted or may no longer be feasible if the Project is implemented as planned. The Town Green, where many of these events are held, is located along Hemingway Avenue, which will become the primary road for egress and ingress to access the new terminal. The analysis of the Project we have seen to date has given no consideration at all to the impact of the proposed new access road on Town and the community functions that are an important part of the Town's

character and appeal to its residents, including the Town's annual road race, fireworks celebration and other events. As noted above, these impacts raise significant concerns over the "use" of parks, which must be evaluated as part of the DOT Act Section 4(f) analysis.

**Impact on Local Businesses.** Vehicular traffic associated with the proposed new Airport access road will also adversely affect local businesses, including the Town's largest taxpayers in the adjacent industrial park, who now utilize Proto Drive and will be harmed by delays in shipping and receiving. Proto Drive, where the new terminal will be located, was simply not designed to handle the volume of traffic that is proposed. Again, there has been no acknowledgment, much less analysis, of the impacts the proposed access road will have on Town roadways and existing roadway users. As just one example of specific issues that need to be examined, the vehicle turning radius for the big commercial vehicles that now enter and exit the businesses located on the road is necessarily large, but manageable, under current roadway conditions. We have seen no analysis of how the existing business traffic will be managed with the large increase in number of passenger vehicles associated with the Project.

The Master Plan claims that the proposed traffic route seeks to avoid purely residential neighborhoods (in the City of New Haven), but it ignores the fact that there are residential uses comingled with commercial traffic on the routes proposed through East Haven. Moreover, it must be anticipated, given the unavoidable congestion that will arise from the vast increase in traffic, that Airport-bound or departing drivers will use "shortcuts" through residential neighborhoods. Also, vehicles that are stuck in traffic emit hazardous air pollutants which will affect the surrounding community.

The traffic problems are inherently related to the location of I-95, Route 1, and the commercial and civic heart of the Town. Traffic impacts of the proposed Project must be carefully and honestly studied, rather than casually and cavalierly dismissed, as they were in the Master Plan, which conveyed the erroneous view that there was a simple fix to address the concerns of New Haven residents and officials who wanted to offload traffic impacts away from their jurisdiction.

**Threatened and endangered species were** documented in the Project area by DEEP in January 2020. Current and planned modalities to ensure protection of these species, if in fact they can be protected, must be provided and reviewed for consistency with state and federal laws and regulations. Migratory species are a special concern and should be considered as well. As a shoreline community, the Town is known for its migratory bird population which will be put at risk by the proposed expansion and relocation of the runway and terminal.

**Resiliency and Stormwater Management** are major issues given the coastal setting and wetlands and low-lying areas in and surrounding the Airport, portions of which are at or below sea level. A recommendation to develop a resiliency plan that includes mitigation measures for sea level rise and conducting a drainage study is made in the Master Plan. These are critical items that should be front burner and used to inform any planned development at or expansion of the Airport and considered as part of the alternatives. There are state and federal initiatives on resiliency, particularly in shoreline areas, that should be reviewed, and consistency therewith ensured.

Flooding associated with the major storm events that are occurring with increasing frequency is already having a significant negative effect on the community in their homes and on roadways near the airport. Vastly increased traffic levels relating to the Project will run through roads, including the Town's primary evacuation route, that are already subject to dangerous flooding, which at times renders the road impassible. The introduction of a major increase in traffic and loss of wetlands that serve as a natural compensatory mechanism for storm water management is a dangerous combination vis a vis flooding. The direct loss and degradation of wetlands due to the Project, compounded by the indirect effect this will inevitably have on adjacent wetlands and watercourses, and the expanded area of impervious surfaces from expanded parking facilities will significantly increase stormwater volume, giving cause for alarm. Finally, the impacts of the Project on the Town's stormwater management system must be considered, especially in light of the fact that the Town does not have the necessary resources to increase and improve that system.

With respect to sea level rise, data developed specifically for Connecticut by the Connecticut Institute for Climate Resilience and Adaptation (CIRCA) shows that sea level in the state could rise as much as 20 inches by the year 2050 in flat, low-lying areas of the coast such as the Airport which is in a FEMA 100-year floodplain. Thus, impacts of the Project should be evaluated with this in mind.

**Stormwater** discharge associated with traffic, airplane operations including fueling and deicing, vehicle parking and other infrastructure subject to runoff into the environment is particularly detrimental to wetlands and other aspects of the environment. The Project should be closely examined for stormwater impact to surface and groundwater, wetlands, and coastal resources.

**Surface** and **groundwater** resources are present at the airport and will likely be impacted by the Project. This is particularly true for Turtle Brook in East Haven which is known as Morris Creek on the New Haven side of the Airport. According to the Master Plan, the water quality classification of the creek in the vicinity of the Airport is Surface Water Quality Classification "B" (SB) and "A" (SA), indicating a coastal/marine surface water that is presently not meeting the SA Water Quality Criteria for one or more designated uses. The SA designated uses include marine fish, shellfish, wildlife habitat, shellfish harvesting for human consumption, recreation, and other legitimate uses including navigation.

**Air quality** issues associated with increased road and flight traffic need to be considered especially in the neighborhoods proximate to the Airport and those that will bear the brunt of traffic. The Project is located in a non-attainment area under federal criteria for eight-hour Ozone NAAQS (under both 2015 and 2008 standards) and a maintenance area for carbon monoxide, nitrogen dioxide, and fine inhalable particles with diameters less than or equal to 2.5 micrometers, i.e., particulate matter which is of particular concern as a health hazard. Consideration of all possible alternatives and mitigation available is critical to ensure that the Project does not contravene the substantive standards of the Clean Air Act. This is especially critical as air quality impacts are already being experienced in broad areas near the Airport, including the residential areas where vulnerable populations, including children, are located. Realistic assessment of these impacts must be considered under NEPA as well as the substantive air quality statute and regulations.

**Light pollution** associated with Airport operations and increased traffic and its impact on human health, wildlife and the environment needs to be evaluated and mitigated if not eliminated.

**Land Uses** immediately surrounding the Airport, including the Project area, are acknowledged as generally residential in the Master Plan. The Master Plan further notes the land uses on the east side of the Airport, where the Project will be constructed, "include single family, two family, and multi-family residential as well as commercial, industrial, and land for recreation and entertainment." All of the negative impacts associated with the Project will be primarily borne by the people and the families living, working, going to school, shopping and commuting in this area. A major expansion of the Airport is inconsistent with current land uses.

**Environmental Justice** concerns are manifold. The entire Town is considered a distressed municipality by the State of Connecticut due to high unemployment and poverty, aging housing stock and low or declining rates of growth in job creation, population and per capita income and is therefore considered a protected environmental justice community. The state's environmental justice program seeks to address the historic placement or expansion of polluting facilities in communities that have historically been exposed to higher than average amounts of environmental pollution. The federal government has recently reaffirmed its commitment to careful consideration of environmental justice issues in its funding and approval decisions. Therefore, FAA and the Authority must pay diligent attention to the environmental justice issues relating to the project, as well as providing multiple and meaningful opportunities for the community to be informed and participate in the NEPA process.

Finally, the federal government has made a renewed commitment to consider the impact of federally approved and funded projects on **climate change.** Because the Project will result in increased flights and vehicular traffic, impacts related to climate change must be examined and assessed.

**Conclusion**

Under NEPA any "major Federal actions significantly affecting the quality of the human environment" require an EIS. As set forth above, FAA standards mandate an EIS when quantitative significance thresholds for specific categories are met, or where examination of FAA-identified factors indicates that an EIS is warranted. In light of the significant environmental concerns raised by the Town and others, we believe the preparation of an EA alone will simply not be adequate to meet the FAA's obligations under the law.

As repeatedly demonstrated above, FAA's role in facilitating and approving the proposed expansion of Tweed including but not limited to: an extended runway and ancillary access to the runway; a new terminal facility; expanded parking; and a new access road to encourage and facilitate the planned expansion in passenger and potentially cargo flights and increased passenger enplanements and vehicular traffic are major federal actions that will significantly affect the environment. The significant effects will be disproportionately borne by the surrounding residential and commercial community and indeed all of the Town and local New Haven area

communities as well. As noted above, the Town is a state-designated distressed municipality, demanding special consideration by the FAA.

Town residents are already inundated with the impacts of previous ill-conceived, poor decisions regarding development in sensitive environmental areas. The EIS process is designed to avoid further poor decisions by ensuring that a thorough and informed evaluation of a proposed action is undertaken. The FAA must comply with this mandate, especially in light of the known and foreseeable significant negative effects of the Project.

An EIS is required here given the gravity of the numerous public health and environmental issues raised by the Project, the numerous sensitive receptors that will be affected by the proposed action, the failure of the Authority to date to adequately articulate the full scope of the Project, the concerns expressed by the Town and other communities that will be affected, and the importance of providing a full and transparent process that gives members of the affected communities adequate information and opportunity to engage with the professionals and planners of this federally authorized (and partially funded) Project.

If, despite the Town's demonstration of the need to prepare an EIS for the Project, the FAA decides to continue to proceed instead with an EA, we request that the FAA and the Authority afford the maximum possible public involvement in the process, pursuant to Order 1050.1F Paragraph 6-2.2.

The concerns raised in this letter are based on information currently available to the Town. The town has been seeking information and relevant materials from the Authority for over a year, without success, which has required the Town to now make formal and tremendously detailed requests for necessary information. As noted above, on September 29, 2022, the Town made a written request for additional material information from the Authority (attached hereto). The Town, on September 16, 2022, also made a formal Freedom of Information request of the Authority (also attached). If we receive significant new information from the Authority, we will likely need to make further comments on the Environmental Assessment and the NEPA process.

In the meantime, please feel free to reach out to me with any questions or concerns.

Very truly yours,

Joseph A. Carfora

Mayor Joseph Carfora

cc: Hugh I. Manke, Updike Kelly & Spellacy PC
John F. Stafstrom, Jr., Pullman & Comley, LLC
Daniel S. Reimer, Daniel S. Reimer, LLC
James J. Healy, Cowdery & Murphy, LLC
Kevin Willis, FAA

Gail B. Lattrell, FAA
Sean Scanlon, Tweed-New Haven Airport Authority
Michael Luzzi, Town Attorney, Town of East Haven

Town of
EAST HAVEN
CONNECTICUT

Michael J. Luzzi – Town Attorney
1172 Townsend Avenue
New Haven CT 06512
(203) 404-5155

September 29, 2022

Tweed-New Haven Airport Authority
155 Burr Street
New Haven, CT 06512
Attn: Sean Scanlon, Executive Director

**Re: Master Plan and Lease and Development Agreement for Expansion of Tweed-New Haven Airport**

Dear Mr. Scanlon:

The Tweed-New Haven Airport Authority (the "Authority") has adopted a Master Plan Update dated October 2021 (the "Master Plan") prepared by McFarland and Johnson (the "Master Plan Consultant") and relating to the proposed expansion of the Tweed-New Haven Airport (the "Airport") including, but not limited to, an extended runway and ancillary access to the runway; a new terminal facility; expanded parking; and a new airport access road (the "Project"). The new terminal facility, parking, and access road each are intended to move from their current location in the City of New Haven (the "City") to the Town of East Haven ("Town").

On August 17, 2022 the Board of Directors of the Authority approved: (1) a Lease and Development Agreement (the "Development Lease") between the Authority and The New Haven LLC (the "Lessee"); (2) an Amended and Restated Lease (the "City Lease") between the City and the Authority; and (3) Amendment No. 6 to the Agreement between the Authority and AvPorts LLC and AvPorts HVN LLC (collectively, "AvPorts") (the "Management Agreement"). The Master Plan and the Project currently are under review under the National Environmental Policy Act ("NEPA"). Notwithstanding that the Master Plan and Development Lease specifically contemplate the construction and operation of significant improvements within the Town, the Town and its counsel were afforded almost no time to review the Development Lease, the City Lease and the Management Agreement before those agreements were approved by the Authority Board. The Town Attorney and the members of the Authority Board appointed by the Town first received the agreements on Sunday afternoon August 14th. The Authority Board met in executive session with little notice on the morning of August 15th.

The Town directors objected to the executive session of the Board, but the meeting proceeded nonetheless. That afternoon, the Authority's Board Chair and Executive Director called a special Board meeting for Wednesday, August 17th at 4:00 p.m. via Zoom. At that meeting and within public comment period, the Town's Mayor expressed his concern that consideration of the agreements was being rushed without any input or comments from the Town.

Numerous members of the public expressed the same concern. There was no presentation or discussion of any of the agreements at the meeting by the Authority's Executive Director, Authority counsel, the Lessee, the City or AvPorts. When each of the Development Lease, the City Lease and the Management Agreement came before the Board, the Directors appointed by the Town present at the meeting made motions to table to provide time to gather more information relating to the agreements. In each case, the motion to table failed and the resolutions approving the agreements were approved by the Board *with no discussion* and with the Directors appointed by the Town voting against approval.

The Town and its counsel have now had time to review the agreements and present our initial comments and questions below:

- We believe and have been advised by the Town's outside counsel that many of the improvements proposed in the Master Plan are subject to approval by the Town's Planning and Zoning Commission and Inland Wetlands Commission. We also believe that those improvements will be subject to Town building, fire and public safety requirements. We do not see where those approvals are addressed in the Development Lease. What assumptions have the Authority and Lessee made with regard to the necessary approval processes for zoning, land use, building permits, and inspections for those portions of the Project to be built within the Town?
- We believe and have been advised by outside counsel that the new terminal facilities and parking proposed in the Master Plan will be subject to property taxes to be assessed and collected by the Town. The Development Lease seems to assume that all improvements proposed in the Master Plan will be tax exempt. Does the Authority expect that the new terminal facilities and parking will generate any real and personal property tax revenues for the Town?
- We do not see that the Development Lease addresses who will pay for the additional services to be provided by the Town if the Project is pursued and completed as planned such as building approvals, public safety, roadway maintenance, snow removal, and similar matters? Who does the Authority expect will be responsible for the cost of these services?
- What are the Authority's plans and timetable to enter into a Community Benefits Agreement with the Town similar to the one entered into with the City?
- The Authority initiated an Environmental Assessment ("EA") immediately after completing the Master Plan and held a scoping meeting on November 18, 2021. No further information has been shared publicly, no draft has been released for public comment, and minimal coordination with the Town has occurred. What is the Authority's plan and timetable for compliance with NEPA, including consultation and public participation requirements? Considering the massive expansion to the Airport being proposed, including a major runway extension, what is the Authority's expectation about the need for an Environmental Impact Statement after the EA is completed?

- The Town will need a single point of contact to address compliance with local laws and procedural requirements. Will the Authority, the Lessee or AvPorts be responsible for all of the various environmental and public health and safety compliance issues involved in the development and then the operation of the Project and how will those issues be addressed? Who will pay for the costs of compliance?
- The Development Lease, at Section 10.10, includes "mitigation" measures on topics including traffic, water level, wetlands, stormwater, and noise. It appears premature to define the nature and extent of Lessee's mitigation responsibilities until the full scope of environmental and community impacts from the Project are established, in part through the NEPA and in part through coordination with the Town. Based on what we know today, the Total Community Investment of $5 million appears grossly inadequate, both in the short-term and over the term of the Development Lease. How did the Authority, AvPorts and Lessee establish these mitigation obligations and associated costs?
- Related, how will the Authority, the Lessee or AvPorts address the numerous resiliency issues given that the Airport and the proposed expansion are near sea level and are surrounded by tidal wetlands?
- How will the Authority, the Lessee, or AvPorts address the traffic related issues relating to the Project?
- Who does the Authority expect will decide how any traffic and noise mitigation funds will be split between the City and the Town? Who does the Authority expect will decide if those funds are adequate to address the traffic and noise issues?
- When will the Town be expected to appoint its representatives to the environmental stewardships committee provided for in the Development Lease?
- The Management Agreement, at Section 9(g), says that the City's noise ordinance is "not legally enforceable", and both the Management Agreement and Development Lease require AvPorts and Lessee to pursue noise abatement only with respect to engine run-ups and GPU and APU use. What is the basis for the statement that the City ordinance is not legally enforceable? What is the Authority's position with respect to mandatory noise- and weight-based restrictions on use of the Airport? How does the Authority intend to address lighting issues at the Airport?
- What different governmental entities does the Authority envision will have review and approval authority over the final plans and specifications for the proposed new terminal, parking and access for the Airport portion of the Project?
- Do the Authority and the Lessee intend to move all Airport passenger parking to the Town portion of the Airport after completion of the Project? If not, what percentage or number of spaces does the Authority intend to locate within Town limits?
- Do the Authority and the Lessee intend to utilize the existing access road to the Airport after completion of the Project? If so, what level of traffic or percentage of traffic does the Authority expect to use the existing access road?
- The Town is concerned that the public roadways surrounding the Airport are inadequate to support the traffic burden associated with the planned terminal relocation. Has the Authority studied these traffic impacts and have recommendations for roadway improvements? What coordination and requests for approvals does the Authority contemplate requesting of the Town for off-Airport traffic improvements?

- The Development Lease, at Section 4.8(f), requires City approval for accommodating all-cargo operations at the Airport. Considering that all-cargo operations may occur in the Town, why are such activities only subject to City, and not Town, approval?
- Again, there was no public presentation of the agreements, including any information about the projected costs and revenues associated with the agreements and, more specifically, whether and how projected revenues are projected to cover the sizable capital investment required for the planned terminal relocation. What experts has the Authority engaged to review the validity of the financial projections necessary to support the financing by the Lessee of its portion of the Project?
- What will happen to the proposed new terminal facility and parking if the Lessee is unable to fulfill its commitments during construction or after the facilities are constructed?
- What will happen if Avelo Airlines collapses, decides not to fly from and to the Airport at projected rates, or otherwise fails to meet the air service levels projected for it in the Master Plan?
- Why is the term of the Development Lease 43 years?
- What experts have reviewed the federal income tax treatment provisions of the Development Lease to ensure that any proposed financing can be done on a tax-exempt basis?
- What experts have reviewed the future financial projections for the Project on behalf of the Authority to ensure that the Project continues to operate as planned?
- Who will set the parking fees at the Airport upon completion of the Project?
- How will the Authority fund any termination fee if one is required to be paid by the Authority under the Development Lease?
- Who will complete the Project if the Lessee fails to complete the construction once it is underway?
- To date, how much has the Lessee or AvPorts reimbursed the Authority for its costs related to the Project and the Development Lease, the Management Agreement and the Master Plan? Has the City received any similar reimbursements?
- Why does the Development Lease provide for an annual meeting with City representatives but no similar meeting with representatives of the Town? Will the Authority hold such a meeting with the Town?

We trust and hope that the Authority will take these comments and questions seriously and we can begin meaningful and constructive dialogue about the Authority's plans. As you know, both federal law and the AIP Grant Assurances require consultation with the Town, consistency with local plans, and fair consideration of the community's interests. The Authority has fallen far short of these legal obligations to date. The Town would appreciate a prompt written response to this inquiry. We also stand ready to meet, at any time and place of your choosing, to discuss the issues enumerated above. Thank you.

Very truly yours,

Michael J. Luzzi

cc: Hugh I. Manke, Updike Kelly & Spellacy PC
John F. Stafstrom, Jr., Pullman & Comley, LLC
Daniel S. Reimer, Daniel S. Reimer, LLC
James J. Healy, Cowdery & Murphy, LLC
Kevin Willis, FAA
Gail B. Lattrell, FAA

# Law Office of Michael Luzzi, LLC

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Michael J. Luzzi

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September 16, 2022

***SENT VIA ELECTRONIC MAIL ONLY***

Tweed-New Haven Airport Authority
155 Burr Street
New Haven, CT 06512
Attn: Sean Scanlon, Executive Director

**Re: Master Plan and Lease and Development Agreement for Expansion of Tweed New Haven Airport**

Dear Mr. Scanlon:

As you know, the Tweed-New Haven Airport Authority (the "Authority") has adopted a Master Plan Update dated October 2021 (the "Master Plan") prepared by McFarland and Johnson (the "Master Plan Consultant") and relating to the proposed expansion of the Tweed New-Haven Airport (the "Airport") including, but not limited to, an extended runway and ancillary access to the runway; a new terminal facility; expanded parking; and a new airport access road (the "Project"). As you also are aware, on August 17, 2022, the Board of Directors of the Authority approved: (1) a Lease and Development Agreement (the "Development Lease") between the Authority and The New Haven LLC (the "Lessee"); (2) an Amended and Restated Lease (the "City Lease") between the City of New Haven (the "City") and the Authority; and (3) Amendment No. 6 to the Agreement between the Authority and AvPorts LLC and AvPorts HVN LLC (collectively, "AvPorts") (the "Management Agreement"). The Master Plan and the Project currently are under review under the National Environmental Policy Act ("NEPA").

On behalf the Town of East Haven (the "Town") and the Town's Mayor and pursuant to the Connecticut Freedom of Information Act ("FOIA"), Connecticut General Statutes §§1-210(a) and 1-212(a), we hereby request a copy of any and all records or internal or external communications of any kind in any format (whether electronic, paper or otherwise) in the possession of the Authority[1] that in any way pertain to, relate to, reference, contain, or include information regarding the Master Plan, the proposed/aforementioned expansion of the Airport, the Project, the Development Lease, the City Lease, and/or the Management Agreement, including but not limited to the following:

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[1] References to the Authority (or any other entity or agency) shall include, but not be limited to appointed officials, officers, employees, representatives, consultants, contractors, agents and attorneys of those entities, which may hereinafter be referred to as "personnel."

1. Any and all exhibits to, for or related in any way to the Development Lease including, but not limited to, Exhibit H – the side letter with the City;

2. The original Agreement with AvPorts and all amendments thereto (amendments No. 1 to No. 5) as referenced in the Management Agreement;

3. Any and all correspondence[2] (and/or communications of any kind, whether internal or external) with, to, by and/or between the Master Plan Consultant related in any way to the development, drafting, editing or revisions of the Master Plan;

4. Any and all environmental, geotechnical, noise, air quality, lighting, traffic and other materials relevant to the physical environment that is or may be impacted by the Project or the Master Plan including all correspondence, reports or studies of any kind and nature received or requested by the Authority in conjunction with the Project and the Master Plan including but not limited to those requested to be performed by the City, the Lessee, AvPorts, the State of Connecticut Department of Transportation (the "CDOT"), the State of Connecticut Department of Energy and Environmental Protection ("DEEP"), the Federal Aviation Administration (the "FAA"), and the U.S. Army Corps of Engineers (the "Army Corps");

5. Any and all traffic, environmental, wetlands, stormwater, noise, greenhouse gas emission reports or studies of any kind and nature received or requested by the Authority designed and intended to develop, or related in any manner to, the "Mitigation" measures contained in the Development Lease;

6. Any and all draft or final contracts related in any way to or associated with the Project and the Master Plan or agreements, proposals, requests for proposals ("RFPs") and correspondence regarding the items in (4) and (5) above and that pertain to physical conditions, environmental, geotechnical, noise, air quality, traffic and other considerations, along with any communications including or making reference (or containing the terms) of any such contracts or agreements;

7. Any and all reports, studies, notices, correspondence, proposals, RFPs, agreements or contracts (and/or communications of any kind, whether internal or external) that relate in any way to National Environmental Policy Act compliance with regard to the Project or the Master Plan;

8. Any and all correspondence, applications, studies, and reports (and/or communications of any kind, whether internal or external) related in any way to proposed activities in coastal areas including wetlands or inland wetland areas as regulated by local, regional, state and federal regulatory authorities;

9. Any and all correspondence (and/or communications of any kind, whether internal or external) with, to, by and/or between the FAA regarding or relating in any way to the Development

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[2] Any reference to "correspondence" or other specific document/record is to include such record in any format (whether electronic, paper or otherwise), including but not limited to electronic correspondence such as e-mails, text messages, or other instant messaging or communications.

Lease and the Management Agreement, the Master Plan and the Project including any related to NEPA compliance;

10. Capital cost and revenue estimates, financing plans, value-for-money studies, pro forma budget(s) and similar and related financial analyses, regardless of how characterized and titled, for each and any component parts of the Project and the improvements authorized in the Development Lease;

11. Community Betterment Agreement with the City dated September 23, 2001, referenced in the Development Lease and all correspondence (and/or communications of any kind, whether internal or external) with, to, by, and/or between the City, the Lessee and AvPorts related in any way thereto;

12. Any and all correspondence (and/or communications of any kind, whether internal or external) with, to, by, and/or between CDOT and DEEP regarding or relating in any way to the Project or the Master Plan including but not limited to geotechnical, traffic, noise and environmental issues;

13. Any and all correspondence (and/or communications of any kind, whether internal or external) with, to, by and/or between the US Army Corps of Engineers regarding or related in any way to the Project or the Master Plan;

14. Any and all correspondence (and/or communications of any kind, whether internal or external) with, to, by and/or between the Authority and the City related in any way to the Project or the Master Plan;

15. Any and all correspondence (and/or communications of any kind, whether internal or external) with, to, by and/or between the Authority's Executive Director and any members of the Authority's Board of Directors related in any way to the Project, the Master Plan, the Development Lease, the City Lease and the Management Agreement, including without limitation any staff reports, memoranda, presentations, explanatory written material or other records on the subject;

16. Any and all studies, correspondence and/or communications of any kind, whether internal or external) related in any way to the potential impacts (of any kind) on, and/or benefits to, the City and the Town from the Project;

17. Any and all correspondence, reports, studies and other materials (and/or communications of any kind, whether internal or external) related in any way to FAA airport design standards requiring a full-length parallel taxiway associated with the proposed extended runway;

18. Any and all correspondence (and/or communications of any kind, whether internal or external) with, to, by and/or between the FAA, DEEP, CDOT and the City related in any way to the preparation of Noise Exposure Maps and a Noise Compatibility Plan in accordance with 14 C.F.R. Part 150 and, to the extent not included in any Part 150 study, any noise abatement or mitigation plan adopted by the Authority;

19. Any and all correspondence (and/or communications of any kind, whether internal or external) with, to, by and/or between the Authority, City and FAA concerning the continued application and enforcement and/or potential repeal, nonenforcement or nonapplication of City Code Article IV, Noise and Safety Standards, including without limitation Section 4-63 (Prohibited noise levels of aircraft taking off or landing), Section 4-69 (Run-ups, ground power units, auxiliary power units), and/or Section 4-70 (Aircraft weight restriction);

20. Any and all correspondence (and/or communications of any kind, whether internal or external) with, to, by and/or between the FAA relating in any way to the most recent inspection by the FAA of the Authority's compliance with the Airport Operating Certificate and 14 C.F.R. Part 139;

21. Any and all correspondence (and/or communications of any kind, whether internal or external) with, to, by and/or between the FAA and the City relating in any way to any alleged violation by the Authority of the Airport Improvement Program Grant Assurances;

22. Any and all correspondence (and/or communications of any kind, whether internal or external) with, to, by and/or between the Authority and the City relating in any way to the City Lease;

23. Any and all correspondence (and/or communications of any kind, whether internal or external) with, to, by and/or between the Authority and the Lessee and/or AvPorts relating in any way to the Development Lease and the Management Agreement including, but not limited to, the following subject areas: (a) design of the various components of the Project; (b) plan of finance for those portions of the Project to be constructed by the Developer; (c) FAA, State and local approvals expected to be needed for the Project, including all environmental, traffic, land use, zoning and building approvals; (d) community benefits to be provided to the City and the Town; (e) ongoing compliance with environmental, coastal management, traffic and related requirements; and (f) taxability for real and personal property tax purposes of those parts of the Project to be constructed and/or managed by the Lessee and/or AvPorts;

24. Any and all other external or internal communication with, to, by and/or between the Authority or its personnel that otherwise (in any way) pertain to, relate in any way to, reference, contain, or include information regarding the Master Pan, the proposed/aforementioned expansion of the Airport, the Project, the Development Lease, the City Lease, the Management Agreement, and/or any of the foregoing requests.

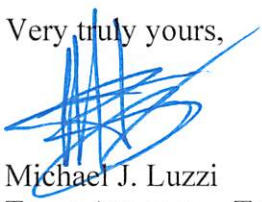
These requests seek any and all records, communications, documents and writings in any form or media (whether paper, electronic, or otherwise) with regard to the above listed subject matter and requests, including but not limited to correspondence, internal and external memoranda and notes, e-mails (whether sent or received), text messages or other instant messaging, and calendar entries, all in final form and drafts thereof. This is a continuing request, as any newly created or received documents (e.g., those created or that come into the possession of the Authority or its personnel after the date of this request) should be forwarded as they come into existence or the possession of the Authority or its personnel, to the extent such communications are non-exempt under the FOIA.

You may send the information to us via email in PDF or an equivalent format. If any of the requested information cannot be sent electronically, then please advise us as to the cost-per-page for paper copies, and estimated total costs for said copies. In order to expedite your compliance with this request, rather than waiting to complete your review before starting to forward the requested records, please provide responsive records as soon as they are identified or retrieved.

Consistent with Connecticut General Statutes §1-206(a), please contact us at your earliest convenience with regard to your compliance with this request. Thank you for your expected cooperation and assistance in this matter.

Your prompt attention to this request in compliance with the FOIA is appreciated.

Very truly yours,



Michael J. Luzzi
Town Attorney – Town of East Haven

cc: Hugh I. Manke, Esq., Updike Kelly & Spellacy PC
John F. Stafstrom, Jr., Esq., Pullman & Comley, LLC
Daniel S. Reimer, Esq.

COMMENTS OF THE TOWN OF EAST HAVEN ON THE TWEED NEW HAVEN AIRPORT NEPA DRAFT ENVIRONMENTAL ASSESSMENT RUNWAY 02-20 EXTENSION AND TERMINAL EXPANSION PROGRAM

Attachment J

Email dated April 28, 2023 from Fire Chief Marcarelli re: flooding Coe/Hemingway Short Beach

**From:** Matt Marcarelli <mmarcarelli@easthavenfire.com>
**Sent:** Friday, April 28, 2023 10:34 AM
**To:** Michael Luzzi <michael@luzzilaw.com>
**Subject:** Review of information Coe/Hemingway/Short Beach

Attorney Luzzi,

Per your request we have reviewed historical records and from there period between 2009 to present there have been 39 incidents where the flooding became such an impediment. Flooding resulted in motor vehicle accidents, disabled motor vehicles or a hazard to passing. On average the intersection floods between 12-15 times annually to varying degrees. The flooding causes an impact of response times and at one point this year fire apparatus needed to travel through New Haven cross town.

**Matthew Marcarelli**
Fire Chief – Emergency Management Director

**Phone** 203-468-3221
**Web** www.easthavenfire.com
**Email** mmarcarelli@easthavenfire.com
200 Main Street, East Haven, CT 06512

COMMENTS OF THE TOWN OF EAST HAVEN ON THE TWEED NEW HAVEN AIRPORT NEPA DRAFT ENVIRONMENTAL ASSESSMENT RUNWAY 02-20 EXTENSION AND TERMINAL EXPANSION PROGRAM

Attachment K

Hemingway Avenue/Coe Avenue Corridor Study Final Report (SCRCOG/CDM Smith)

Final Report

# Hemingway Coe Avenue Corridor Study

CDM Smith

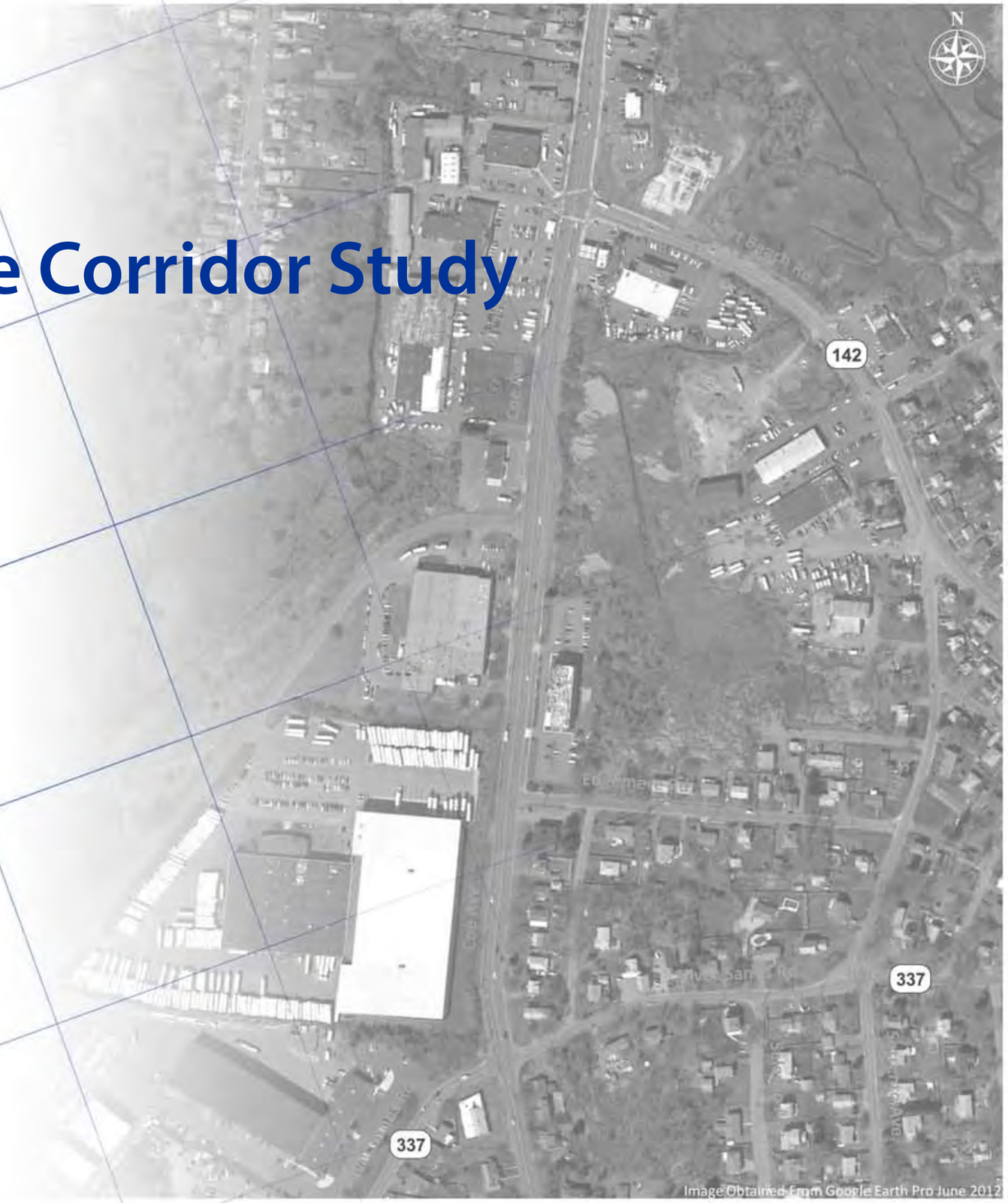
SCRCOG
SOUTH CENTRAL REGIONAL COUNCIL OF GOVERNMENTS

Image Obtained From Google Earth Pro June 2012

Final Report

# Hemingway Coe Avenue Corridor Study

June 2012



# TABLE OF CONTENTS

# 1 INTRODUCTION

This chapter provides an introduction on the study process and contents of this report.

## 1.1 *Study Background*

The South Central Regional Council of Governments (SCRCOG) is the designated Metropolitan Planning Organization (MPO) for the New Haven area. The SCRCOG has undertaken the Hemingway Avenue/Coe Avenue Corridor Study at the request of the Town of East Haven. CDM Smith is the prime consultant to assist the SCRCOG and the Town of East Haven on this project.

## 1.2 *Study Purpose*

The purpose of this study was to work with the Town of East Haven to identify solutions on an existing flooding issue on Hemingway Avenue and Coe Avenue. In addition, the town is seeking assistance to explore potential re-alignment options for Proto Drive in order to better accommodate development in the existing industrial park.

The specific study objectives are:

- Inventory existing roadway and geometric conditions.
- Identify existing flooding issues in order to elevate the intersection of Hemingway Avenue and Short Beach Road (Routes and 142) to reduce flooding and improve safety, emergency response, and access to portions of East Haven during storm events.
- Conduct a high level evaluation of the roadway grades and identify potential mitigation options on the Hemingway Avenue and Coe Avenue corridor that alleviate flood impacts to regional travel while minimizing grading impacts and maintaining safe access to existing properties adjacent to the roadways.
- Conduct level of service and safety analysis on the Hemingway and Coe Avenue corridors.
- Suggest alternative re-alignment options for Proto Drive based on available engineering data and existing environmental resource mapping.
- Develop an order of magnitude cost estimate for roadway work.
- Develop a list of action items or “Next Steps” for the town to advance the design and implement construction.

## 1.3 *Study Area*

The study limits for this project are Hemingway Avenue and Coe Avenue between Short Beach Road and Proto Drive (see **Figure 1.1**). A portion of Proto Drive has been included to study the potential re-alignment options.

## 1.4 *Meetings with Town*

The following is a list of meetings conducted with the town during the study process:

- Project Kick-off Meeting – May 24, 2012
- Project Meeting with Town Engineer – June 15, 2012
- Final Presentation to the Town –June 29, 2012

## 1.5 *Report Contents*

This report is broken into the following sections:

- **Existing Conditions** – This chapter documents the existing conditions along the Hemingway and Coe Avenue corridors relative to roadway conditions, traffic conditions, safety, environmental resources, and land use.
- **Realignment of Proto Drive** – This chapter studies the potential options to realign Proto Drive in order that the town can optimize future industrial development (new construction and expansion of existing uses) along Proto Drive. This analysis will also provide an initial determination of potential wetland impacts based on available wetland mapping.
- **Hemingway Avenue – Coe Avenue Concept Plan** – This chapter reviews the existing geometric conditions (plan and profile) as well as drainage and flooding issues associated with the existing roads, and provides a preliminary recommendation of a plan and profile that could alleviate flooding while minimizing property impacts.
- **Next Steps** – This chapter summarizes the results of the preliminary analysis and outlines next steps to advance this project to enable further review and discussions with state and federal land use and environmental protection agencies (DEEP, U.S. Army Corps of Engineers, and others) and to prepare engineering and design documents.

# 2 EXISTING CONDITIONS

This chapter discusses existing conditions in the project area.

## 2.1 *Roadway Conditions*

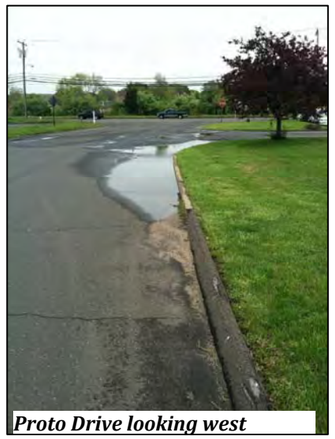
The following is a list of roadways within the study area:

**Hemingway Avenue (S.R. 142)**


*Coe Avenue looking south*

Hemingway Avenue (also known as S.R. 142) is a four lane arterial roadway that is oriented in a north-south direction. It provides the principal means of access to the southern portion of the Town of East Haven and connects this shoreline area to the town center and to Interstate 95 to the north. Land uses in the area primarily consist of industrial, commercial and retail properties. The posted speed limit on Hemingway Avenue is 35 miles per hour. The travel lanes are 11 feet wide; in addition, 2 foot wide paved shoulders are generally provided on the outside of each travel lane. The intersection of Hemingway Avenue/Coe Avenue (S.R. 337)/Short Beach Road (S.R. 337) is signalized.

**Coe Avenue (S.R. 337)**


*Proto Drive looking west*

Coe Avenue (also known as S.R. 337) is the continuation of the Hemingway Avenue arterial and maintains a north-south orientation. It begins at the southerly terminus of Hemingway Avenue at its intersection with Short Beach Road. Coe Avenue is also a four lane roadway. Land uses in the area primarily consist of industrial, commercial, retail, and residential properties. The posted speed limit on Coe Avenue is 35 miles per hour. The travel lanes are 11 feet wide; in addition, 2 foot wide paved shoulders are generally provided on the outside of each travel lane.

**Proto Drive**

Proto Drive is a two-lane, town owned road which provides access to several industrial properties from Hemingway and Coe Avenues. It is a dead-end street that is paved for most of its length but becomes a dirt road at its western terminus. There are no posted speed limit signs or pavement markings on Proto Drive. On the northwesterly side of Proto Drive, there is a large tidal wetland area that affects the realignment options of Proto Drive. Traffic at the intersection of Proto Drive and Coe Avenue is controlled with a stop-sign.

**Short Beach Road (S.R. 142)**

*Short Beach Road looking east*

Short Beach Road (also known as S.R. 142) is a two lane roadway in the project area. This roadway is oriented in an east-west direction. It connects with Hemingway Avenue and provides principal access to the Farm River shoreline of East Haven and to the southern portion of the Town of Branford. Land uses in the area are primarily commercial and retail properties. The posted speed limit on Short Beach Road is 35 miles per hour. Lane and shoulder widths vary on Short Beach Road.

## 2.2 *Traffic Conditions*

The following details the traffic conditions at the study area intersections:

**Existing (2012) Traffic Volumes**

Manual traffic counts were conducted at the following intersections on Thursday, May 10, 2012 during the weekday A.M. peak hour (7:00-9:00 A.M.) and P.M. peak hour (4:00-6:00 P.M.) periods:

- Hemingway Avenue/Coe Avenue/Short Beach Road
- Coe Avenue/Proto Drive

**Figure 2.1** shows the existing (2012) traffic volumes at the study area intersections.

**Existing (2012) Level of Service Analysis**

Level of Service (LOS) is a qualitative measure of driver satisfaction with a number of factors that influence mobility and reflect the degree of traffic congestion. These factors include speed and travel time, traffic interruption, freedom of maneuverability, safety, driving comfort and convenience, and delay.

In general, there are six levels of service describing traffic flow conditions. **LOS A** describes a condition of "free flow", with low volumes and high speeds. **LOS B** represents a stable traffic flow with operating speeds beginning to be restricted somewhat by traffic conditions. **LOS C** describes stable traffic operations. **LOS D** reflects a condition of more restricted movements for motorists as

congestion becomes more noticeable. **LOS E** is representative of the actual capacity of a roadway or an intersection and reflects delay to all motorists due to congestion. **LOS F** is described as "force flow" and is characterized by traffic volumes that exceed what the roadway can handle. This causes a "breakdown" of traffic conditions on the roadway; therefore, LOS F is considered an unacceptable traffic operating condition.

For this analysis, LOS was estimated for signalized and un-signalized intersections. The traffic analysis software Synchro 7 was used to determine the existing peak hour LOS at the study intersections. **Table 2.1** and **Table 2.2** highlight the LOS criteria for signalized and un-signalized intersections, respectively. The LOS criterion for signalized and un-signalized intersections is based on control delay per vehicle measured in seconds. Control delay is defined as the amount of time a vehicle has to wait at an intersection due to a stop-sign or a traffic signal.

Table 2.1
**Level of Service Criteria for Signalized Intersections**

| Level of Service | Control Delay Per Vehicle (seconds) |
|---|---|
| A | ≤10 |
| B | >10 and ≤20 |
| C | >20 and ≤35 |
| D | >35 and ≤55 |
| E | >55 and ≤80 |
| F | > 80 |

Source: 2000 Highway Capacity Manual, Transportation Research Board

Table 2.2
**Level of Service Criteria for Un-signalized Intersections**

| Level of Service | Control Delay Per Vehicle (seconds) |
|---|---|
| A | ≤10 |
| B | >10 and ≤15 |
| C | >15 and ≤25 |
| D | >25 and ≤35 |
| E | >35 and ≤50 |
| F | > 50 |

Source: 2000 Highway Capacity Manual, Transportation Research Board

LOS was determined for the study area intersections under existing conditions during the weekday A.M. and P.M. peak hour periods using the existing traffic volumes shown in Figure 2.1. The results of the analyses for signalized intersections are presented in **Table 2.3**Error! Reference source not found..

**Table 2.3**
**Level of Service Analysis**

| Intersection | Existing Year (2012) A.M. Peak | Existing Year (2012) P.M. Peak |
|---|---|---|
| **Hemingway Avenue/Coe Avenue/Short Beach Road** | **B(10.1)** | **B(10.6)** |
| Coe Avenue Northbound | B(14.9) | B(16.6) |
| Hemingway Avenue Southbound | A(5.8) | A(6.4) |
| *Left* | A(5.9) | A(8.9) |
| *Through-Right* | A(5.7) | A(4.8) |
| Short Beach Road Westbound | A(9.7) | A(9.6) |
| *Left-Through* | B(17.0) | C(21.9) |
| *Right* | A(9.2) | A(8.1) |
| Plaza Drive Eastbound | B(12.0) | B(19.5) |
| **Coe Avenue/Proto Drive** | | |
| Coe Avenue Northbound Left | A(0.7) | A(0.2) |
| Proto Drive Westbound | B(13.7) | C(23.7) |

As indicated above, the LOS at the study area intersections is LOS C or better for a specific movement, approach, or as an overall intersection.

## 2.3 *Safety Conditions*

Accident data available through the Connecticut Department of Transportation (CTDOT) was reviewed for the most recent three year period, i.e. between January 2006 and December 2008. The following section summarizes the accident data for the segment of Coe Avenue between Proto Drive and Short Beach Road/Hemingway Avenue and the intersection of Coe Avenue/Hemingway Avenue/Short Beach Road.

**Segment: Coe Avenue – Between Short Beach Road and Proto Drive**

**Table 2.4** summarizes results of the accident analysis on the Coe Avenue segment.

**Table 2.4**
Accident Analysis – Coe Avenue Segment

| | Category | Number |
|---|---|---|
| Accident Type | Rear End | 3 |
| | Turning Maneuver | 5 |
| | Backing | 1 |
| | Sideswipe | 2 |
| | Fixed Object | 1 |
| | Angle | 1 |
| | **TOTAL** | **13** |
| Road Surface | Dry | 11 |
| | Wet | 1 |
| | Snow/Slush | 1 |
| | **TOTAL** | **13** |
| Accident Severity | Injury | 5 |
| | Property Damage Only | 8 |
| | **TOTAL** | **13** |

As indicated in the above table, a total of 13 accidents were reported on the Coe Avenue segment over the most recent three year period. Of the 13 accidents, the predominant types were collisions resulting from improper turning maneuvers (approximately 38 percent) and rear-end collisions (approximately 23 percent). Of the 13 accidents, five (approximately 38 percent) resulted in a personal injury, the remainder of accidents resulted in property damage only.

**Intersection: Coe Avenue/Hemingway Avenue/Short Beach Road**

**Table 2.5** summarizes results of the accident analysis at the Coe Avenue/Hemingway Avenue/Short Beach Road intersection.

**Table 2.5**
Accident Analysis – Coe Avenue/Hemingway Avenue/Short Beach Road Intersection

| | Category | Number |
|---|---|---|
| Accident Type | Rear End | 15 |
| | Turning Maneuver | 7 |
| | Sideswipe | 1 |
| | Fixed Object | 1 |
| | **TOTAL** | **24** |
| Road Surface | Dry | 16 |
| | Wet | 5 |
| | Ice | 1 |
| | Unknown | 2 |
| | **TOTAL** | **24** |
| Accident Severity | Injury | 4 |
| | Property Damage Only | 20 |
| | **TOTAL** | **24** |

As indicated in the above table, a total of 24 accidents were reported at the Coe Avenue/Hemingway Avenue/Short Beach Road intersection over the most recent three year period. Of the 24 accidents, the predominant type was rear end collisions (approximately 63 percent). Of the 24 accidents, four (approximately 17 percent) resulted in a personal injury, the remainder of accidents resulted in property damage only

## 2.4 *Environmental Conditions*

The project area is situated in the Town of East Haven near its western border with the City of New Haven in a highly developed area that is primarily comprised of industrial, commercial and retail properties and utilities. The East Haven Industrial Park abuts the site to the south and to the northwest is Tweed-New Haven Airport. Undeveloped areas surrounding the Site include inland wetlands, tidal wetlands, coastal waters, drainage channels and other coastal resources. The project area is located in the 100 year floodplain of Long Island Sound (elevation 10.7 NGVD).

Stormwater from the project area flows either west to Morris Creek or east to Tuttle Brook. Both watercourses are tidal estuaries and flow south to Long Island Sound. Large areas of these estuaries are degraded wetlands. The dominant vegetation in these estuaries is Phragmites australis (common reed), an invasive weedy species of limited value to wildlife that is associated with a degraded wetland environment.

The degraded condition of the wetlands is believed to be caused by constriction of the natural flow of tidal waters due to construction of roads, culverts, tidal gates, fill materials or other manmade interventions that altered or restricted the natural flow of tidal waters and prevents saltwater from

inundating upstream wetland areas. Prior to these interventions the wetland areas were reportedly dominated by Spartina alternaflora and Spartina patens, both indigenous tidal wetland plant species. The lack of adequate saltwater inundation caused the Spartina grasses to die and allowed Phragmites, which tolerates low salinity, to be the dominant species. According to several environmental studies of the area, the degraded Phragmites-dominated wetland system is extremely limited in terms of functions and values and provides little value to wildlife.

The mapping used in this effort was obtained from available sources such as Department of Energy and Environmental Protection (DEEP).

**Wetlands**

The project area is impacted by wetlands to the west of Coe Avenue and north of Proto Drive as shown in **Figure 2.2**. Field reviews conducted by various members of the project team indicate that the areas labeled "water feature" should be classified as wetlands.

**Flood Zone**

The 100 year flood zone is shown in **Figure 2.3**. As shown in the figure, the majority of the project area lies within the 100 year flood zone associated with Long Island Sound.

**Soil Classes**

The project area has poorly drained soils in several locations due to wetlands as shown in **Figure 2.4**.

# 3 REALIGNMENT OF PROTO DRIVE

This chapter discusses the alternatives reviewed for the possible realignment of Proto Drive and the preferred option selected by Town officials.

## 3.1 *Development of Conceptual Alternatives*

A set of conceptual alternatives associated with the realignment of Proto Drive were developed for review by Town officials. Based on this review and discussions with Town officials, these concepts were refined and depicted on available GIS mapping. **Figures 3.1** through **3.4** illustrate the concept-level sketches of these alternatives. As shown in the figures, all four alternatives required the relocation of the intersection of Proto Drive and Coe Avenue to the north of the vacant, town-owned building that is situated at the northwest corner of the existing intersection of Proto Drive and Coe Avenue.

Each conceptual alternative shows a variation in the roadway alignment between the starting point on Proto Drive and the ending point at the intersection with Coe Avenue. Since these alternatives shift Proto Drive to the west, they create additional development opportunities for the town on the east side of Proto Drive; however, most of the land west of the current alignment of Proto Drive is believed to be tidal wetlands, accordingly, the reconstruction of the street will result in direct impacts to wetlands and watercourses associated with Morris Creek.

## 3.2 *Evaluation Criteria*

The following evaluation criteria were selected in discussions with the town and the SCRCOG for comparing and evaluating the conceptual alternative road alignments.

- **Development Potential** – how can parcel dimensions be maximized?
- **Environmental Impacts** – how can environmental impacts be minimized?

The evaluation criteria, in conjunction with information in the decision matrix detailed below, were used to assist in developing and refining conceptual sketches of the four potential realignments of Proto Drive.

## 3.3 *Decision Matrix*

To assist in the decision-making process to identify the most viable alternative, a matrix was created to tabulate and assess the various benefits and negative impacts associated with each of the four alternatives considered (refer to **Table 3.1**. Three indicators aligned with the above-mentioned criteria were identified, including:

- **Length of New Roadway** – Assessed for total estimated cost
- **Development Area Gain** – Assessed for acreage that would be "opened" for development on/adjacent to the site
- **Potential Impact to Wetlands** – Assessed for potential acreage that would be disturbed and likely need to be mitigated

As shown in **Table 3.1,** the methodology developed to assess and rank the Conceptual Alternatives factors the relative cost of constructing the various realignment options and the relative impacts that each alignment option has on wetland resources. Table 3.1 tabulates the statistics of each of the three indicators listed above (refer to Columns 1, 2 and 3) and depicts the methodology developed to derive the final score (shown in the rightmost column). The final score is the product of ratios that reflect the expected road costs relative to the development area gained and the area of potential impacts to wetlands relative to the area if development gained. Following is a step-by-step explanation of this methodology.

The cost impact is presented relative to the area of potential new development that would be gained. This is determined by dividing the roadway cost (Col. 4) by the development gain (Col. 2) to derive the cost per acre of development gained (Column 5). The resulting ratios for each alternative were then converted to a "Cost Factor" (Col. 7) by comparing each alternative to a reference case; the reference case is the least costly (per development acre gained) of the four Alternatives (Alternative 4 in this analysis). Therefore, Alternative 4 is established as the Reference Case and assigned a value of 1.0; the Cost Factors for the remaining three alternatives were determined by dividing the respective cost per acre of development gained (Col. 5) by the Reference Case cost per acre of development gained or the relative cost of the Reference Case (highlighted cell of Col. 5).

The wetland impact is also presented relative to development gain. This is determined by dividing the area of wetland impact (Col. 3) by the area of development gained (Col. 2) to derive the ratio of wetland impact per acre of development gain (Col. 6). The resulting ratios for each alternative were then converted to a "Wetland Disruption Factor" (Col. 8) by comparing each alternative to a reference case; the reference case is the least wetland impacting (per development acre gained) of the four Alternatives (Alternative 1 in this analysis). Therefore, Alternative 1 is established as the Reference Case and assigned a value of 1.0; the Wetland Disruption Factors for the remaining three alternatives were determined by dividing the respective ratio of wetland impact and development gained (Col. 6) by the Reference Case ratio of wetland impact and development gained or the relative impact of the Reference Case (highlighted cell of Col. 6).

To determine the final "Score" of each alternative (rightmost column of Table 3.1), the Cost Factor (Col. 7) is multiplied by the Wetland Disruption Factor (Col. 8). The resulting product is a number

that represents the optimal alternative considering relative development and relative environmental impacts. Since this product is the result of ratios that compare each alternative to a Reference case that is assigned a value of 1.0, the lower the value or score represents a better performing alternative; accordingly, Alternative 1 received the best score and is ranked first, Alternative 4 is ranked second, Alternative 2 is ranked third, and Alternative 3 received the lowest score and is ranked fourth.

**Table 3.1**
Decision Matrix

| Alternative | Column 1 **Length of New Roadway (miles)** | Column 2 **Development Gain (acres)** | Column 3 [(1)] **Wetland Impact (acres)** | Column 4 **Potential Roadway Cost ($1M per mile)** | Column 5 **Roadway Cost per Acre of Development Gained** | Column 6 **Ac. of Wetland Impact per Ac. of Development Gained** | Column 7 **Cost Factor based on Column 5** | Column 8 **Wetland Disruption Factor based on Column 6** | Column 7 x Column 8 **Score (Rank)** |
|---|---|---|---|---|---|---|---|---|---|
| Alternative 1 | 0.11 | 1.12 | 0.63 | $109,848 | $98,079 | 0.563 | 1.69 | 1.00 | **1.69 (1)** |
| Alternative 2 | 0.262 | 3.72 | 3.36 | $262,311 | $70,514 | 0.903 | 1.21 | 1.61 | **1.95 (3)** |
| Alternative 3 | 0.303 | 3.35 | 2.90 | $303,030 | $90,457 | 0.866 | 1.55 | 1.54 | **2.39 (4)** |
| Alternative 4 | 0.453 | 7.78 | 7.92 | $452,652 | $58,181 | 1.018 | 1.00 | 1.81 | **1.81 (2)** |

**Note:** (1) Area of wetland impacts estimated from available GIS mapping layers (wetland soils, surface waters) and field observation. Future delineation of wetlands would be required.
**Source:** CDM Smith

Reference Case

This scoring methodology reveals that Alternative 1 attained the highest score even though it results in the least amount of development gain because it has the lowest potential wetland impact. Alternative 4 scored the second even though it represents the greatest potential impact to wetlands (and the highest Wetland Disruption Factor) and has the highest absolute cost of road construction (Col. 4) because it results in the greatest gain in development area and because it has the lowest road costs relative to the acreage of potential development that can be gained (Col. 5). .

## 3.4 *Preferred Option*

Based on discussions with Town officials, the preferred alternative or option selected for further consideration based on this study is **Alternative 4**. It should be noted that this option would not require demolition of the vacant, town-owned building at the northwest corner of Proto Drive and Coe Avenue. The rationale for the town's selection is that the gain of development area creates more viable options for redevelopment of the properties located on the southeast offside of the potential Proto Drive realignment and will result in greater square footage of future industrial development, higher increases to the Town's tax base and more potential jobs.

The Town recognizes that there will be a significant impact to wetlands under this alternative and considerable environmental analysis and permitting requirements with local, state and federal review agencies will need to be conducted. The Town also understands that more detailed studies of the location, characteristics and functional values of environmental resources, analysis of the wetland impacts and determination of road construction and environmental mitigation costs, may require the Town to reconsider the realignment of Proto Drive.

# 4 HEMINGWAY AVENUE – COE AVENUE CONCEPT PLAN

This chapter discusses the design elements of the existing Hemingway Avenue/Coe Avenue corridor. A conceptual plan and profile was developed to alleviate flooding issues based upon available floodplain and hydrological data and other engineering documentation and discussions with the Town officials.

As discussed in Section 2 of this report, Hemingway and Coe Avenues are principal arterials serving the southern areas of the Town of East Haven as well as portions of the Town of Branford. Regional arterials serve many functions; therefore, the design of arterial routes in East Haven must address numerous considerations including highway and pedestrian safety, maintenance of vehicular access to broad areas of the shoreline, supporting adjacent economic activity that is vital to the regional economy, and facilitating access to adjoining properties and businesses. In addition, and critical to the safety of shoreline residents, these arterials provide the principal routes of evacuation in the event of a hurricane or other coastal storm. Therefore, an important objective of this study is to determine the maximum height that the roadways can be elevated to raise the travel lanes as close as possible to the elevation of floodwaters (i.e. the 100-year flood elevations associated with the floodplain of Long Island Sound) without negatively affecting access or causing undue grading impacts to adjacent properties.

## 4.1 *Existing Survey*

A detailed survey was conducted on Hemingway Avenue/Coe Avenue between Short Beach Road and Proto Drive with the following limits - 850 feet on Coe Avenue plus 250 feet on either direction of the intersection for a total of 1,350 linear feet. The survey included 100 feet on side roads and mapped the following elements:

- **Horizontal Control** – survey baseline and control points
- **Vertical Control** – Spot elevations, contours, elevations of crown line, gutter line, top of curb, front and back of walk, and header elevations of driveway aprons.
- **Property Line information** – based on parcel data obtained from the Town.
- **Field Survey** - The topographic survey of edges of road, sidewalks, and other pavements, top and bottom of curbs, spot elevations, PC and PT points, bridge/culvert crossing locations, light poles, surface utilities, and signage.
- **Drainage** - Drainage structures, inverts, flow lines, and pipe sizes.
- **Utilities** - Underground utilities based on field observation, field notes, and mapping provided by various utility companies.

## 4.2 *Existing Plan and Profile*

The following are few of the key findings of the existing conditions of Hemingway Avenue/Coe Avenue:

- **Horizontal Alignment (plan view)** – Coe Avenue has a straight section for a predominant portion of this roadway segment. The travel lanes are 11-12 feet wide with approximately 2 foot shoulders on either side. Roadway crown lies on the centerline of Coe Avenue.
- **Vertical Control (profile view)** – The existing profile of Coe Avenue varies between the lowest point at EL 4.12 and the highest point at EL 6.99. There are three low points on Coe Avenue within the project area – around Station 12+00 – EL 5.85, around Station 18+75 – EL 4.58, and around Station 23+00 – EL 4.12.
- **Property Line information** – Based on the property line information obtained from the Assessor's maps of the Town of East Haven, the right of way on Coe Avenue is approximately 80 feet.
- **Drainage** - Drainage structures exist along Coe Avenue on both sides of the roadway. Based on field observations, the roadway experiences ponding during major rain events and it appears that the current drainage system cannot accommodate the run-off during these events.
- **Utilities** – Overhead utilities (i.e. power lines) exist on the west side of the roadway. Sanitary and gas lines run on the east side of the roadway.

## 4.3 *Conceptual Plan and Profile*

The conceptual plan and profile (included in the appendix) is based on the following design assumptions:

- The 100-year flood elevation is at EL 10.7[1]. Due to grade impacts that would be created on adjacent commercial and industrial properties along the corridor, it was determined that the maximum amount that Coe Avenue could be elevated at Station 23+00 (Intersection of Short Beach Road/Plaza Drive) is 2.0 ft. This would result in an elevation of EL 6.12 at the center of the intersection, well below the 100-year flood elevation but a great improvement over existing conditions

[1] Flood Insurance Study, Town of East Haven, Federal Emergency Management Agency, January 2003.

- Maintain the remaining existing low points on Coe Avenue (i.e. Station 12+00 and Station 18+75). Based on the conceptual review, these low points could be raised in elevation based on further discussions with the Connecticut Department of Transportation staff.

- Proposed drainage is conceptual in nature and shows suggestions for relocation or new catch basins/manholes based on available data. Detailed drainage analysis was not conducted as part of this effort.

- The design speed on Coe Avenue is 45 miles per hour (however, the posted speed limit will be maintained at the current limit of 35 miles per hour).

Based on these design assumptions and criteria, cross-sections for the conceptual plan were prepared at 20 foot intervals on Coe Avenue. The design assumptions were discussed with the Town Engineer and agreed upon at the meeting held on June 15, 2012. The concept plan and profile is a preliminary effort and could be adjusted as this project moves into preliminary design.

## 4.4 *Conceptual Cost Estimate*

A conceptual order of magnitude cost estimate was developed based on the concept plan. Table 4.1 provides a breakdown of the cost by design elements.

**Table 4.1**
**Conceptual Cost Estimate**

| **Description** | **Cost** |
|---|---|
| Roadway Quantities | $724,500 |
| Drainage Quantities | $225,500 |
| Traffic Quantities | $150,000 |
| **Subtotal A (Roadway + Traffic + Drainage)** | **$1,100,00** |
| Lump Sum Items | |
| Mobilization (7.5% of subtotal) | $82,500 |
| Maintenance and Protection of Traffic (4% of subtotal) | $44,000 |
| **Subtotal B (Lump Sum Items)** | **$126,500** |
| Engineering Percentages | |
| Incidentals (25%) | $306,625 |
| Contingencies (10%) | $122,650 |
| **Subtotal C (Engineering Percentages)** | **$429,275** |
| **TOTAL CONCEPTUAL COST (A+B+C)** | **$1,655,775** |

# 5 NEXT STEPS

This chapter provides a series of next steps for the town to undertake such as discussions with reviewing agencies, wetland mapping, and identification of permits.

## *5.1 Meeting with Review Agencies*

The Town would require meetings with reviewing agencies before advancing final design of the realignment of Proto Drive and the re-design of Cove Avenue. Regarding the Proto Drive realignment, it is our understanding that the Town has initiated discussions with the U.S. Army Corps of Engineers. The Town should also meet with property owners along Proto Drive i.e. Calabro Cheese and Town Fair Tire. The re-design of Coe Avenue will also require discussions with the Connecticut Department of Transportation staff.

## *5.2 Wetland and Stormwater Management*

To compensate for the environmental impacts that would result from the placement of fill in the wetlands for the proposed relocation of the northerly portion of Proto Drive, a wetland restoration plan will be required (potentially for an area of two to three times the area of wetlands that are proposed to be impacted). The restoration plan could include modifying the hydrological systems in the vicinity of the project through a combination of all or some of the following strategies: enhancing tidal creeks and channels to allow for improved tidal flows; removing Phragmites vegetation within specified areas to allow for the reintroduction of indigenous species and the creation of more diverse habitats for native wildlife; preventing of the reestablishment of Phragmites; dredging or removal of fill within limited areas of wetlands to result in an increase in wetlands; and undertaking a 5 year program to monitor the tidal wetland restoration efforts to ensure that the intended results are being achieved and to determine if modifications to the program are necessary to attain the desired results.

The placement of fill for the construction of the relocation of Proto Drive will also require hydraulic modeling and engineering analysis to demonstrate that the activity will not increase the 10 year and 100 year water surface elevation over existing conditions or diminish the flood storage capacity or flood control value of the floodplain. This analysis may indicate the need to excavate historic fills elsewhere in the Morris Creek/Tuttle Brook watersheds to compensate for loss of flood storage capacity.

The proposed construction of new or relocated impervious surfacing associated with the relocation of Proto Drive will also trigger the need to prepare a stormwater management plan since the stormwater discharges or surface runoff from the new pavement will be discharged into a tidal wetland. The CT Stormwater Quality Manual requires that the first inch of runoff from impervious surfaces that discharge into tidal waters be retained to reduce potential negative impacts of road surface pollutants to natural systems. This retention requirement will necessitate the construction of stormwater detention basins or holding ponds.

## *5.3 List of Permits and Agencies*

A preliminary list of permits and the agency involved is provided in the appendix. The agencies involved are the Town of East Haven, the Connecticut Department of Energy and Environmental Protection (DEEP), the Office of Long Island Sound Programs (OLISP), the U.S. Army Corps of Engineers, the Connecticut Department of Transportation, and others.

# Technical Appendix


CDM Smith

**PROJECT AREA**

FIGURE 1.1


CDM Smith

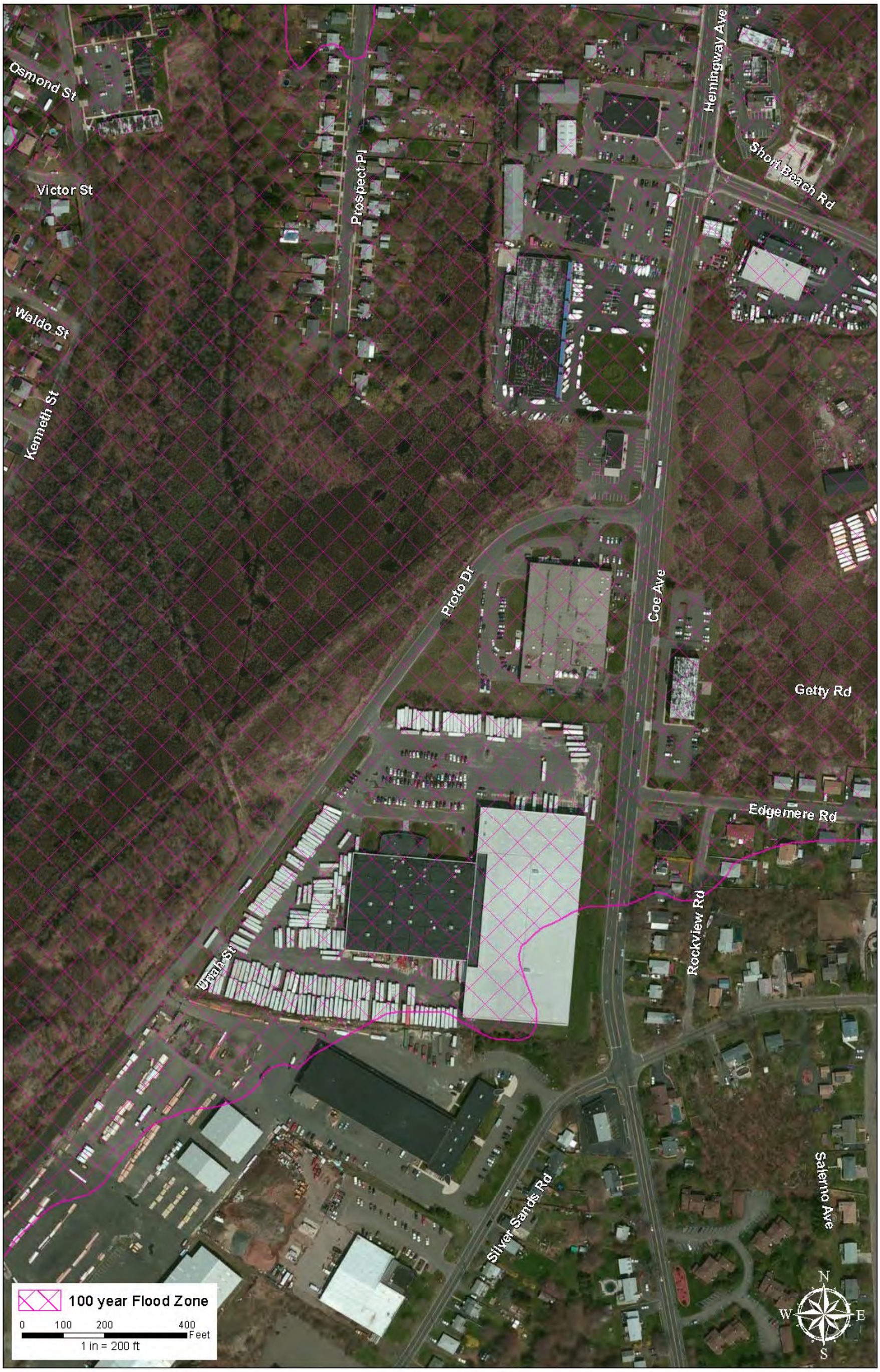
## EXISTING (2012) YRAFFIC VOLUMES

FIGURE 2.1


CDM Smith

**WETLAND MAPPING**

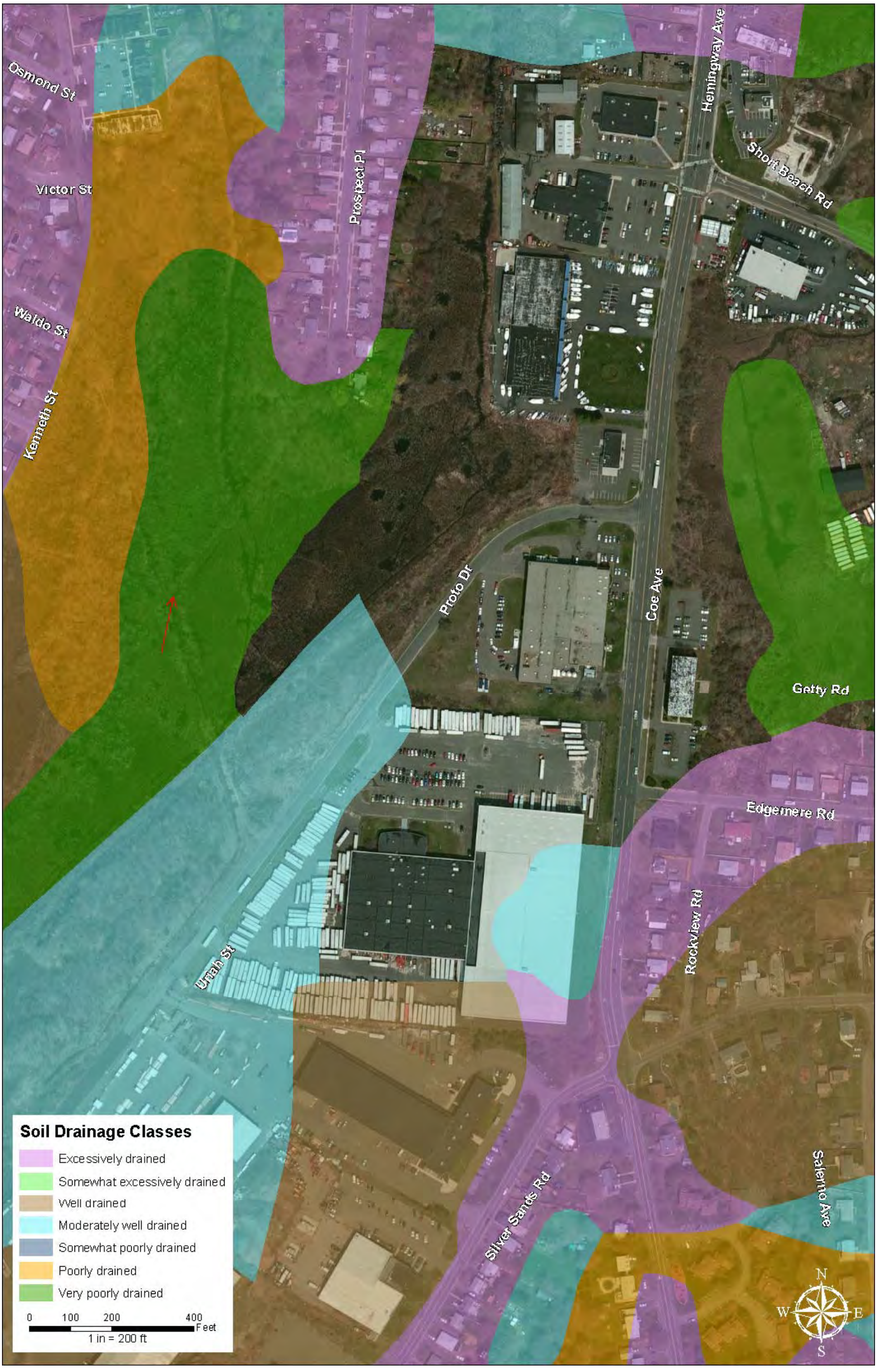
FIGURE 2.2




CDM Smith

## 100 YEAR FLOOD ZONE MAPPING

FIGURE 2.3




CDM Smith

**SOIL CLASSES MAPPING**

FIGURE 2.4

POTENTIAL WETLANDS SOILS
(FIELD OBSERVED)

EXISTING SURFACE WATERS
(GIS BASED)

EXISTING WETLAND SOILS
(GIS BASED)

PROTO DRIVE

COE AVENUE
(SR 337)

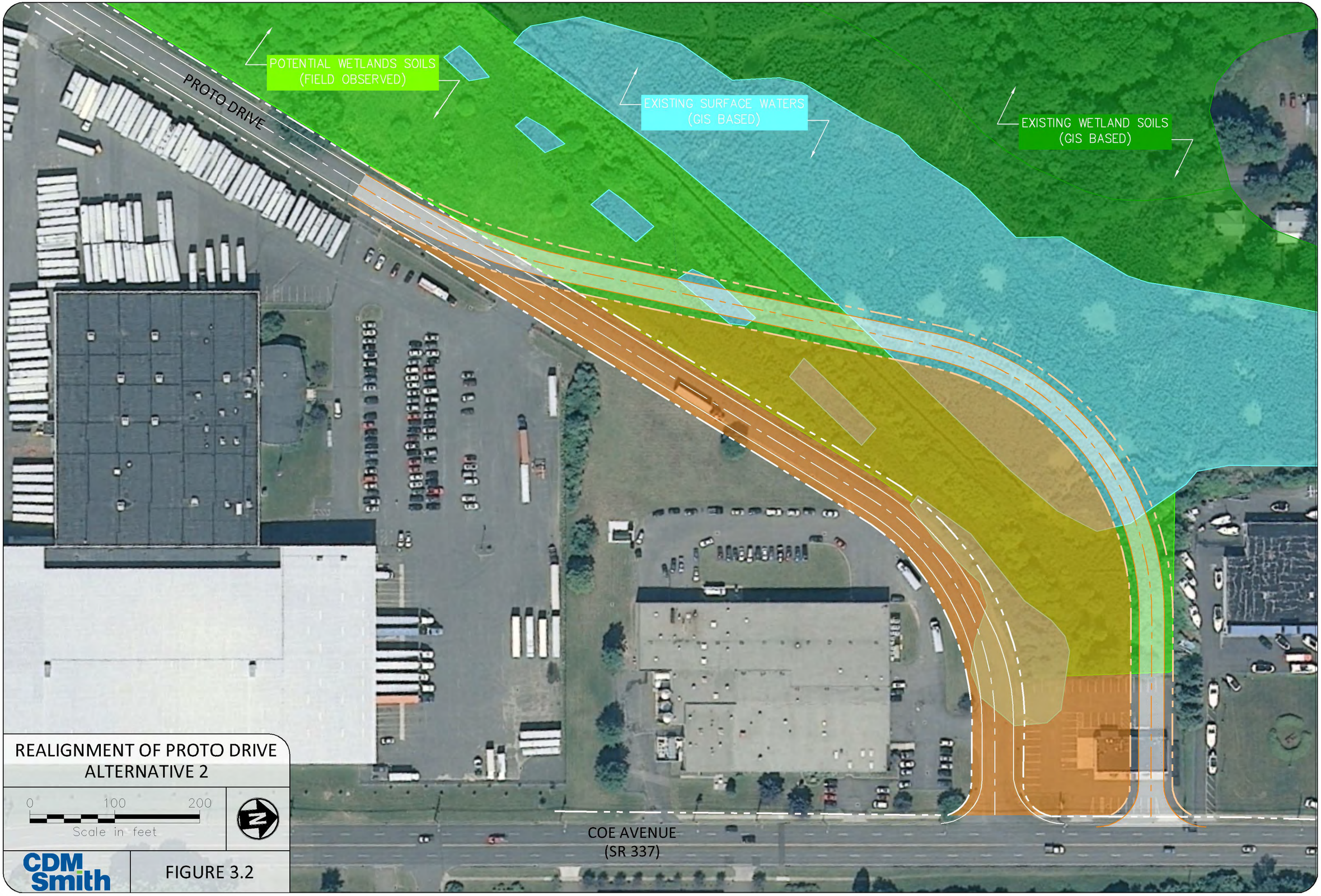
# REALIGNMENT OF PROTO DRIVE
# ALTERNATIVE 1

0 100 200
Scale in feet

N

CDM Smith

FIGURE 3.1



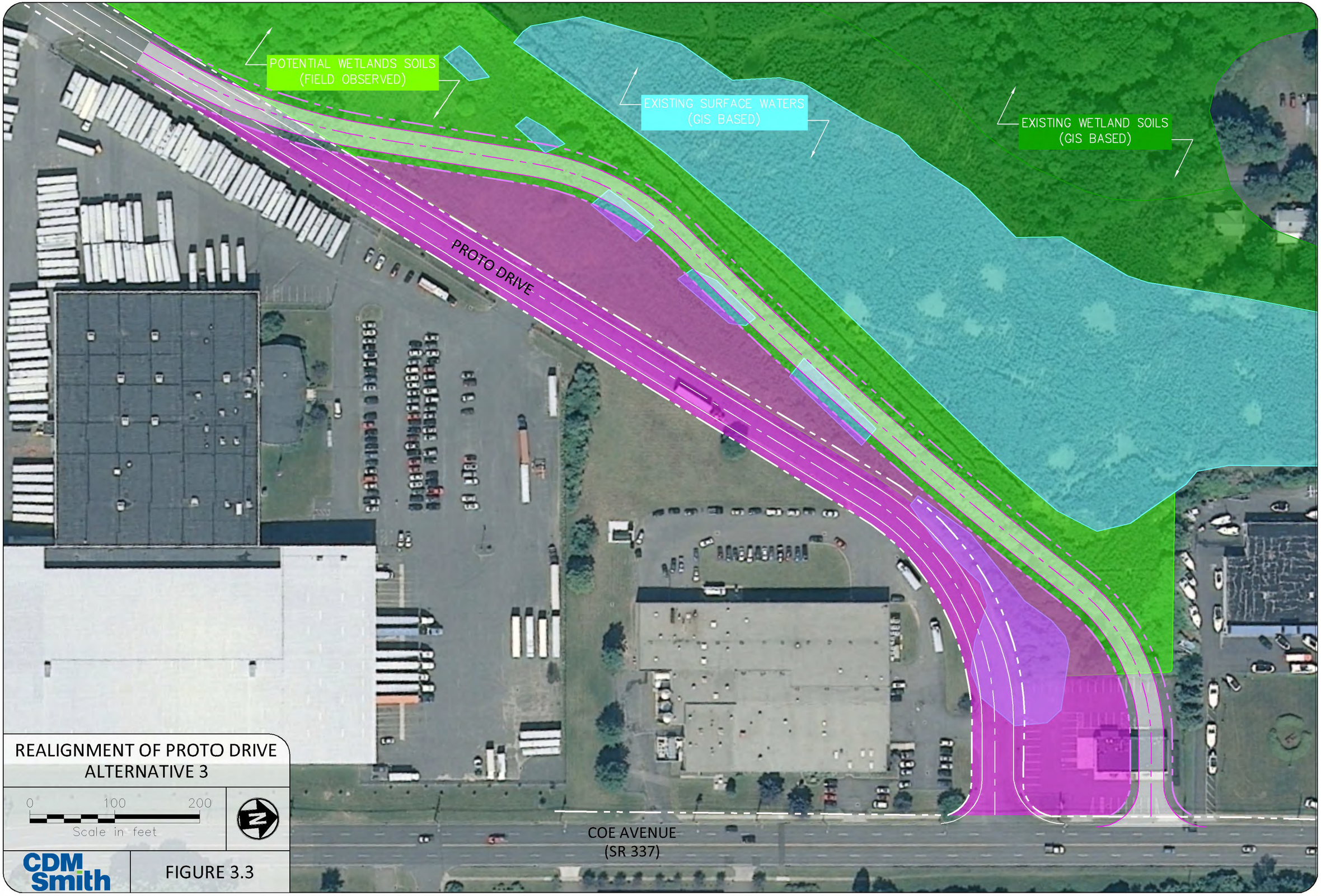

REALIGNMENT OF PROTO DRIVE
ALTERNATIVE 2

0 100 200

Scale in feet

CDM Smith

FIGURE 3.2




REALIGNMENT OF PROTO DRIVE
ALTERNATIVE 3

0 100 200
Scale in feet

CDM Smith

FIGURE 3.3

POTENTIAL WETLANDS SOILS
(FIELD OBSERVED)

PROTO DRIVE

EXISTING WETLAND SOILS
(GIS BASED)

EXISTING SURFACE WATERS
(GIS BASED)

COE AVENUE
(SR 337)

# REALIGNMENT OF PROTO DRIVE
# ALTERNATIVE 4

0 150 300
Scale in feet

N

CDM Smith

FIGURE 3.4

PRELIMINARY
NOT FOR CONSTRUCTION

## GENERAL NOTES:

1. Conceptual plans based on raising the road elevation at the center of the Coe Avenue/Hemingway Avenue/Short Beach Road intersection by 2 feet (EL 4.12’ to EL 6.12’).

2. The road elevation can be raised by at least 1 foot at the low points around stations 12+00 and 18+70 as project moves into design.

3. Conceptual plan can be adjusted in the future based on discussions with the Connecticut Department of Transportation (CTDOT) and other key stakeholders.

4. Proposed drainage is conceptual and shows suggestions for relocation or new catch basins/manholes based on available data. Detailed drainage analysis was not conducted as part of the concept plan.

5. Conceptual plan can be adjusted to address the existing or proposed location of Proto Drive.

| REV. | DATE | DESCRIPTION | SHEET NO. |
|---|---|---|---|
| | | REVISIONS | |

SCALE IN FEET
0 10 20 30 40
SCALE 1:40

DESIGNER: HEIDY J. BRENES
DRAFTER: HEIDY J. BRENES
CHECKED BY: MICHAEL SNYDER
DATE CHECKED: 07/2012

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
APPROVED BY: DATE:

PROJECT TITLE: HEMINGWAY - COE AVENUE STUDY
CADD: x PLOTTED: JULY 2012

TOWN: EAST HAVEN
DRAWING TITLE: GENERAL NOTES

PROJECT NO.: -
DRAWING NO.: PLN-1
SHEET NO.: 1 OF 21

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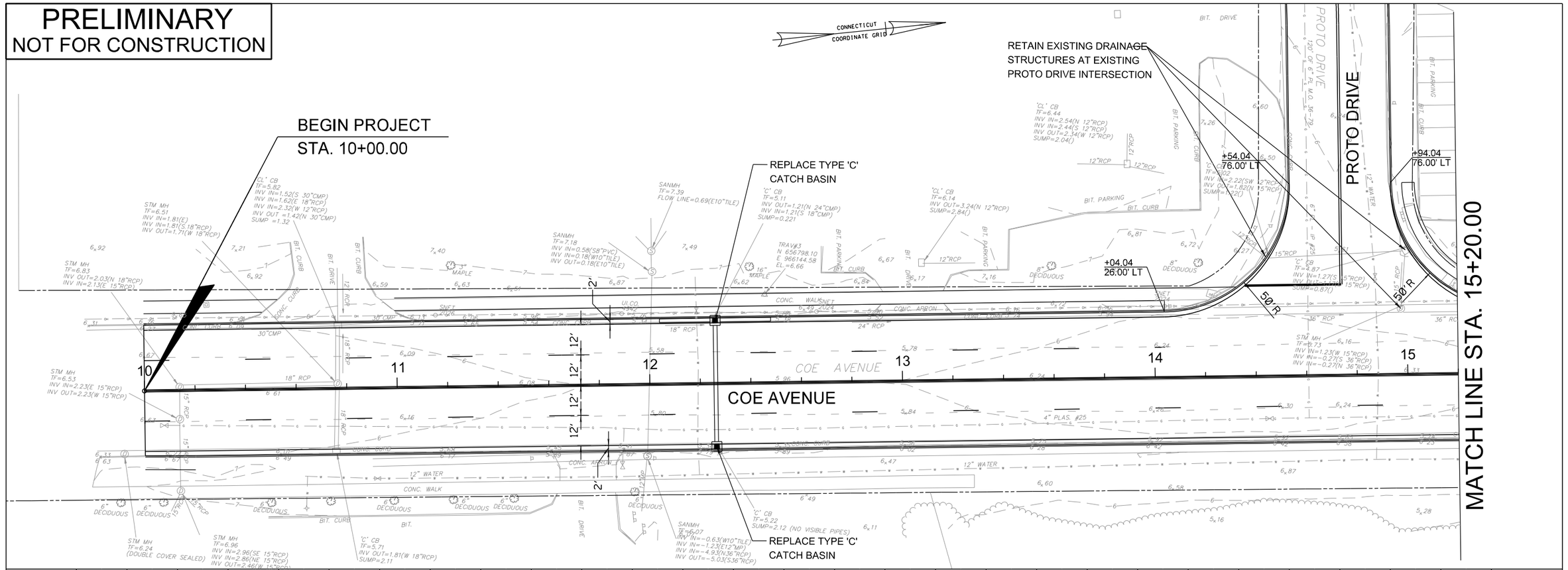


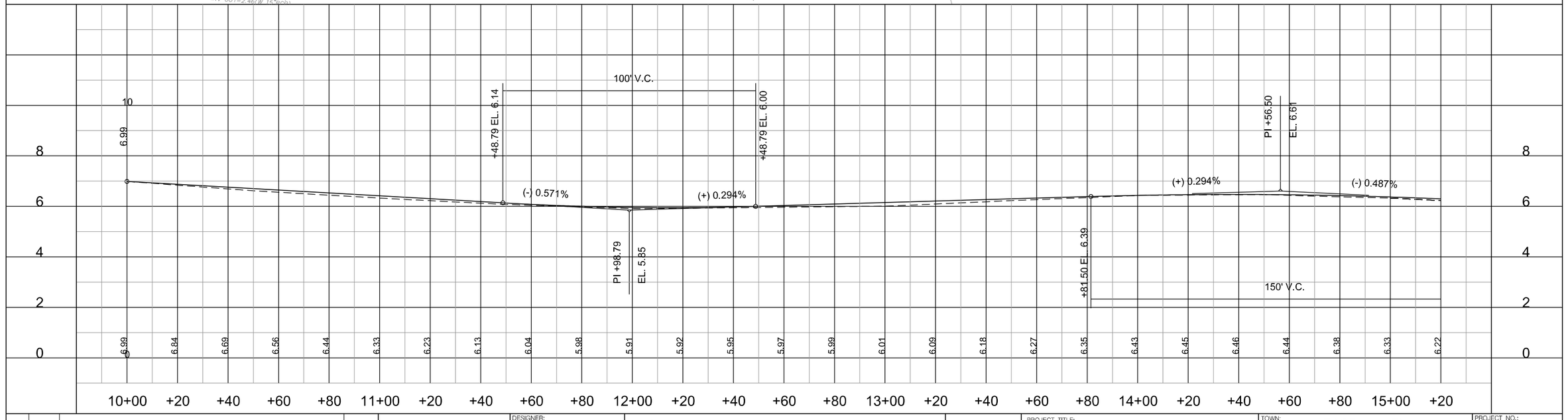


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ENGINEER: CDM SMITH
APPROVED BY: DATE:

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CADD: x PLOTTED: JULY 2012

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TOWN: EAST HAVEN

DRAWING TITLE: CONCEPTUAL PLAN STA. 10+00 TO STA. 15+20

PROJECT NO.: -

DRAWING NO.: PLN-2

SHEET NO.: 2 OF 21

# PRELIMINARY
NOT FOR CONSTRUCTION

CONNECTICUT COORDINATE GRID

MATCH LINE STA. 15+20.00

MATCH LINE STA. 20+40.00

PROTO DRIVE
POTENTIAL REALIGNMENT

15' 15'

50'R

50'R

REMOVE CATCH BASIN
CONVERT CATCH BASIN TO MANHOLE
NEW TYPE 'C' CATCH BASIN

REPLACE TYPE 'C-L' CATCH BASIN

NEW TYPE 'C' CATCH BASIN
REMOVE CATCH BASIN

EXISTING DRIVEWAY TO BE ADJUSTED BASED ON POTENTIAL REALIGNMENT OF PROTO DRIVE

REPLACE MANHOLE

REPLACE TYPE 'C' DOUBLE CATCH BASIN

RETAIN

NEW TYPE 'C' CATCH BASIN

+38.90
75.79' LT

+58.90
76.21' LT

+44.04
26.00' LT

+88.90
26.00' LT

CONNECT TO EXISTING 36" RCP

+18.90
26.00' LT

PI STA. 19+34.87

16 17 18 19 20

COE AVENUE

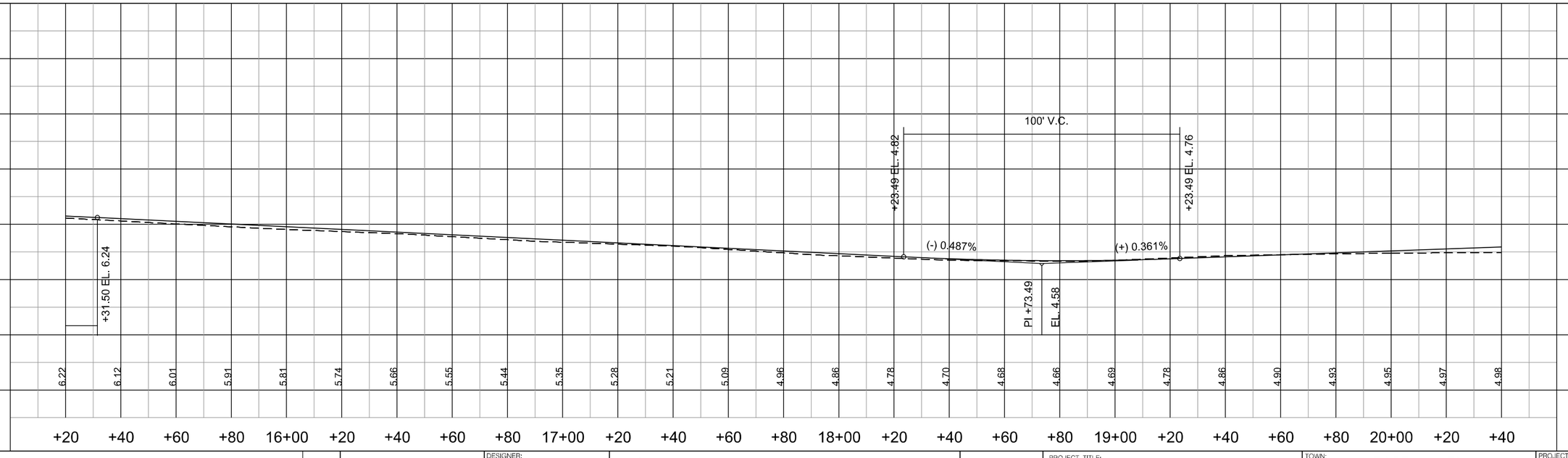
PC STA. 17+37.09

2' 12' 12' 12' 12' 2'

REPLACE TYPE 'C' CATCH BASIN

REPLACE TYPE 'C' DOUBLE CATCH BASIN

NEW TYPE 'C' CATCH BASIN

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DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
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PROJECT TITLE: HEMINGWAY - COE AVENUE STUDY

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$DATE$ $TIME$ $FILE$

TOWN: EAST HAVEN

DRAWING TITLE: CONCEPTUAL PLAN STA. 15+20 TO STA. 20+40

PROJECT NO.: -

DRAWING NO.: PLN-3

SHEET NO.: 3 OF 21

MATCH LINE STA. 20+40.00

REPLACE TYPE 'C' CATCH BASIN

REPLACE TYPE 'C-L' CATCH BASIN

NEW MANHOLE
REMOVE TYPE 'C' CATCH BASIN

REPLACE TYPE 'C' CATCH BASIN

REMOVE TYPE 'C' CATCH BASIN

DRAINAGE WILL BE ADJUSTED BASED ON FINAL SIDE ROAD DESIGN

NEW TYPE 'C' CATCH BASINS

REMOVE TYPE 'C' CATCH BASIN

REMOVE TYPE 'C' CATCH BASIN

NEW TYPE 'C-L' CATCH BASIN

NEW MANHOLE

NEW TYPE 'C' CATCH BASIN

CONNECTICUT COORDINATE GRID

+86.07
63.87' LT

+16.70
65.13' LT

+51.19
26.00' LT

+54.39
35.58' LT

+82.92
22.25' RT

+86.73
71.75' RT

+29.05
68.69' RT

PT STA. 21+32.31

POT STA. 25+19.67

LOW POINT SHOWN ON THE DRIVEWA
BE ADJUSTED BASED ON FUTURE DE

REPLACE TYPE 'C' CATCH BASIN

REMOVE TYPE 'C' CATCH BASIN

CONNECT TO EXISTING PIPE
(LOCATION UNKNOWN)

NEW TYPE 'C' CATCH BASIN
RETAIN

REPLACE TYPE 'C' CATCH BASIN

END PROJECT
STA. 25+19.67

DETAIL A

DETAIL A

SHORT BEACH RD

NEW TYPE 'C' CATCH BASIN

NEW TYPE 'C' CATCH BASIN

PRELIMINARY
NOT FOR CONSTRUCTION

PI +00.00
EL. 6.12

(+) 0.361%

(-) 0.849%

RAISE IN ROAD ELEVATION OF 2'

+25.00 EL. 5.85

150' V.C.

+75.00 EL. 5.48

110' V.C.

+08.27 EL. 5.29

(-) 0.849%

(+) 0.396%

PI +53.27
EL. 4.82

+08.27 EL. 5.04

5.08

4.98 4.96 4.95 4.90 4.83 4.77 4.71 4.64 4.61 4.59 4.56 4.42 4.20 4.12 4.14 4.13 4.33 4.47 4.56 4.65 4.74 4.82 4.91 5.00

+40 +60 +80 21+00 +20 +40 +60 +80 22+00 +20 +40 +60 +80 23+00 +20 +40 +60 +80 24+00 +20 +40 +60 +80 25+00

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DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
APPROVED BY: DATE:

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PROJECT TITLE: HEMINGWAY - COE AVENUE STUDY

CADD: x PLOTTED: JULY 2012

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TOWN: EAST HAVEN

DRAWING TITLE: CONSTRUCTION PLAN
STA. 20+40 TO STA. 25+19.75

PROJECT NO.: -

DRAWING NO.: PLN-4

SHEET NO.: 4 OF 21

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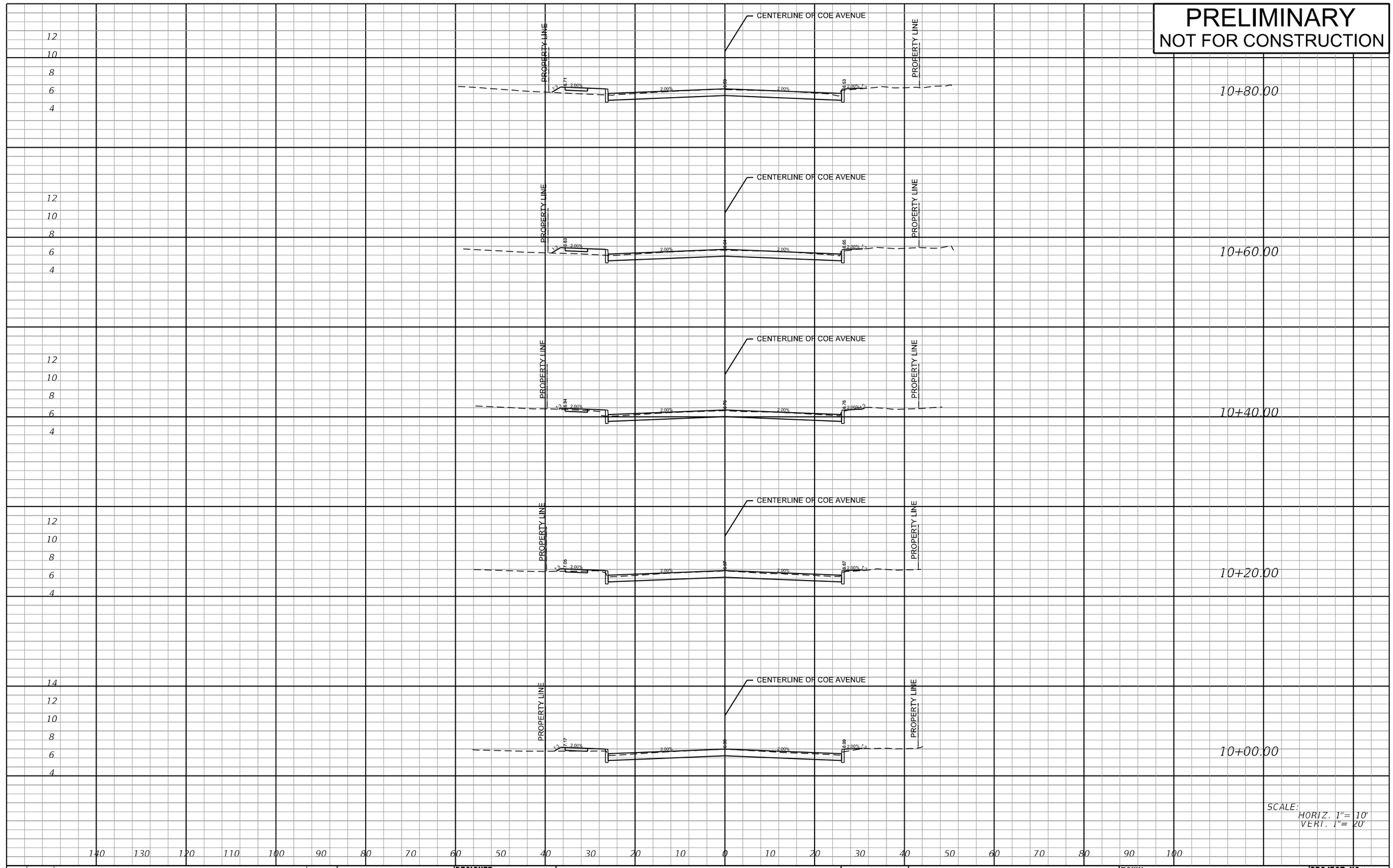


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HEMINGWAY - COE AVENUE STUDY

CADDx | PLOTTED: JULY 2012

TOWN: EAST HAVEN

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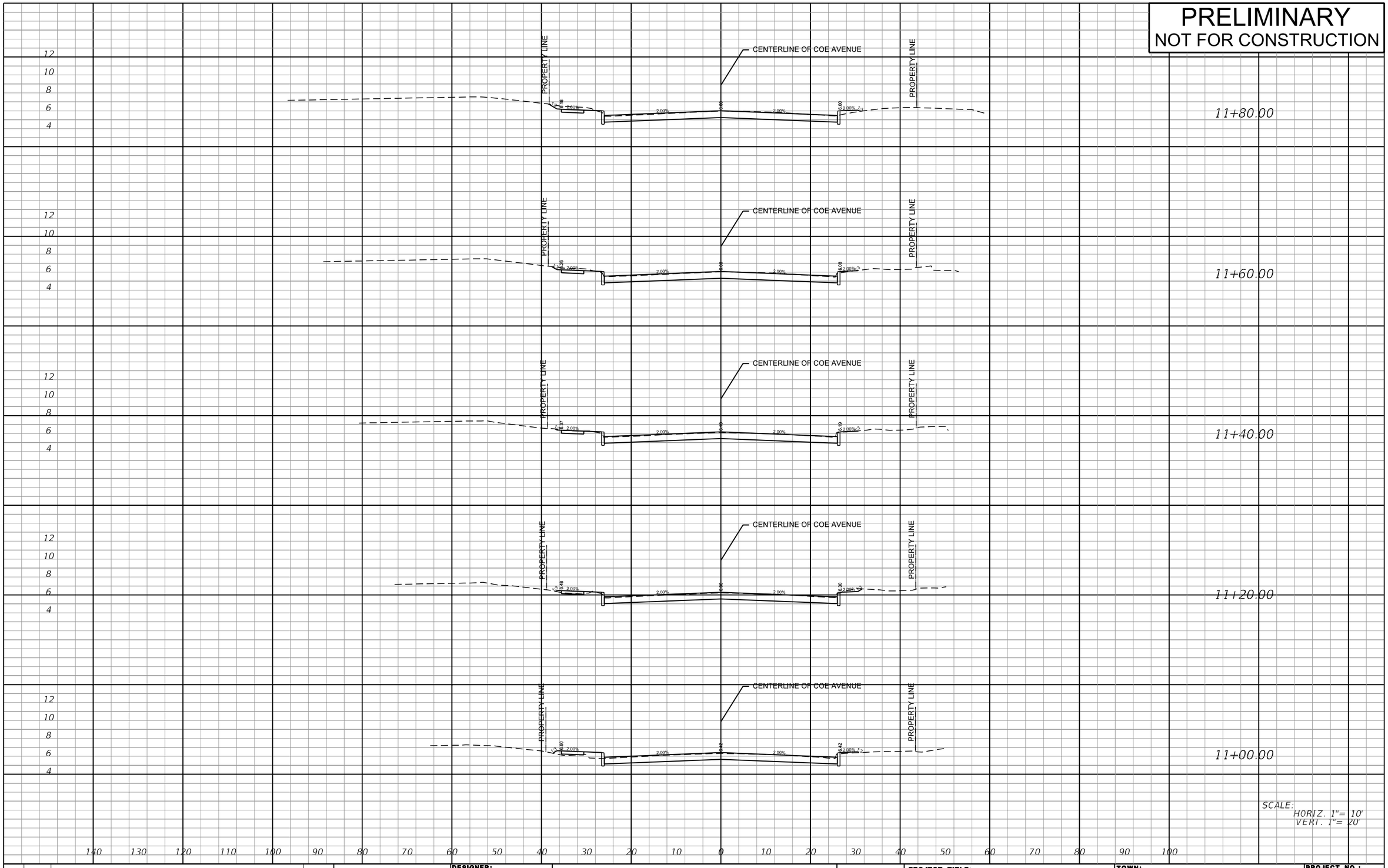


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VERT. 1"= 20'

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CADDx | PLOTTED: JULY 2012

TOWN: EAST HAVEN

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**CROSS SECTIONS**

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SHEET NO.: 6 of 21

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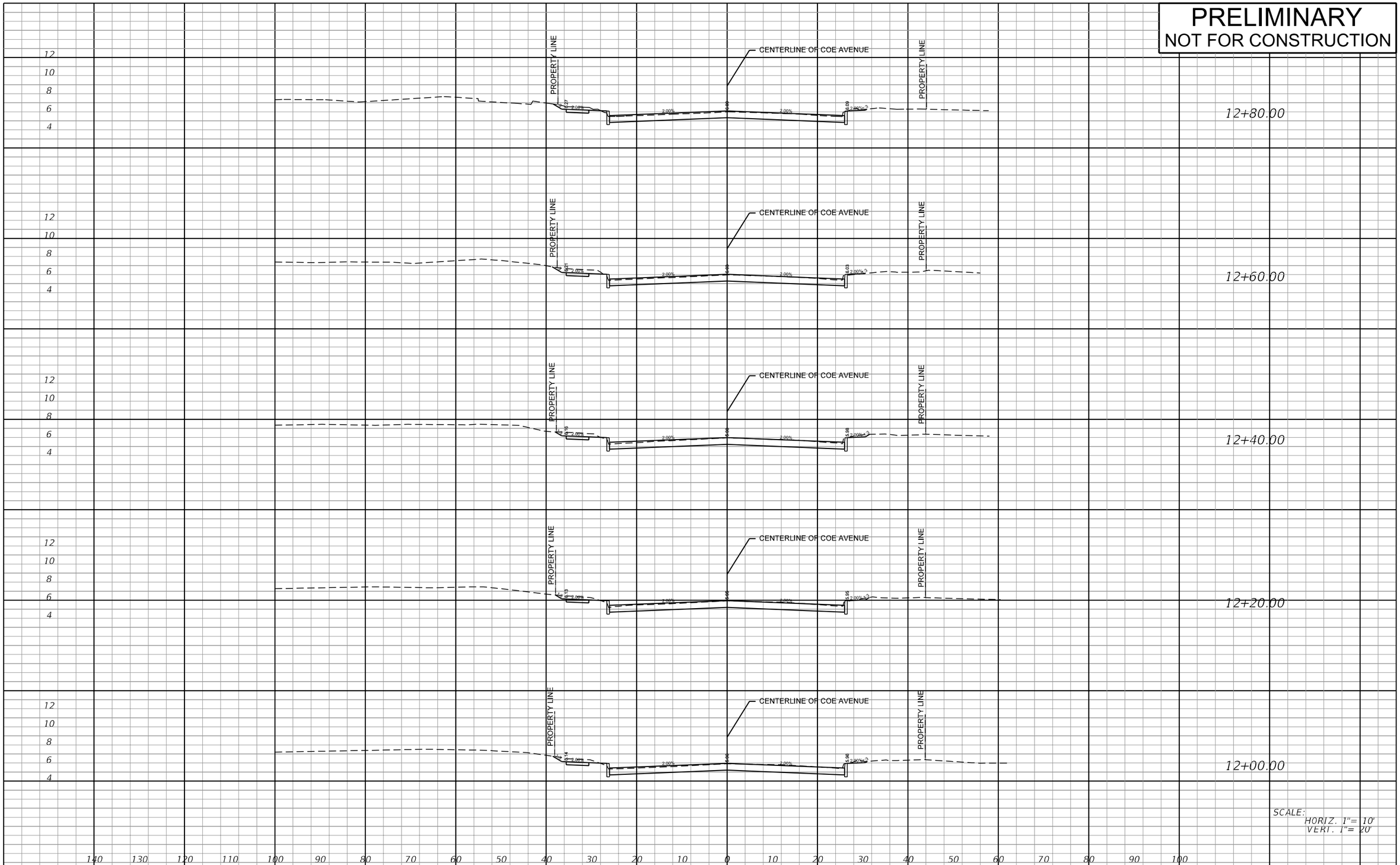


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HEMINGWAY - COE AVENUE STUDY

CADDx | PLOTTED: JULY 2012

TOWN: EAST HAVEN

DRAWING TITLE:
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SHEET NO.: 7 of 21

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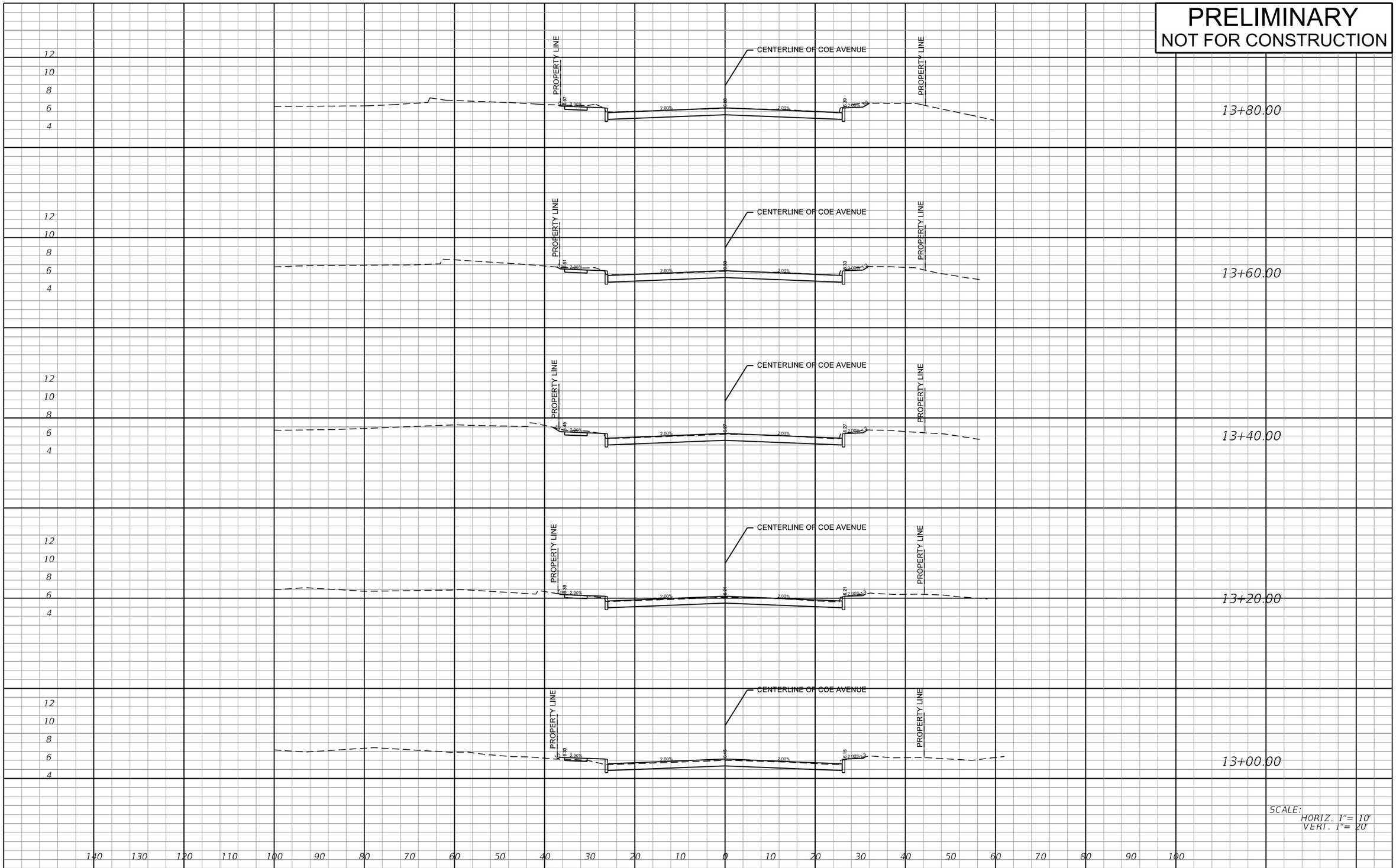


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DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
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PROJECT TITLE:
HEMINGWAY - COE AVENUE STUDY

CADDx | PLOTTED: JULY 2012

TOWN: EAST HAVEN

DRAWING TITLE:
**CROSS SECTIONS**

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SHEET NO.: 8 of 21

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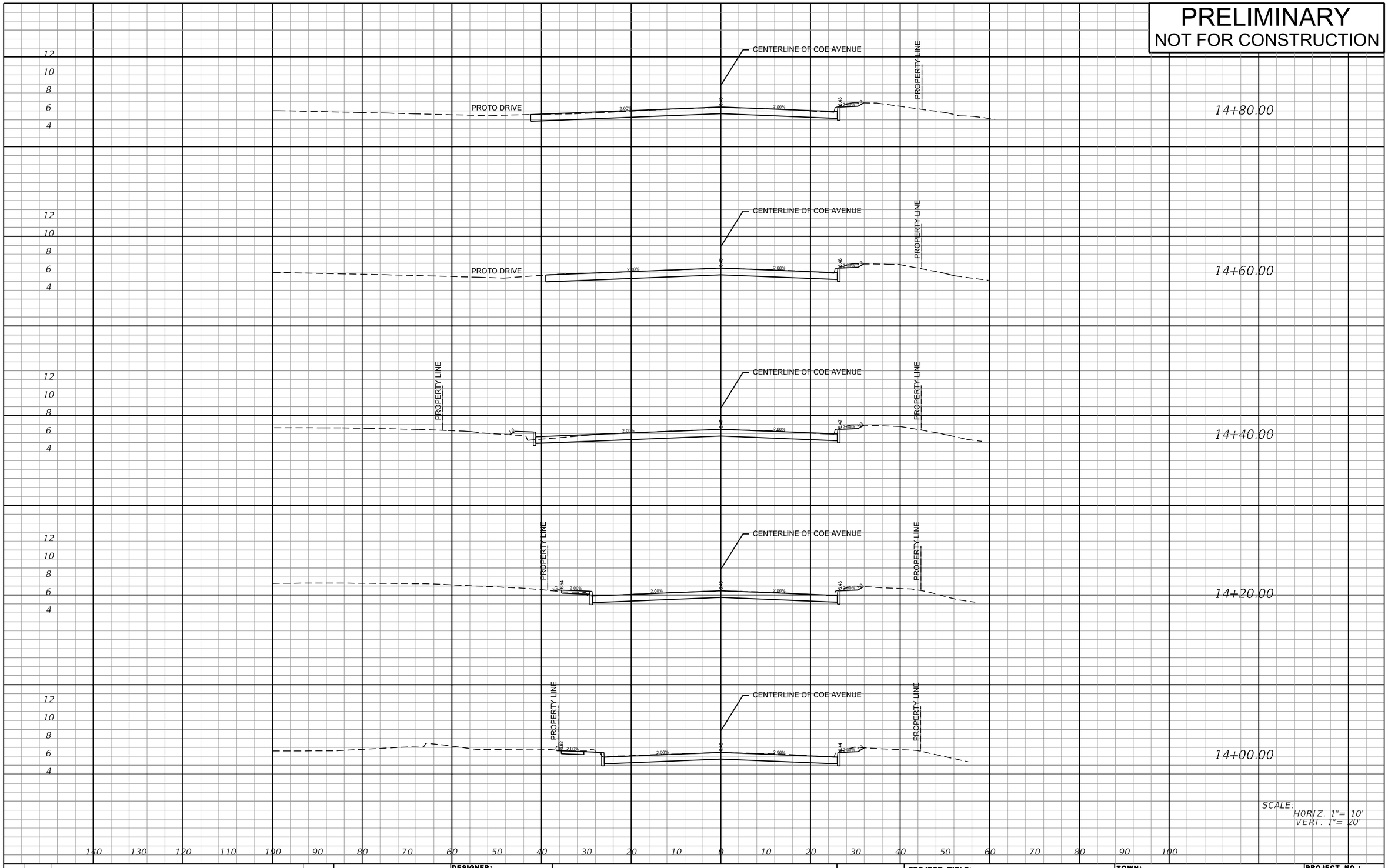
PRELIMINARY
NOT FOR CONSTRUCTION

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DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
APPROVED BY: DATE:

PROJECT TITLE:
HEMINGWAY - COE AVENUE STUDY

CADDx | PLOTTED: JULY 2012

TOWN: EAST HAVEN

DRAWING TITLE:
**CROSS SECTIONS**

PROJECT NO.: -
DRAWING NO.: XS-5
SHEET NO.: 9 of 21

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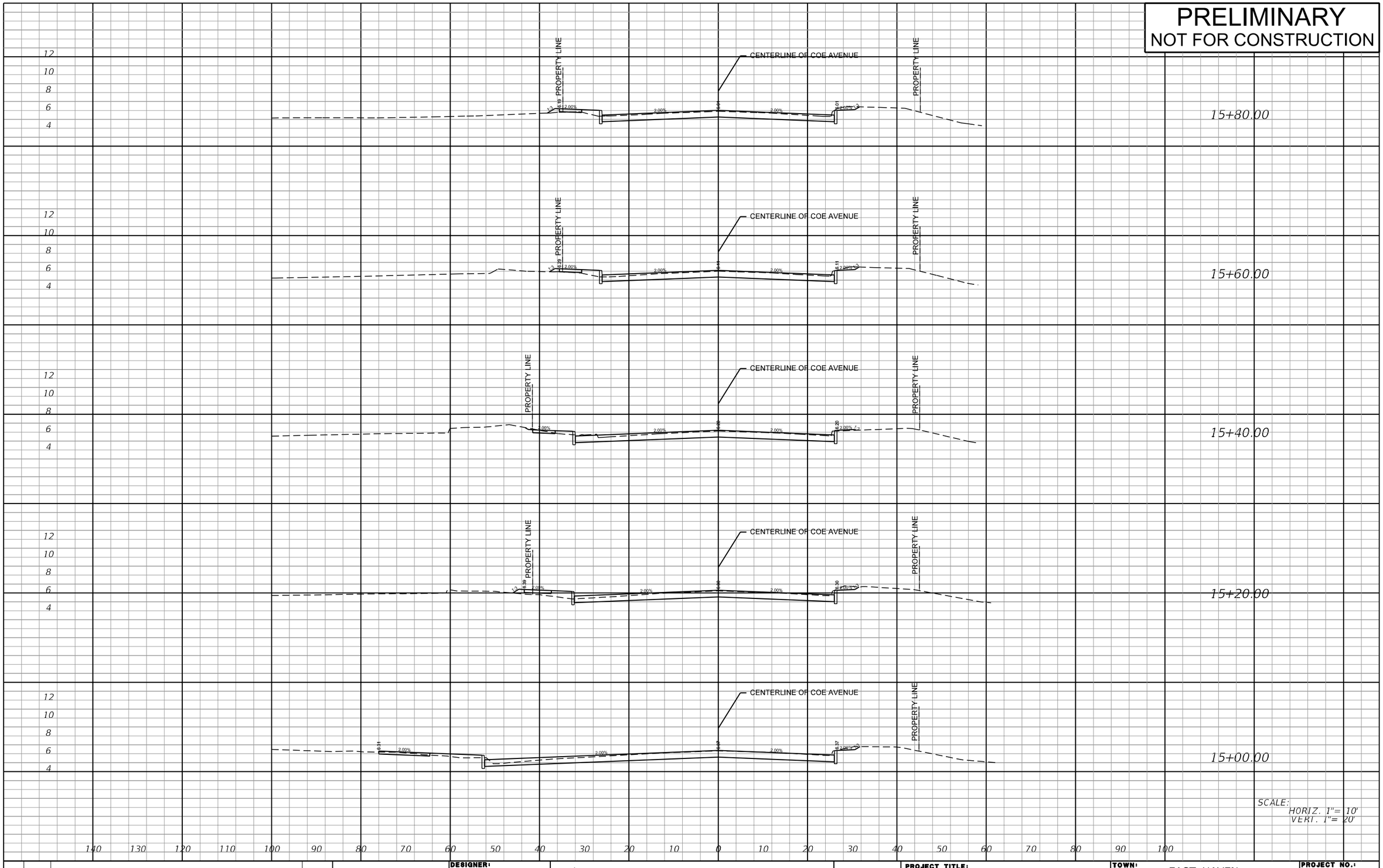
PRELIMINARY
NOT FOR CONSTRUCTION

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HORIZ. 1"= 10'
VERT. 1"= 20'

| REV. | DATE | DESCRIPTION | SHEET NO. |
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| | | REVISIONS | |

SCALE IN FEET
0 10 20
SCALE 1:20

DESIGNER: HEIDY J. BRENES
DRAFTER: HEIDY J. BRENES
CHECKED BY: MICHAEL SNYDER
DATE CHECKED: 07/2012

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
APPROVED BY: DATE:

PROJECT TITLE:
HEMINGWAY - COE AVENUE STUDY

CADDx | PLOTTED: JULY 2012

$USER$ $DATE$ $TIME$ $FILE$

TOWN: EAST HAVEN

DRAWING TITLE:
**CROSS SECTIONS**

PROJECT NO.: -
DRAWING NO.: XS-6
SHEET NO.: 10 of 21

PRELIMINARY
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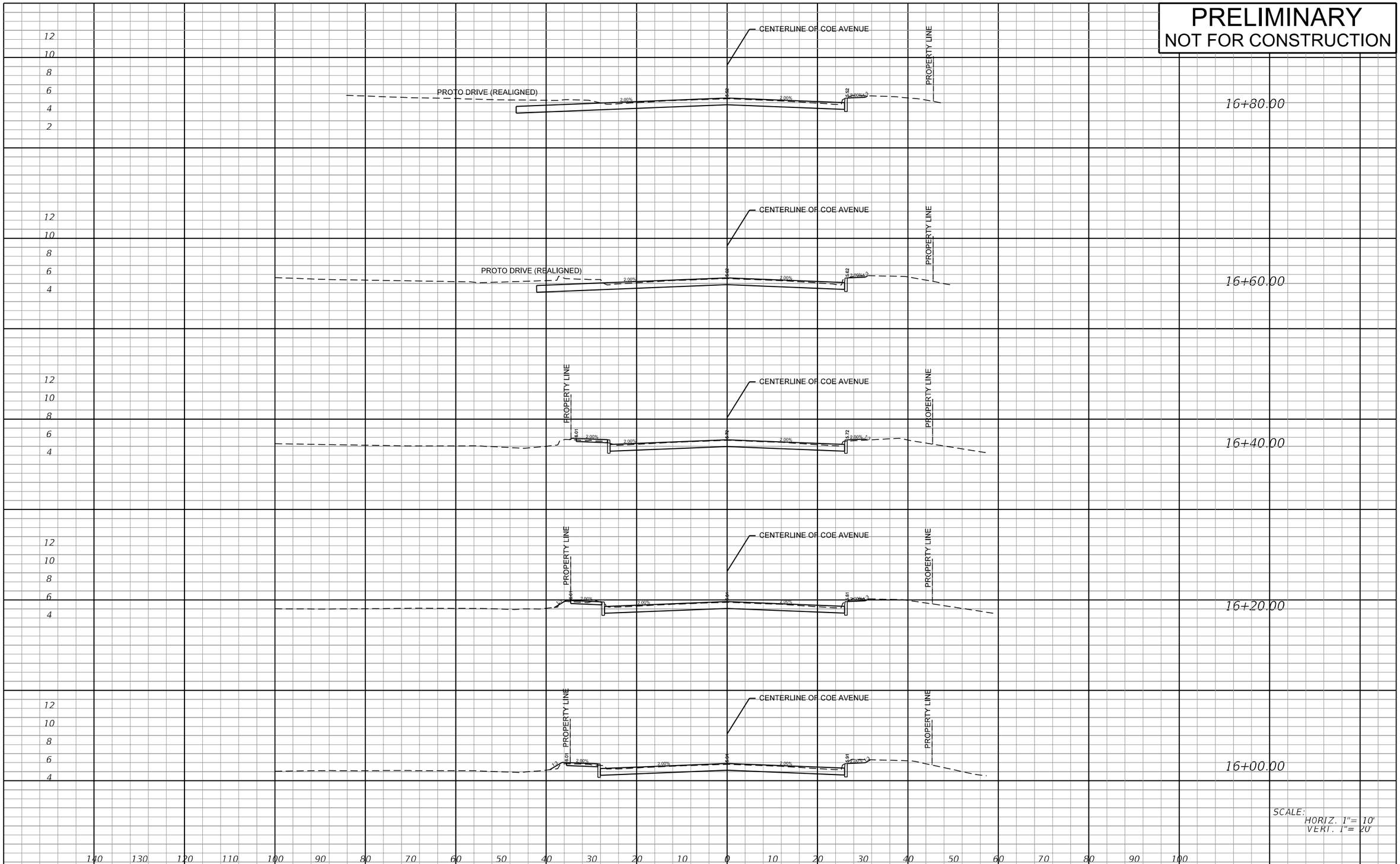


| REV. | DATE | DESCRIPTION | SHEET NO. |
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SCALE IN FEET
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SCALE 1:20

DESIGNER: HEIDY J. BRENES
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DATE CHECKED: 07/2012

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
APPROVED BY: DATE:

PROJECT TITLE:
HEMINGWAY - COE AVENUE STUDY

CADDx | PLOTTED: JULY 2012

TOWN: EAST HAVEN

DRAWING TITLE:
**CROSS SECTIONS**

PROJECT NO.: -
DRAWING NO.: XS-7
SHEET NO.: 11 of 21

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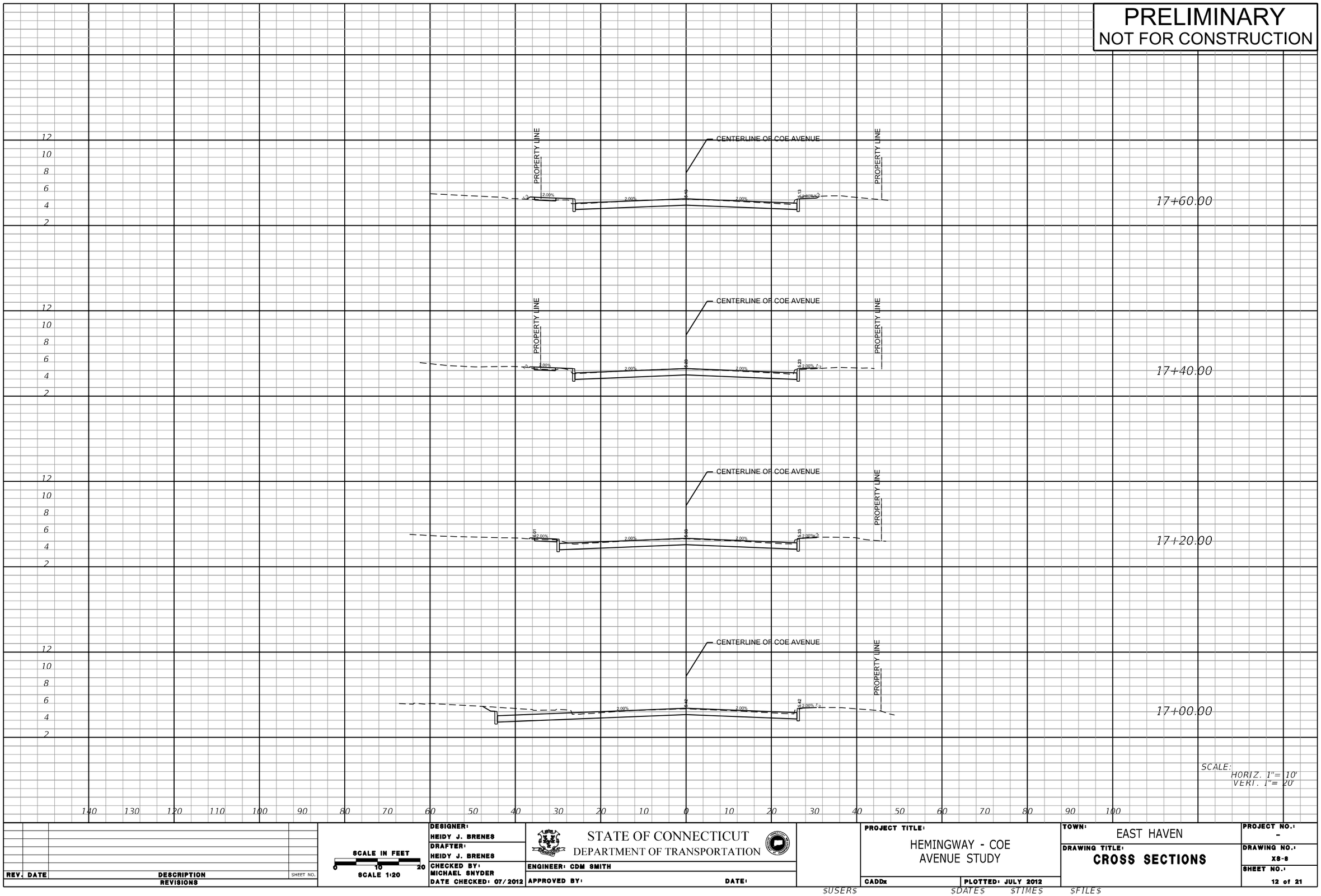


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SCALE IN FEET
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SCALE 1:20

DESIGNER: HEIDY J. BRENES
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DATE CHECKED: 07/2012

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
APPROVED BY: DATE:

PROJECT TITLE:
HEMINGWAY - COE AVENUE STUDY

CADDx | PLOTTED: JULY 2012

TOWN: EAST HAVEN

DRAWING TITLE:
**CROSS SECTIONS**

PROJECT NO.: -
DRAWING NO.: XS-8
SHEET NO.: 12 of 21

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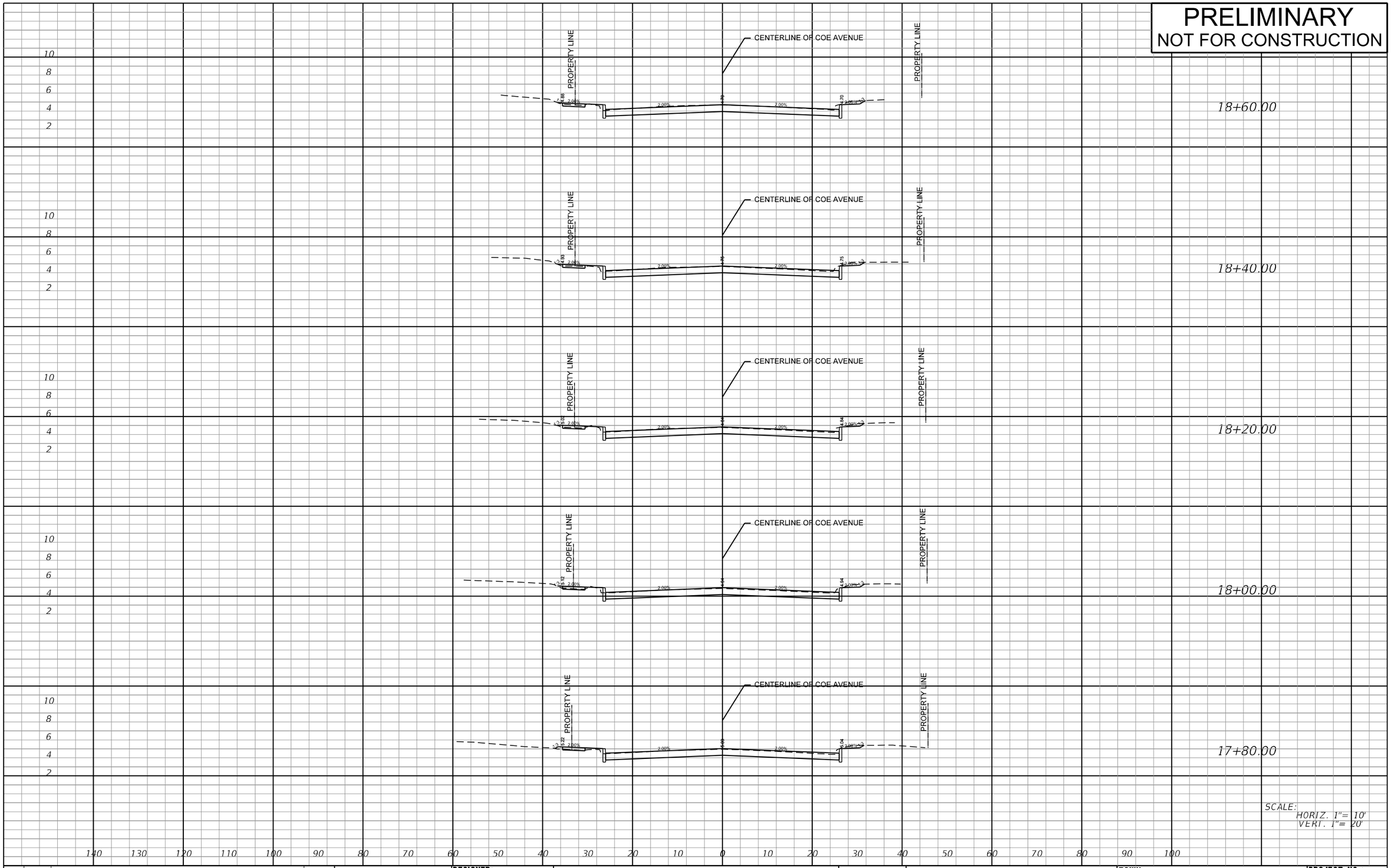


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SCALE IN FEET
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SCALE 1:20

DESIGNER: HEIDY J. BRENES
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CHECKED BY: MICHAEL SNYDER
DATE CHECKED: 07/2012

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
APPROVED BY: DATE:

PROJECT TITLE:
HEMINGWAY - COE AVENUE STUDY

CADDx | PLOTTED: JULY 2012

TOWN: EAST HAVEN

DRAWING TITLE:
**CROSS SECTIONS**

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DRAWING NO.: XS-8
SHEET NO.: 13 of 21

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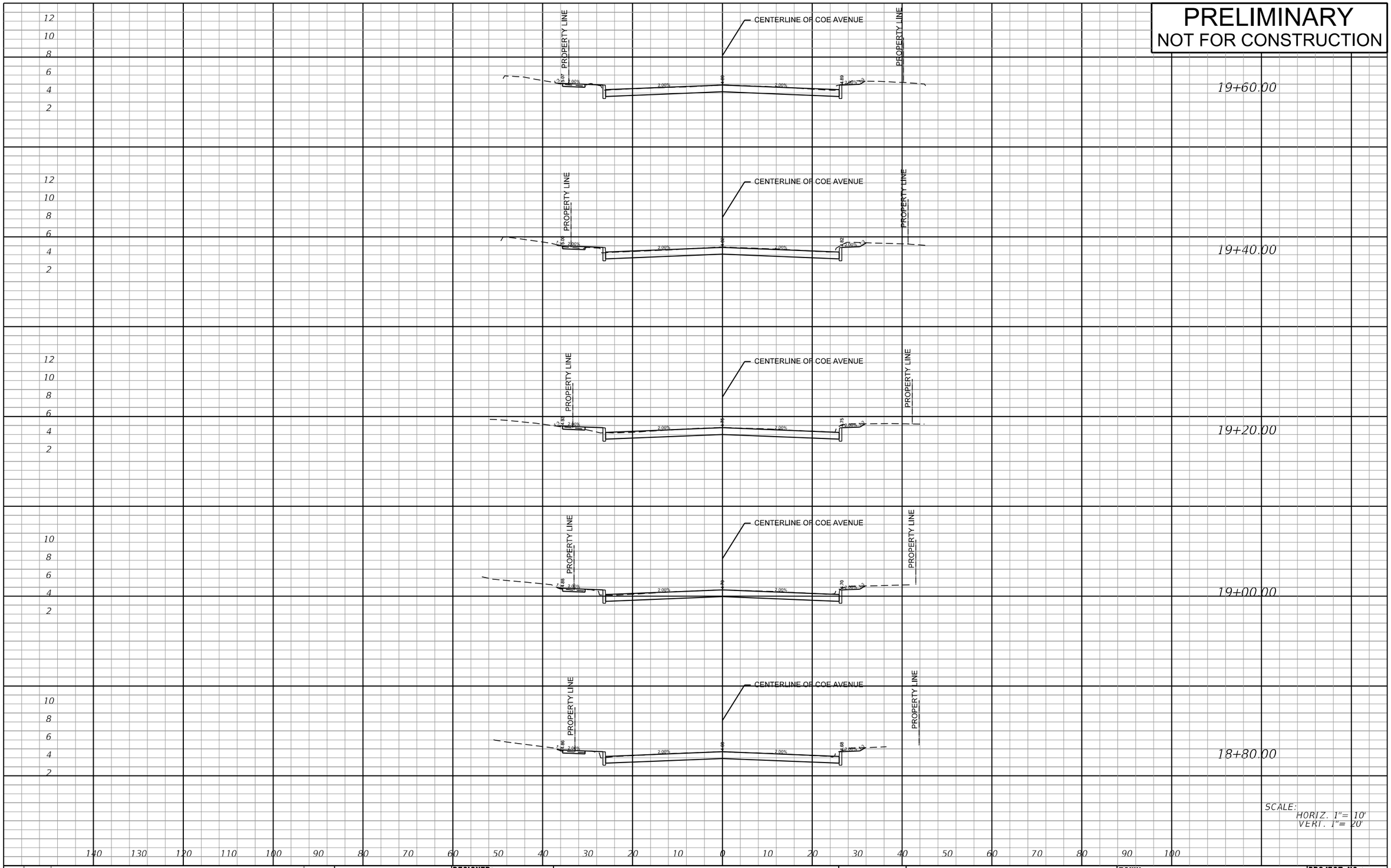


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| | | REVISIONS | |

SCALE IN FEET
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SCALE 1:20

DESIGNER: HEIDY J. BRENES
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STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
APPROVED BY: DATE:

PROJECT TITLE:
HEMINGWAY - COE AVENUE STUDY

CADDx | PLOTTED: JULY 2012

TOWN: EAST HAVEN

DRAWING TITLE:
**CROSS SECTIONS**

PROJECT NO.: -
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SHEET NO.: 14 of 21

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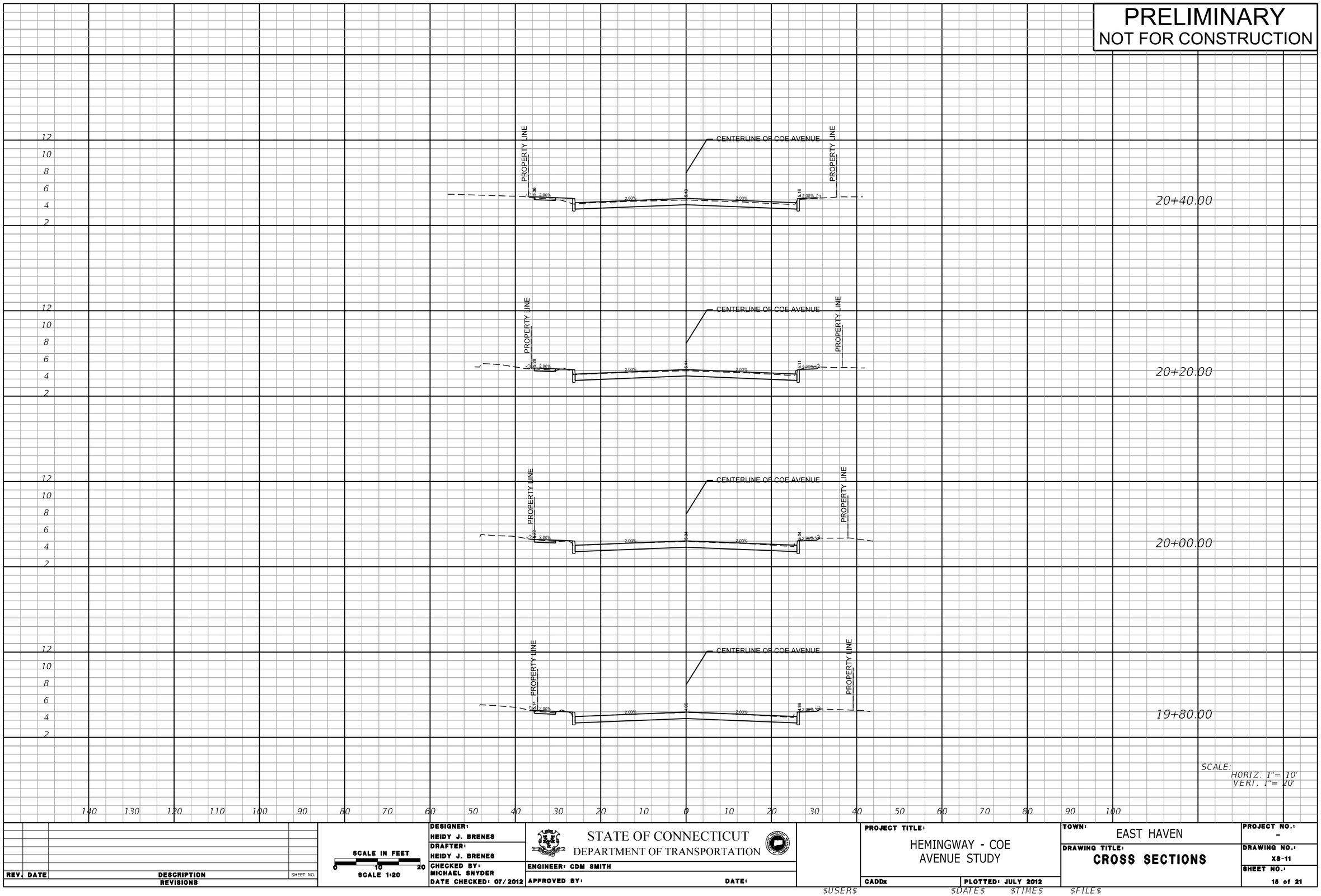


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| REV. | DATE | DESCRIPTION | SHEET NO. |
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| | | REVISIONS | |

SCALE IN FEET
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SCALE 1:20

DESIGNER: HEIDY J. BRENES
DRAFTER: HEIDY J. BRENES
CHECKED BY: MICHAEL SNYDER
DATE CHECKED: 07/2012

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
APPROVED BY: DATE:

PROJECT TITLE:
HEMINGWAY - COE AVENUE STUDY

CADDx | PLOTTED: JULY 2012

TOWN: EAST HAVEN

DRAWING TITLE:
**CROSS SECTIONS**

PROJECT NO.: -
DRAWING NO.: XS-11
SHEET NO.: 15 of 21

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PRELIMINARY
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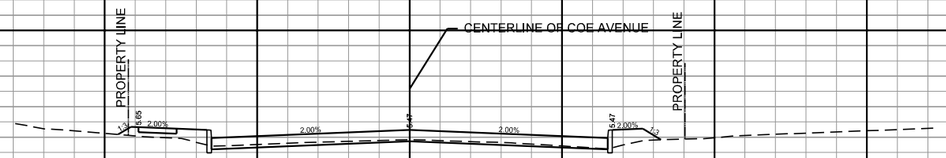


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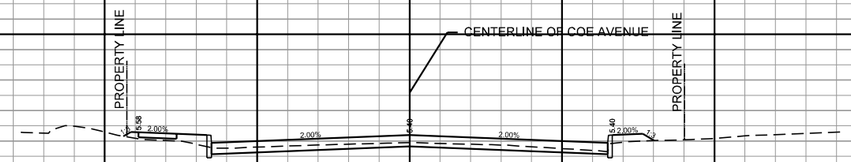


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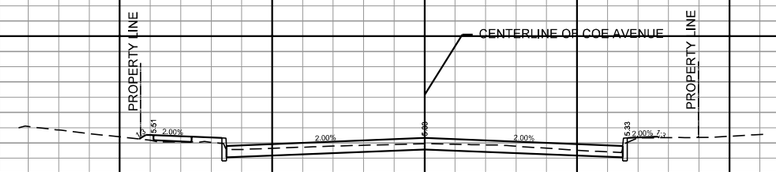


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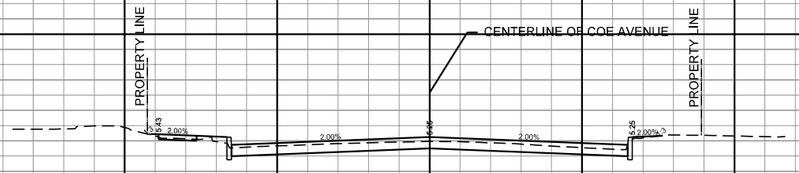


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SCALE:
HORIZ. 1"= 10'
VERT. 1"= 20'

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SCALE 1:20

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STATE OF CONNECTICUT
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ENGINEER: CDM SMITH
APPROVED BY: DATE:

PROJECT TITLE:
HEMINGWAY - COE AVENUE STUDY

CADDx | PLOTTED: JULY 2012

TOWN: EAST HAVEN

DRAWING TITLE:
**CROSS SECTIONS**

PROJECT NO.: -
DRAWING NO.: XS-12
SHEET NO.: 18 of 21

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PRELIMINARY
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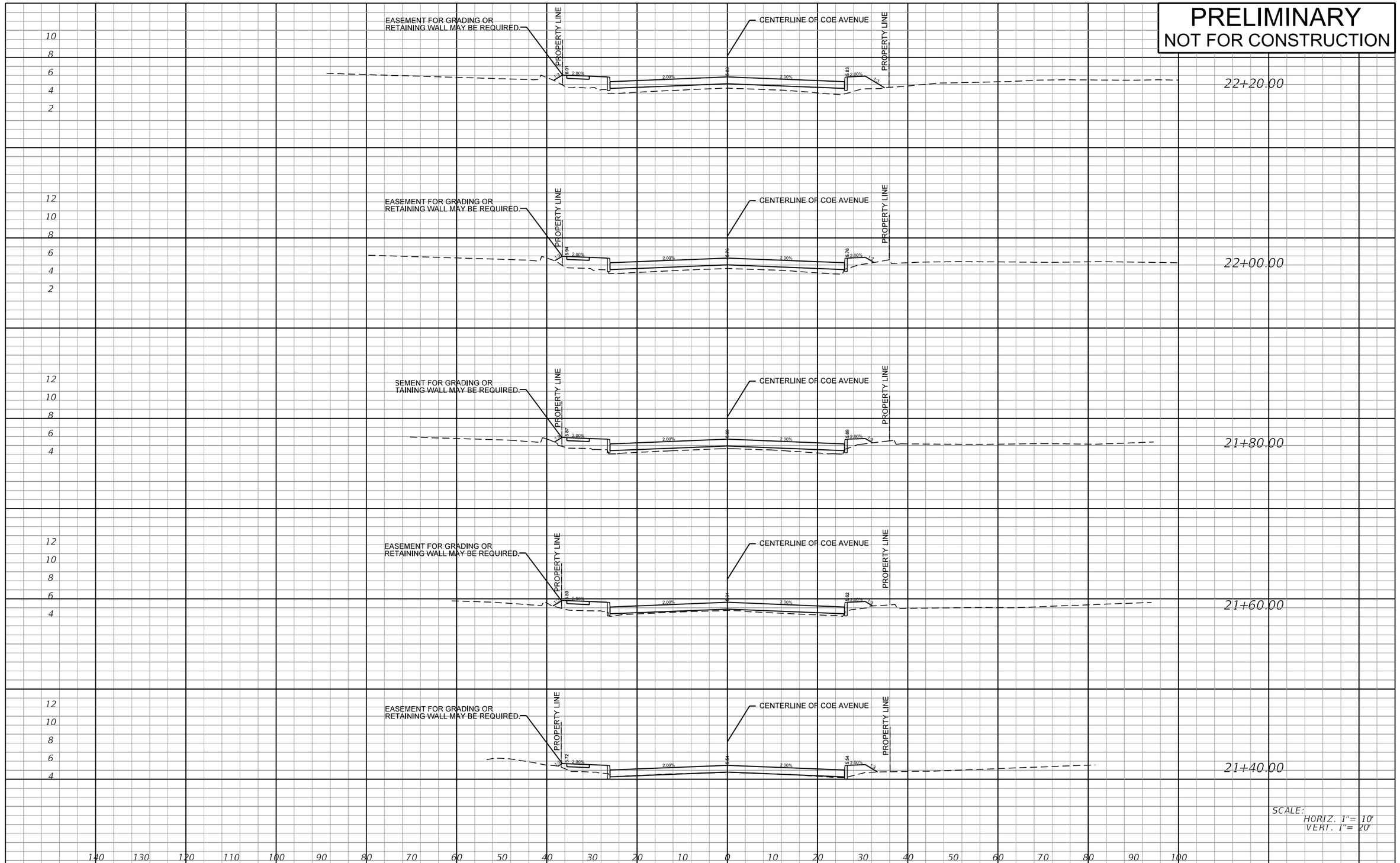


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| | | REVISIONS | |

SCALE IN FEET
0 10 20
SCALE 1:20

DESIGNER: HEIDY J. BRENES
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STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
APPROVED BY: DATE:

PROJECT TITLE:
HEMINGWAY - COE AVENUE STUDY

CADDx | PLOTTED: JULY 2012

TOWN: EAST HAVEN

DRAWING TITLE:
**CROSS SECTIONS**

PROJECT NO.: -
DRAWING NO.: XS-13
SHEET NO.: 17 of 21

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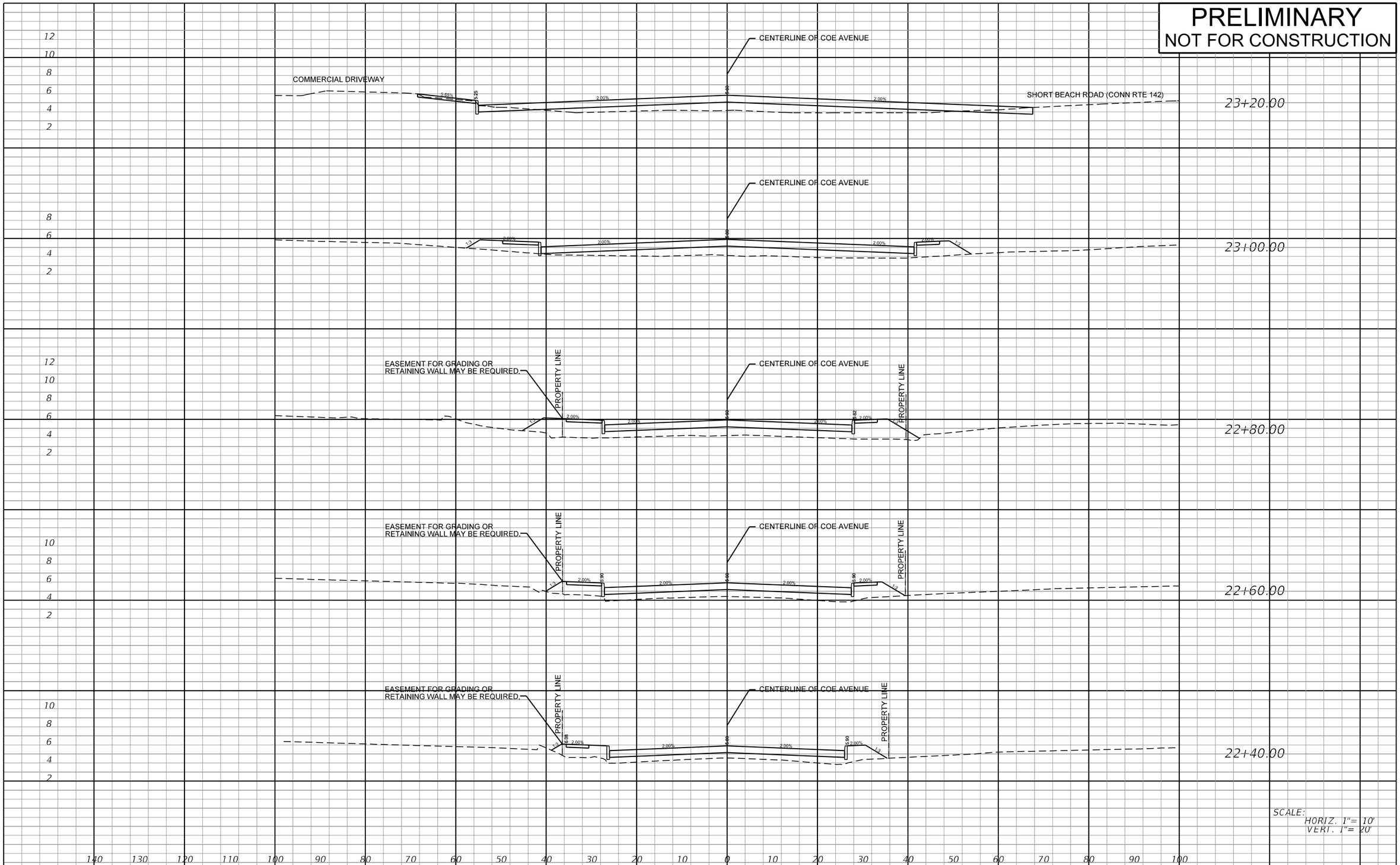


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SCALE IN FEET
0 10 20
SCALE 1:20

DESIGNER: HEIDY J. BRENES
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STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
APPROVED BY: DATE:

PROJECT TITLE:
HEMINGWAY - COE AVENUE STUDY

CADDx | PLOTTED: JULY 2012

TOWN: EAST HAVEN

DRAWING TITLE:
**CROSS SECTIONS**

PROJECT NO.: -
DRAWING NO.: XS-14
SHEET NO.: 18 of 21

$USER$ $DATE$ $TIME$ $FILE$

PRELIMINARY
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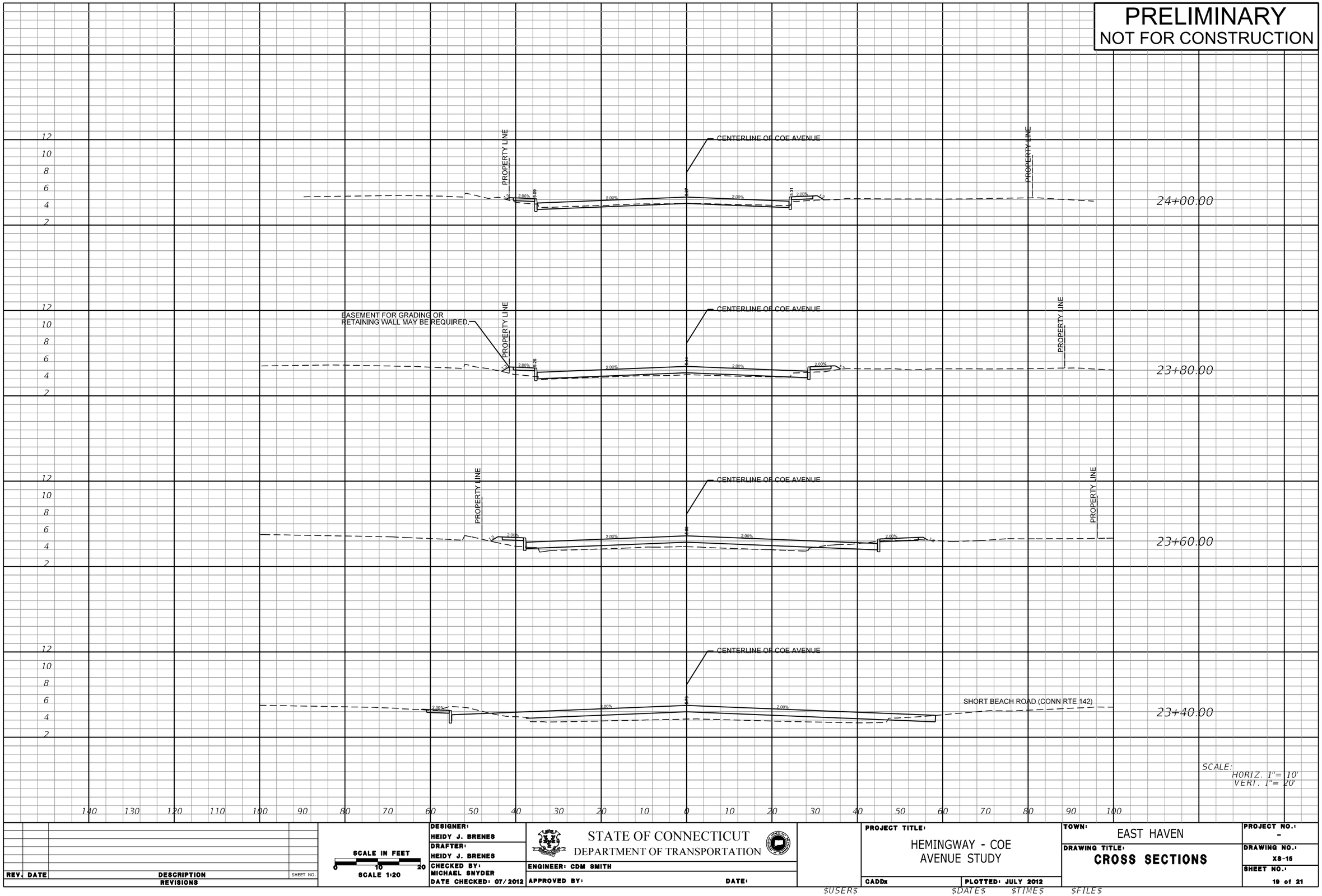


| REV. | DATE | DESCRIPTION | SHEET NO. |
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SCALE 1:20

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STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
APPROVED BY: DATE:

PROJECT TITLE:
HEMINGWAY - COE AVENUE STUDY

CADDx | PLOTTED: JULY 2012

TOWN: EAST HAVEN

DRAWING TITLE:
**CROSS SECTIONS**

PROJECT NO.: -
DRAWING NO.: XS-15
SHEET NO.: 19 of 21

$USER$ $DATE$ $TIME$ $FILE$

PRELIMINARY
NOT FOR CONSTRUCTION


SCALE:
HORIZ. 1"= 10'
VERT. 1"= 20'

| REV. | DATE | DESCRIPTION | SHEET NO. |
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| | | REVISIONS | |

SCALE IN FEET
0 10 20
SCALE 1:20

DESIGNER: HEIDY J. BRENES
DRAFTER: HEIDY J. BRENES
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DATE CHECKED: 07/2012

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
APPROVED BY: DATE:

PROJECT TITLE:
HEMINGWAY - COE AVENUE STUDY

CADDx | PLOTTED: JULY 2012

TOWN: EAST HAVEN

DRAWING TITLE:
**CROSS SECTIONS**

PROJECT NO.: -
DRAWING NO.: XS-16
SHEET NO.: 20 of 21

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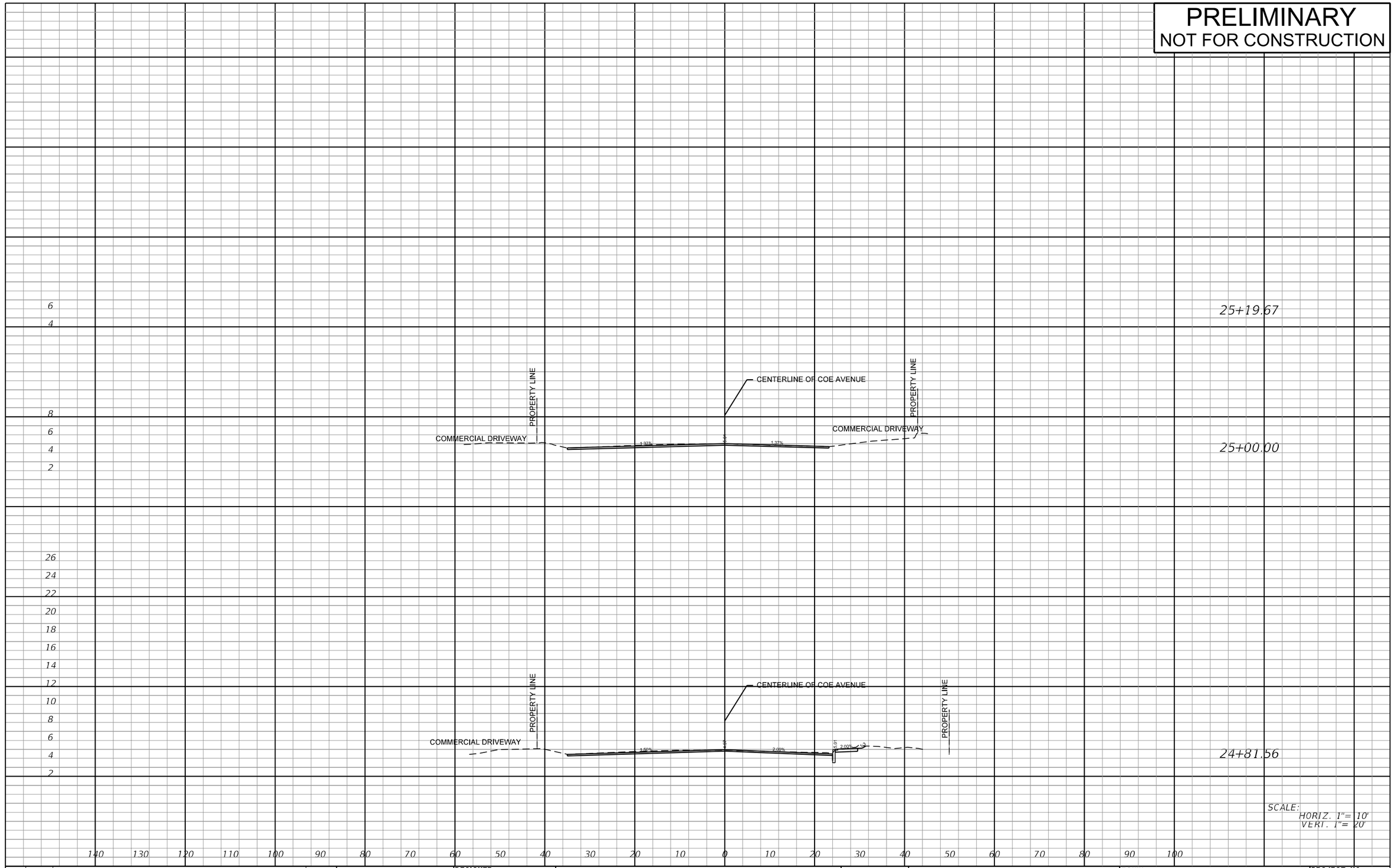


| REV. | DATE | DESCRIPTION | SHEET NO. |
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0 10 20
SCALE 1:20

DESIGNER: HEIDY J. BRENES
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STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: CDM SMITH
APPROVED BY: DATE:

$USER$

PROJECT TITLE:
HEMINGWAY - COE AVENUE STUDY

CADDx | PLOTTED: JULY 2012

$DATE$ $TIME$ $FILE$

TOWN: EAST HAVEN

DRAWING TITLE:
**CROSS SECTIONS**

PROJECT NO.: -
DRAWING NO.: XS-17
SHEET NO.: 21 of 21

# List of Permits and Agencies

## Local, State and Federal Permits Which May be Required for the Proto Drive Realignment

| Permit | Agency: Town of East Haven | Agency: CTDEEP/ OLISP | Agency: CT DOT | Agency: Federal Agency | Permit Citation | Requirement |
|---|---|---|---|---|---|---|
| **Site Development Plan Application** Town of East Haven | X | | | | East Haven Zoning Regulations http://www.townofeasthavenct.org/pdf/planzone/East-Haven-Zoning-Regulations-May2012.pdf | Since this project will result in modification of lot sizes, it will likely require a review by the Town's Zoning Administrator under the town's Site Plan of Development process; approval of town-sponsored development activities will occur within the C.G.S. 8-24 statutory provisions. |
| **Re-subdivision Approval** Town of East Haven | X | | | | Subdivision regulations of the Town of East Haven http://www.townofeasthavenct.org/pdf/planzone/subdivision-regulations-may2012.pdf | As the project will result in changes to approved subdivision maps, it is considered a re-subdivision, requiring a Re-subdivision Approval. |
| **Demolition Permit** Town of East Haven | X | | | | Application for Demolition Permit http://www.townofeasthavenct.org/building.shtml | If the project will require demolition of existing structures. |
| **Town Plan of Conservation and Development** Town of East Haven | X | | | | [No permit but review and potential modification to Town Plan of Conservation and Development.] | Review of Town Plan of Conservation and Development and determine whether a modification is necessary to enable the expansion of the industrial district and the reconstruction of the street section. |
| **Special Permit for Farm River Flood Plain** Town of East Haven | X | | | | Flood Damage Prevention and Control Ordinance of the Town of East Haven – provisions and standards in Section 29 of the East Haven Zoning Regulations http://www.townofeasthavenct.org/pdf/planzone/East-Haven-Zoning-Regulations-May2012.pdf | The Zoning Administrator and Town Engineer must endorse the application to the general zoning permit as being in compliance with the Farm River Floodplain Overlay District requirements & any required Development Permit under the provisions of the Flood Damage Prevention and Control Ordinance. |
| **CT Coastal Management Act** (CMA)Town of East Haven | X | | | | Per Connecticut General Statutes (CGS) Sections 22a-90 through 22a-112. http://www.ct.gov/dep/lib/dep/long_island_sound/coastal_management_manual/manual_section_5_08.pdf | An Application for Review of Coastal Site Plans is required for any plans impacting coastal boundary, which is defined as a continuous line delineated on the landward side by the interior contour elevation of the one hundred year frequency coastal flood zone, as defined and determined by the national Flood Insurance Act, or a one thousand foot linear setback measured from the mean high water mark in coastal waters, or a one thousand foot linear setback measured from the inland boundary of tidal wetlands, whichever is farthest inland. The entire project area lies within the CMA jurisdictional boundaries. Coastal municipalities are required to undertake coastal site plan reviews including, e.g. architectural floor plans and elevations, hydrology report and stormwater pollution control plan. Applications are submitted to the Town. |
| **Inland Wetlands & Watercourses Permit** Town of East Haven Inland Wetlands and Water Courses Commission | X | | | | Per CGS Sections 22a-36 to 22a-45(a). http://cga.ct.gov/2011/pub/chap440.htm | An application to the Inland Wetlands and Water Courses Commission may be required for this project depending on the classification of the wetlands impacted by the road realignment. |
| **Flood Management Certificate** CTDEEP Office of Inland Water Resources | | X | | | Per CGS Sections 25-68b through 25-68h. http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324172&depNav_GID=1643 | Requires preparation of site plans, sedimentation and erosion control plans, stormwater hydrographs, stormwater pollution control plan (pretreatment basins, possible retention basins) and application form. The Permit requirements include that stormwater water from impervious surfaces be collected and treated to remove a minimum of 80% of total suspended solids. Various technical documents in support of the application include, but are not limited to: floodplain management consistency worksheets and hydrology and hydraulics, engineering design reports, plans and specifications describing the project and, where applicable, how fish populations and fish passage will be protected. |
| **Stream Channel Encroachment Line (SCEL) Permit** CTDEEP | | X | | | Per CGS Sections 22a-342 to 22a-349(a). http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324176&depNav_GID=1643 | Prior to placing any encroachment or obstruction riverward of a SCEL established by DEP under CGS Section 22a-342, a permit must be obtained. The following are examples of regulated activities for which a SCEL permit is needed: construction of structures; excavation or deposition of material; land clearing and grading; and substantial maintenance or repair of non-conforming structures (e.g., buildings that existed when the encroachment lines were adopted). DEP has designated about 270 miles of floodplain throughout the state on "SCEL maps". These maps are on file in the Town Clerk's Office. |
| **Tidal Wetlands, Structures, Dredge and Fill** CTDEEP/ Office of Long Island Sound Programs (OLISP) | | X | | | Per CGS Sections 22a-359 through 22a-363f. http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324180&depNav_GID=1643 and http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324222&depNav_GID=1643#LongIslandSound | For projects that impact tidal wetlands, the statutes require preparation of site plans, sedimentation and erosion control plans, stormwater hydrographs, stormwater pollution control plan (pretreatment basins, possible retention basins) and application form. The Permit requirements include that stormwater water from impervious surfaces be collected and treated to remove a minimum of 80% of total suspended solids. |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Water Diversion Permit**<br>CTDEEP Office of Inland Water Resources | | X | | | CT Water Diversion Policy Act per CGS Sections 22a-365 to 22a-378(a).<br>http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324178&depNav_GID=1643 | This program, administered by the Bureau of Water Protection and Land Reuse's Inland Water Resources Division, regulates activities which cause, allow or result in the withdrawal from, or the alteration, modification or diminution of, the instantaneous flow of the waters of the state. In general, any person proposing a diversion which was not registered with the Department and, which is not exempt, must apply for a permit. You must apply for a permit if, among other things, you propose to construct or otherwise modify roadway crossings or culverts which provide detention or retention of watercourse flows either by design or default; or relocate, retain, detain, bypass, channelize, pipe, culvert, ditch, drain, fill, excavate, dredge, dam, impound, dike, or enlarge waters of the state. |
| **Stormwater Permit Associated with Construction Discharges**<br>CTDEEP | | X | | | Per CGS Section 22a-430(b);<br>DEP-PERD-GP-015<br>http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324212&depNav_GID=1643 | This general permit applies to all discharges of stormwater and dewatering wastewater from construction activities which result in the disturbance of *one or more* total acres of land area on a site regardless of project phasing. For construction projects with a total disturbed area (regardless of phasing) of between one and five acres, the permittee shall agree to adhere to the erosion and sediment control land use regulations of the town in which the construction activity is conducted. No registration of this general permit shall be required for such construction activity as long as it receives town review and written approval of its erosion and sediment control measures and follows the Guidelines. If no review is conducted by the town, the permittee must register and comply with Section 6 of this general permit. For construction projects with a total disturbed area (regardless of phasing) of greater than five acres, registration is required to be submitted in order for the discharges to be authorized by this general permit. |
| **State Traffic Signal Approval**<br>CT Department of Transportation | | X | | | Per CGS Section 14-299.<br>http://www.ct.gov/dot/cwp/view.asp?A=1394&Q=259542 | Permits for the installation, revision, and removal of traffic control signals are issued to the Local Traffic Authority having jurisdiction – in East Haven it is the Police Commission. |
| **Coastal Zone Management (CZM) Consistency**<br>CTDEEP Office of Inland Water Resources | | X | | | CZM Concurrence under Section 307 of the Federal CZM Act of 1972, as amended.<br>http://www.ct.gov/dep/cwp/view.asp?A=2705&Q=441852 | Requires applicants to obtain a certification or waiver from the CTDEEP that the activity complies with the CT Coastal Management Program for activities affecting the state's coastal area. |
| **Section 401 of the Federal Clean Water Act** (Water Quality Certification) CTDEEP Inland Water Resources Division and OLISP | | X | | | Section 401 of the Federal Clean Water Act (33 U.S.C. 1314) and per CGS Sections 22a-30-1 through 22a-30-17.<br>http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324168&depNav_GID=1643 | The 401 Water Quality Certification program, administered by the, regulates any applicant for a federal license or permit who seeks to conduct an activity that may result in any discharge into the navigable waters, including all wetlands, watercourses, and natural and man-made ponds. Such persons must obtain certification from DEP that the discharge is consistent with the federal Clean Water Act and the Connecticut Water Quality Standards. |
| **Certificate of Operation of a Major Traffic Generator**<br>CT Department of Transportation | | | X | | Per CGS Section 14-311.<br>http://www.ct.gov/dot/cwp/view.asp?A=1394&Q=259538 | A certificate of operation is required for all developments of 100,000 square feet of floor area and/or 200 or more parking spaces which abut or adjoin a state highway or which substantially affect state highway traffic. A certificate is required for any new development or an expansion of an existing development which, in its entirety, equals or exceeds the aforementioned thresholds and abuts or adjoins a state highway. A new certificate is required for any development which is already certified, and is increasing its parking facilities by 50 or more parking spaces, increasing in square footage or is proposing any significant change in use from that previously approved (i.e., office-to-retail).<br>Developments which do not abut or adjoin a state highway, but equal or exceed the aforementioned thresholds, must first be evaluated to determine if a Certificate will be required. |
| **State Highway Encroachment**<br>CTDOT | | | X | | Per CGS Section 13b-17, Regulations, Delegations of duties and responsibilities of commissioner, Section 13a-143a, Driveway Permits and Section 13a-247, Excavations and Obstructions.<br>http://www.ct.gov/dot/cwp/view.asp?A=1394&Q=259544 | A permit (e.g. curb-cut permit) may be required if any change is made in the structure, layout, drainage or topography of a State highway and its appurtenances. Since Coe Avenue is a state highway, an Encroachment Permit will be required from the Connecticut Department of Transportation. |
| **National Environmental Policy Act (NEPA) and Connecticut Environmental Policy Act (CEPA)**<br>EPA Region 1 Office of Environmental Review | | | | X | Full NEPA review, including environmental assessments (EA's) or environmental impact statements (EIS's), may be required if federal agencies' funding is used or if federal agencies must make any permitting decisions. Similarly, CEPA review, EA's or EIS's may also be required if state funds are used for any portion of the project, depending on the threshold requirements of each state agency.<br>http://www.epa.gov/region1/nepa/ | NEPA and CEPA requirements go into effect when airports, buildings, military complexes, highways, parkland purchases and other federal or state sponsored activities with the potential for impacts are proposed. Environmental assessments (EA's) or Environmental Impact Statements (EIS's), which are assessments of the likelihood of impacts from alternative courses of action, are required from all federal and state agencies and are the most visible NEPA/CEPA requirements. NEPA/CEPA requires agencies to disclose these impacts to interested parties and the general public. The central element in the environmental review process is a rigorous evaluation of alternatives including the "no action" alternative. |
| **National laws protecting species**<br>EPA and Fish and Wildlife Service | | | | X | Endangered Species Act, Migratory Bird Treaty Act, or Wild Bird Conservation Act<br>http://www.fws.gov/permits/legacyfs.pdf | Review of these laws and the related requirements may be required if the habitat of any of the listed threatened or endangered species is in the impacted location. |
| **Section 404 of the Clean Water Act,**<br>Department of the Army<br>New England District -<br>US Army Corps of Engineers<br>(USACOE) | | | | X | The Corps of Engineers regulates work and structures that are located in, under or over navigable waters of the United States under Section 10 of the Rivers and Harbors Act of 1899; the discharge of dredged or fill material into waters of the United States under Section 404 of the Clean Water Act; and the transportation of dredged material for the purpose of disposal in the ocean (regulated by the Corps under Section 103 of the Marine Protection, Research and Sanctuaries Act).<br>http://www.nae.usace.army.mil/Regulatory/ | "Waters of the United States" are navigable waters, tributaries to navigable waters, wetlands adjacent to those waters and/or isolated wetlands that have a demonstrated interstate commerce connection. Review is conducted jointly by the ACOE and CTDEEP (see CT 401 Water Quality Permit). Additional review by U.S. Fish and Wildlife, U.S. Environmental Protection Agency and other federal agencies may be conducted based on potential impacts of the wetlands or wildlife habitat. Since the relocation of Proto Drive will require the deposition of fill (or dredged) materials within the jurisdictional limits of the USACOE (i.e. waterward of the high tide line), an Individual permit will likely be required. The National Oceanic and Atmospheric Administration (NOAA) may also be involved for review if federal funds are involved. |
| **Federal Aviation Administration** | | | | X | | May need review of new street lights by the FAA regarding airfield lighting safety in the vicinity of the New Haven airport. |

Note: This permit list is based on a preliminary assessment; actual permitting requirements may vary and will require documentation of existing coastal and environmental resources, preliminary engineering and additional research.

COMMENTS OF THE TOWN OF EAST HAVEN ON THE TWEED NEW HAVEN AIRPORT NEPA DRAFT ENVIRONMENTAL ASSESSMENT RUNWAY 02-20 EXTENSION AND TERMINAL EXPANSION PROGRAM

Attachment L

Email dated July 11, 2022 Email From Marissa Pfaffinger, Connecticut DOT re East Haven Drainage

**From:** Pfaffinger, Marissa <Marissa.Pfaffinger@ct.gov>
**Sent:** Monday, July 11, 2022 10:52 AM
**To:** Jonathan Bodwell <jbodwell@townofeasthavenct.org>
**Subject:** RE: East Haven drainage

Good Morning Jonathan – thanks for following up and apologies for not reaching out sooner.

After investigating the area, I do not think we will reasonably be able to get the road entirely out of the flood elevations without significant impact to the surrounding properties. When looking at the mapping, there's approx.. 0.5 miles where the roadway is below the flood elevations (based on lidar) with a max difference of about 8 feet.

That being said, the PDU will be initiating a scoping phase to develop concepts to improve the situation to the greatest extent practical. The intention would be to initiate a state project to address/improve the flooding. This concept will be assigned to internal PDU staff and we expect to be in contact with you as the process unfolds. While we do have some mapping resources for the area, if there is any other utility or drainage information you might have, it would be welcomed info. At present, the study area extends from the Coe/Silver Sands intersection in the south to the Coe/Dodge Intersection to the north. It is unclear at this time what the limits for a recommended project may be, but preliminarily that is the area we will be investigating.

Please let me know if you have any questions.

Thank you,
Marissa

**From:** Jonathan Bodwell <jbodwell@townofeasthavenct.org>
**Sent:** Monday, July 11, 2022 9:51 AM
**To:** Pfaffinger, Marissa <Marissa.Pfaffinger@ct.gov>
**Subject:** East Haven drainage



Marissa

Good morning. Hope all is well.

I was wondering if any progress on the study of East Haven's drainage situation has occurred.

Thanks for any up-date that you can provide.

Jonathan

COMMENTS OF THE TOWN OF EAST HAVEN ON THE TWEED NEW HAVEN AIRPORT NEPA DRAFT ENVIRONMENTAL ASSESSMENT RUNWAY 02-20 EXTENSION AND TERMINAL EXPANSION PROGRAM

Attachment M

Letter dated 04.21.2023 from Connecticut DOT re Notification of Scoping Efforts

# STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546


April 21, 2023

The Honorable Joseph A. Carfora
Mayor
East Haven Town Hall
250 Main Street
East Haven, CT 06512

Dear Mayor Joseph A. Carfora:

Subject: **Town Notification of Scoping Efforts**
Proposed Project No. 043-010 (PP_043_010)
Route 337 (Coe Avenue) at Route 142 (Hemingway Avenue)
Town of East Haven

The Department of Transportation's (Department) Office of Engineering has identified the Intersection of Route 337 (Coe Avenue) and Route 142 (Hemingway Avenue) as a location of potential improvement. The purpose of the proposed project is to reduce flooding to the greatest extent feasible at the subject intersection and the surrounding roadways.

The Department's Project Development Unit (PDU) is in receipt of the information shared by Mr. Jonathan Bodwell in 2022 regarding the cancelled town project at the subject intersection. The mapping and project plans have provided relevant and helpful information to understand the existing conditions and constraints throughout the proposed project limits.

This proposed project is in the concept development stage and the Department's Project Development Unit (PDU) is requesting that the Town share any additional relevant information about the location to help ensure a comprehensive and complete scoping effort. Such information may include: planned utility upgrades, presence of the location in published plans (Complete Streets plans, Plans of Conservation and Development, Corridor Redevelopment Plans, etc.), known future developments or Town improvement projects, existing bicycle and pedestrian needs, or known environmental concerns. If such information is available, it is requested that the Project Engineer identified below be notified by May 19, 2023, to continue coordination.

The PDU is currently exploring the inclusion of the following items with this project:

- Raising the roadway at and surrounding the Route 337 and Route 142 intersection to the greatest extent possible. It is expected that the limits of the project will extend along Route 142 (Hemingway Avenue) / Route 337 (Coe Avenue) from Dodge Avenue to Silver Sands Road and along Route 142 (Short Beach Road) from Route 337 to Vista Drive.

- A possible road diet on Route 337 from Route 142 to Silver Sands Road.
    - This roadway was identified as a potential road diet candidate in a 2020 Study by the Department's Division of Traffic Engineering. As part of the concept development phase for this proposed project, the PDU will explore the

implementation of a road diet and how it may support or compliment the overall purpose and need of the proposed project.

- Widening the shoulder through the right-turn lane on the Route 142 (Short Beach Road) westbound approach from 1-foot to 4-feet for consistency with current design standards.

- Explore the installation of additional sidewalk within project limits as well as closing the gaps in the existing sidewalk network by adding sidewalk to the following locations:
    - On the east side of Route 337 from Route 142 to where the existing sidewalk starts just south of Proto Drive
    - On the east side of Route 337 from Edgemere Road to Silver Sands Road
    - On the north side of Route 142 (Short Beach Road) from Route 337 to where the existing sidewalk starts northwest of Vista Drive

It should be noted that this letter does not signify a project commitment for this area. No funding has been identified and no schedule has been developed. Rather, this letter is intended to notify the Town that the Department is investigating the existing conditions at this location and to provide an opportunity for communication and collaboration. All concepts are subject to Departmental review and approval before a design phase can be initiated.

By copy of this letter, the South Central Regional COG is also being notified of this scoping effort and is encouraged to provide any relevant information to the PDU as well.

If you have any questions or wish to provide the Department with any information, please contact Leigh-Marie Chin, Project Engineer, at Leigh-Marie.Chin@ct.gov or at (860) 594-2936. (Email is preferred). Please reference PP_043_010.

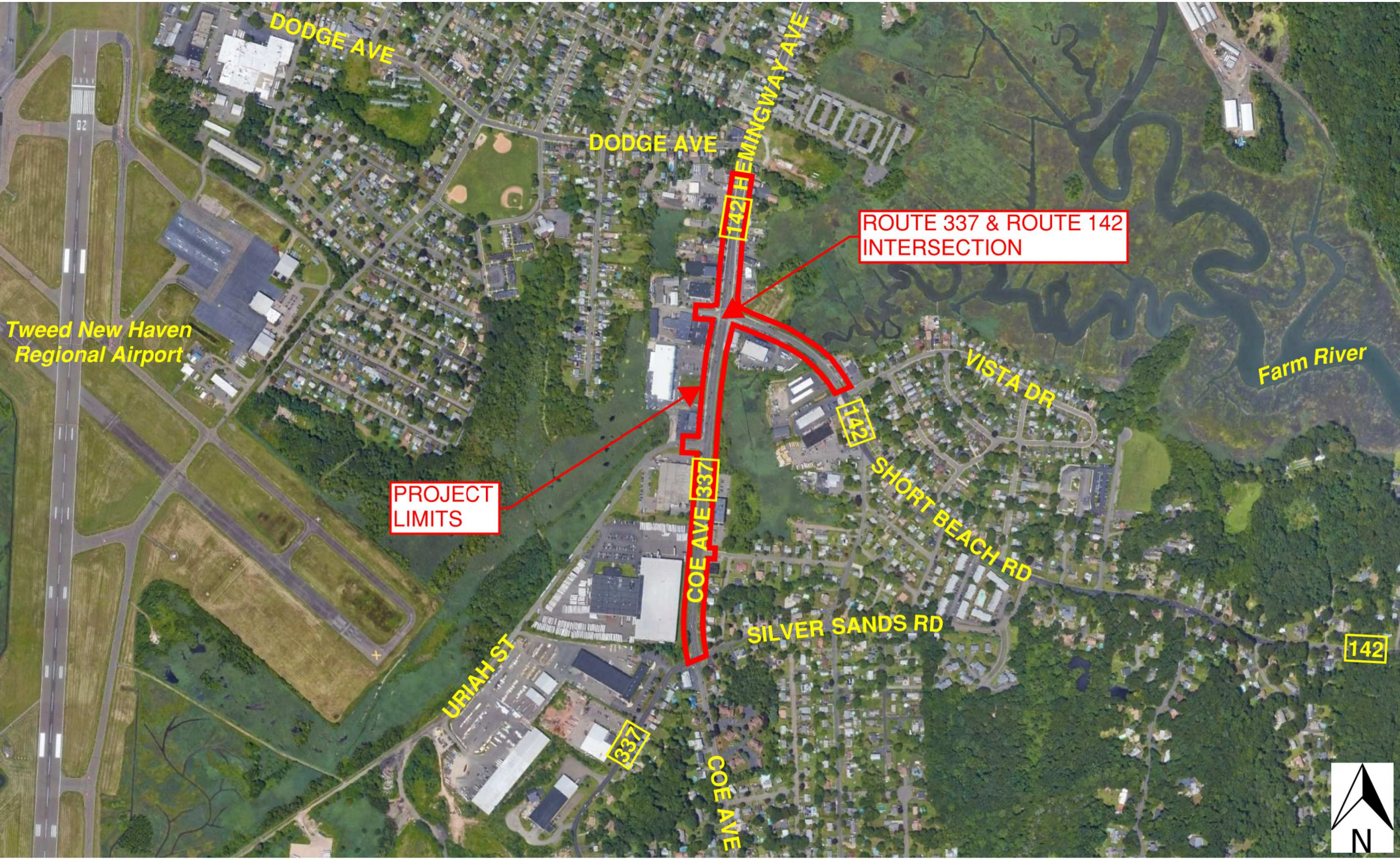
Very truly yours,

Digitally signed by Emin Basic
DN: C=US, E=emin.basic@ct.gov, OU=Project Development Unit, CN=Emin Basic
Date: 2023.04.20 15:04:11-04'00'

Emin Basic, P.E.
Project Manager
Project Development Unit

Enclosures
PP_043_010_Location Map

cc: Mr. Dominic Balletto, Police Commission Chairman
Mr. Jonathan Bodwell, Town Engineer
Mr. Carl J. Amento, SCRCOG Executive Director – Ms. Laura Francis


DODGE AVE
DODGE AVE
HEMINGWAY AVE
142
ROUTE 337 & ROUTE 142
INTERSECTION
Tweed New Haven
Regional Airport
VISTA DR
Farm River
142
PROJECT
LIMITS
337
COE AVE
SHORT BEACH RD
SILVER SANDS RD
142
URIAH ST
337
COE AVE
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