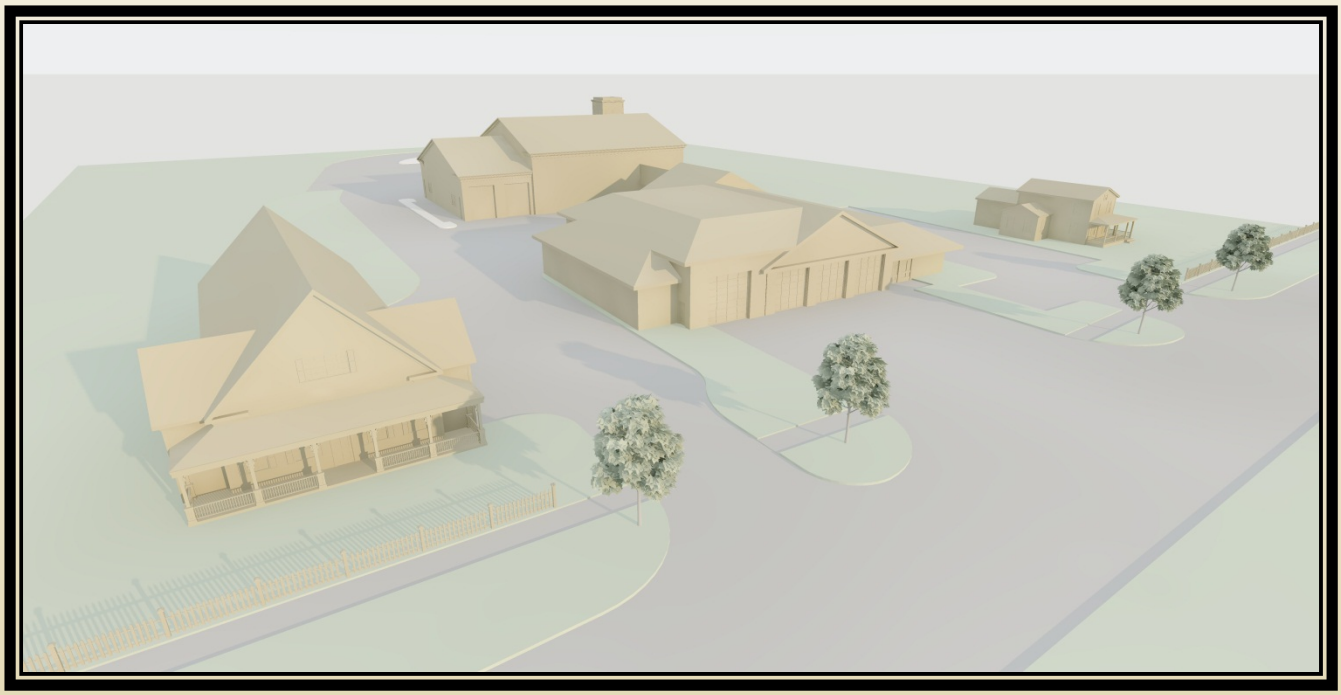
Schematic Design Report

Durham Public Safety Complex

March 5, 2013

Final Report



Silver/Petrucelli+Associates
Architects/Engineers/Interior Design
3190 Whitney Avenue, Hamden, CT
Tel: 203 230 9007 Fax: 203 230-8247
Email: info@silverpetrucelli.com

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Schematic Design Submission

Durham Public Safety Complex
37, 41 and 51 Main Street
Durham, Connecticut, 06422

SP&A Project No. 09.028

In September of 2009, Silver/Petrucelli + Associates was contracted to develop design concepts for a Public Safety Complex located on the lots 27, 41, and 51 Main Street. Currently, the Durham Volunteer Fire Station operates its only building on 41 Main Street. The two adjacent parcels 37 and 51 are town owned parcels with vacant residential structures. The program and design intent is to combine the emergency service departments of Fire, Ambulance, Emergency Management, Fire Marshall and the Resident State Trooper onto one campus. The three parcels noted above will be combined to unify the site features, parking and utilities.

During the conceptual design phase of the project, over 13 schemes were developed and reviewed with the Public Safety Facility Renovations Planning Committee (PSFRPC). A final design was formally approved, which is included in this report. The studies included various configurations, orientations, massing and separations of each of the departments. The goal expressed by the PSFRPC was to develop a layout where the two major use groups (Fire and Ambulance) can be housed under one roof but can function separately in an effectively way. The consolidation of the two adjacent parcels (37 and 51) and its homes were reviewed in detail during the conceptual stages. The two homes were tested for asbestos, lead and other environmental hazards and material was discovered, as expected. The structures were evaluated by Michael Horton Structural Engineers and determined to be unsafe and in need of major repair and reconstruction. The wood framed structures do not meet the current floor loading requirements for Business type construction. Thus, an entire restoration of the walls, floors and foundations would be required. The team has taken the historical significance of Main Street into consideration and the proposed design incorporate architectural elements, massing and detailing from the neighborhood and district. The project will be constructed in various phases to allow the fire department to remain operational during construction.

The following report provides a brief narrative of the systems, elements and design intent of the project. Further development of the plans will take place during the design development and construction document phases of the project.

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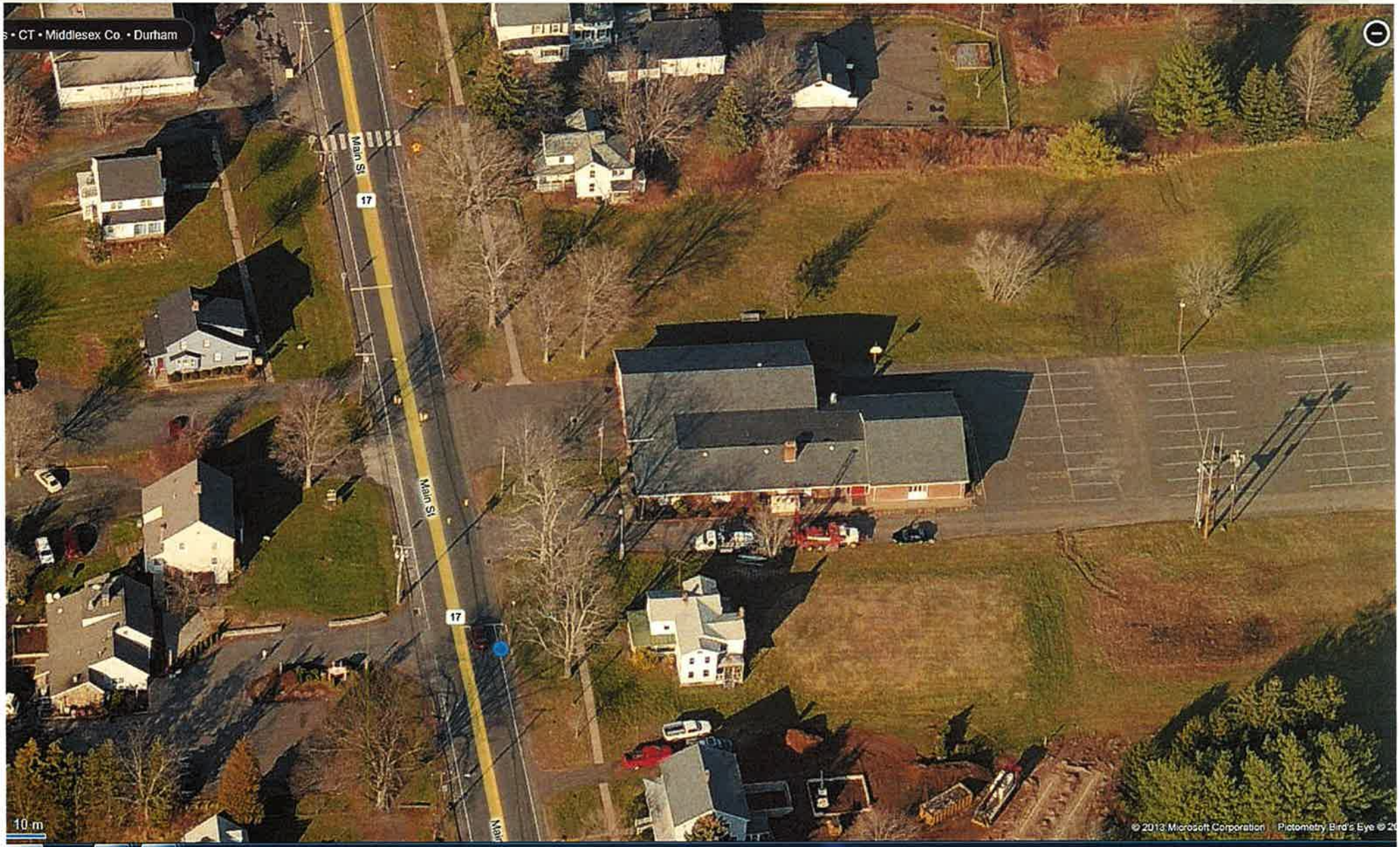

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EASTERN FUEL VAULT
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COMBUSTIBLE
NO SMOKING

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SITE/CIVIL IMPROVEMENTS

Demolition

Demolition required for the project includes razing of the existing structures at 37 and 51 Main Street and removal of the existing bituminous concrete pavement at 41 Main Street. The existing fire station leaching field, located on the Durham Fair property, will be abandoned, as will the sewer line between the fire station and the leaching fields. The existing septic system at 51 will be removed/abandoned. The existing fire horn tower will be removed.

On-site Traffic Circulation & Parking

On-site parking at 41 Main Street will be increased to provide approximately 106 regular parking spaces and five (5) handicap parking spaces. An additional (1) handicap space and four (4) regular spaces will be provided for the building at 37 Main Street. The three (3) existing driveways from the fire station onto Main Street will remain. Two of the existing driveways will be widened to accommodate the proposed facility. No driveway access is proposed to Cherry Lane as part of this project. No changes are proposed to the driveway at 37 Main Street.

All driveway areas will be surfaced with bituminous concrete pavement. A Heavy-duty pavement section (4" bit. conc. on 20" base) will be provided at all driveway and vehicle apron areas. A lighter duty (3" bit conc. on 18" base) pavement section will be provided at the parking areas. In order to minimize runoff, approximately 34 of the parking spaces will be surfaced with pervious concrete pavers rather than bituminous concrete.

Sidewalks, Accessibility and Curbing

Concrete sidewalks will be provided on-site in order to provide a pedestrian linkage between the public sidewalk on Main Street, the parking areas and the doorways. All of the exit doors from the building will have a flush condition with the adjacent sidewalk and code-conforming handicap accessible routes will be provided from the parking areas into the proposed building.

Cement Concrete curbs will be provided along all driveways and traffic islands. Although concrete curbing is more expensive initially, it holds up much better over time and it is not easily damaged by snow plows or heavy vehicles.

Landscaping & Lighting

New Site lighting and landscaping will be provided as part of the project. Generally, the new landscaping will include street trees along Main Street, building plantings, landscaped traffic islands and seeded lawn areas. The new site lighting package will be designed to provide a minimum of one (1) foot-candle of illumination in the parking areas and higher levels closer to the building.

Storm Drainage Discharge

A new storm drainage system will be installed as part of the overall site development. The storm drainage system will include a series of catchbasins and new storm drainage piping. The existing storm drainage outlet into the State Drainage System will be maintained. It will be reset to a lower elevation however. In order to mitigate the increase in peak stormwater runoff due to the proposed development a number of stormwater management areas (detenetion facilities) will be constructed. Currently, it is envisioned that two (2) of these facilities will be above-ground and three (3) will be below-ground. The underground facilities will require specialized design due to the high ground water levels of the site.

Water Supply and Wastewater Disposal

The proposed facility at 41 Main Street will be served by a municipal water supply. The current domestic service line will be removed and replaced with a larger diameter (2") service. A six (6) inch fire service line will be brought in the proposed facility. A new fire hydrant and a free-standing fire department connection (FDC) will also be provided.

Because the existing leaching system, located on the fairground property, will be abandoned, a new septic system will be provided at 41 Main Street as part of this project. As a result of soil testing performed in Dec., 2009, it was determined that the site was unsuitable for sewage disposal, in it's current condition. Subsequent site improvements (i.e. installation of a curtain drain) performed to the site, improved the ground water conditions on a portion of the site, in order to support a new Code-Conforming Subsurface Sewage Disposal System (SSDS) with a capacity of approximately 650 gpd. Because the proposed facility has a peak design flow of over 1,000 gpd, a 5,000 gal. flow equalization tank will be required. A time based dosing system will draw effluent from the equalization tank and apply to the leaching fields at a rate equal to the grounds infiltration capacity.

Because the facility will have a commercial food service kitchen, a 1,000 gal exterior grease trap is proposed in addition to a new 2,000 gal septic tank.

Because the proposed leaching area is located at the highest portion of the site and a flow equalization tank is required, a duplex (2 pump) effluent pumping station will be provided.

A new domestic water service will be provided, and the existing septic system will be reused, at 37 Main Street.

In order to properly treat the wastewater collected from the floor drains in the vehicle and apparatus bays, a 1,000 gal. oil/water separator tank will be provided. Because the site is served by an individual SSDS, the effluent from the oil/water separator will need to be stored in a double-wall underground holding tank for proper off-site disposal by a licensed disposal company. Since this tank will also take the wash water from the hose wash and decontamination shower, a 2,500 gal. tank will be provided in order to maximize the duration between pump outs.

Other Site Improvements

Other notable Site Improvements that are proposed for the project include:

An approximately 300' long retaining wall/guide rail along the westerly edge of the property. The overall height, to the top of the guide rail section is approximately 7'. This wall is required as a result of the grade difference between the driveway area and the adjacent Inland Wetlands as well as to minimize the encroachment into the Inland Wetland Upland Review Area.

A decorative, wood guide rail that will be installed between the parking areas and the above ground stormwater management areas in the NE and NW corners of the Site.

In order to address snow removal and icing concerns of the driveway courtyard area, a 6,400 s.f. radiant heat snow melt system will be provided.

The existing above ground fuel tank will be relocated.

A screened dumpster enclosure will be provided.

ARCHITECTURAL FEATURES

Plans and Elevations

The floor plans depict the organization and adjacencies of the spaces, and some of the program requirements, such as equipment or installation details, are of such scale that they are not indicated graphically in the plans. However, the opinion of probable construction cost may indicate the finishes, building systems, furnishings and equipment that will be specified and purchased under the construction contract. The Firehouse expansion/additions have been designed consistent with the original structure as a one story structure with a brick facade and a pitched asphalt shingle roof will remain throughout construction. Exterior materials will include aluminum clearstory windows, painted composite soffits, aluminum apparatus doors and aluminum or steel exterior man doors. All of the exterior materials selected were chosen to compliment the existing facility while providing a minimal maintenance application. Architectural elements and details will be provided to express a "traditional" architectural image.

The new apparatus bay doors shall be 14' x 14' sectional overhead doors with center drawbar motors with multiple door controls. The doors shall be made of solid insulated aluminum panels with thermopane glazing lights (to match the existing doors) for observation and natural light. Exterior doors shall be heavy gauge galvanized steel, with selected doors receiving vision panels, with the main entrance door being an aluminum entrance unit with aluminum glazed sidelight. Interior doors serving the apparatus bay will likewise be galvanized steel, while the remainder of the administration doors shall be solid core wood doors with birch veneer, stained and varnished to match the existing remaining wood doors. Exterior windows will be thermally broken aluminum units, with insulated low E glazing, argon filled. These will be mixed between fixed and operable units.

Interior walls will be either concrete block construction in the apparatus space for durability while all other new spaces will receive metal/wood stud walls with gypsum board applications. Walls will be painted with a semi-gloss or high gloss acrylic latex paint for durability and ease of maintenance.

The existing toilet rooms will be modernized by demolishing the existing walls, ceilings, floors, fixtures, partitions, etc and reconfiguring the spaces to include all new finishes along with the addition of lockers and showers. Floors and walls will receive new ceramic tile for durability. Ceilings will consist of painted gypsum board with an epoxy paint coating applied to them. New toilet partitions and toilet fixtures will also be provided creating a modernized, code compliant toilet facility for both male and females.

Ceilings will be 2' x 2' lay-in mineral fiber panels on a suspended grid. The new

apparatus space will be a painted exposed structure ceiling keeping consistent with the existing bays. Floors shall be bio-based vinyl composition tile with 6" coved base in all of the new office areas, with a sealed concrete floor in the new and existing apparatus bays.
Special equipment and furnishings specified for this project will include floor pedestal metal toilet partitions, metal lockers, interior signage system with accessibility features, fire extinguishers in recessed wall cabinets, and wooden benches in the shower rooms. Toilet accessories will also be provided throughout the modernized restroom facilities, and windows will receive shades/blinds. Entrance walk-off mats will be provided at the newly created main entrance/lobby.

The bunk room will be equipped with built-in bunk beds, split between the male and female room. The balance of the furniture and furnishings, including, desks, chairs, tables, kitchen utensils, linens will be a part of this project.

Energy conservation measures will be designed in accordance with the current codes. This will consist of rigid insulation over the office addition roofs, batt insulation in the apparatus bay attic space, rigid insulation in the cavity walls or block cavities and rigid insulation below grade on the foundation walls. Thermally broken and insulated aluminum windows will be provided throughout the facility (at all new window locations), and exterior doors will be insulated and weatherstripped .

STRUCTURAL SYSTEMS

DESIGN CRITERIA

All structures will be designed in accordance with 2005 International Building Code, with the 2009 State of Connecticut State Building Code Supplement. The minimum design load criteria as provided by the code, includes dead and live gravity loads, and wind and seismic loads. Dead loads consist of the weight of architectural, structural, mechanical and electrical systems. The two freestanding structures will be conventionally framed with wood structures and framing and a slab-on-grade flooring system.

FOUNDATIONS

No geotechnical exploration was done as part of this feasibility study. It will be necessary to have a thorough geotechnical report at the next phase of this project. Based on the original building design, it is assumed that the foundation system will consist of conventional continuous reinforced spread footings and foundation walls along with concrete piers extending down to a minimum depth of 42" below finished grade. Interior masonry bearing walls will also be supported in the same manner. With regard to seismic occurrences, the soil is not considered prone to liquefaction. The exterior finished grade elevation will match the building floor elevation at most all locations. All concrete slabs will be cast-in-place concrete slab on grade with

reinforcing bars. The new apparatus slab will be approximately 8-10" thick and the office addition slab will be 5" thick.

LATERAL LOAD RESISTING SYSTEM

Lateral load resistance to horizontal wind and seismic loads will be provided by the reinforced masonry bearing walls for the apparatus addition and via the perimeter steel columns. Masonry wall reinforcing will consist of vertical steel reinforcing bars and horizontal wire reinforcing. The cells of the masonry units will be grouted at vertical reinforcing bar locations only. Horizontal grouted bond beams will be located at the roof framing bearing locations and over the overhead doors.

FIRE RESISTANCE

The Construction Classification Type for this facility is 2B, noncombustible /combustible, unprotected. Therefore, the addition will be constructed using noncombustible materials, i.e. steel, concrete and masonry. The fire resistance ratings required for roof and floor structures is zero hours.

March 2, 2010

Mr. David Stein, AIA
Silver/Petrucelli + Associates, Inc.
3190 Whitney Avenue
Hamden, Connecticut 06518-2340

Subject: **Durham Public Safety Complex**
Residential Building Inspections
Durham, Connecticut

Dear David,

As requested, the writer visited the site and inspected the two residential structures flanking the existing Firehouse at 37 Main Street (Ackerman) and 51 Main Street. Our report has been based on visual observations only. No demolition or testing of materials was performed as part of our evaluation.

37 Main Street (Ackerman):
The above noted building is a two story structure with a basement and attic. The building has not been occupied for several years and serves as a miscellaneous storage space. The surrounding yard area is low and is reported to have standing water frequently. At the time of this visit there was standing water on the north side.

The structure is a wood frame type with exterior 2x4 stud walls and wood joists. There are numerous locations where the wall finishes have been broken thru to the stud space. There is no insulation present in the walls. The second floor framing is 2x6 joists spaced 16"o.c. and spanning 12 ft maximum. This floor and the first floor do not meet current load capacity for office or residential occupancy. The flooring is buckling in several locations due to damp conditions and the failure to maintain heat in the building.

The building is in very poor condition due to the lack of maintenance and would require a full gutting, replacement of all building systems, reinforcement of floors throughout and substantial exterior restoration.

Based on the above observations, it is our opinion that it is not economically feasible to restore this structure for use as offices or other commercial use.

51 Main Street
The second building, north of the firehouse, is a two story structure with a basement and attic. The building has not been occupied for several years and has damage throughout due to water leakage and vandalism.

The structure is a wood frame type with exterior 2x4 stud walls and wood joists. There are numerous locations where the wall finishes have been broken thru to the stud space. There is no insulation present in the walls. The second floor framing is 2x5 joists spaced 16"o.c. and spanning 11 to 12 ft. The existing floor framing system is flexible, subject to vibration and does not meet current load capacity for office or residential occupancy. There is a large area of water damage in the second floor due to roof leakage.

The exterior porch on this building is collapsing due to rot and the roof above is sagging due to the failing deck structure.

The building is in very poor condition due to the lack of maintenance and failure to maintain heat. In order to make this structure usable it will require a full gutting, replacement of all building systems, and reinforcement of floors throughout. The exterior envelope will require substantial restoration of siding, windows and trim.

Based on the above observations, it is our opinion that it is not economically feasible to restore this structure for use as offices or other commercial use.

Should you have any questions please contact the writer.

Sincerely,

C. Michael Horton P.E.
Michael Horton Associates, Inc.

GENERAL MECHANICAL INFORMATION

GENERAL CONSIDERATIONS

Systems will be designed in compliance with the applicable codes and standards listed elsewhere in this report. Wherever possible, sustainable design and high performance design approaches will be implemented and will qualify for energy incentive payments from the utilities.

Most mechanical and electrical systems will be removed from the existing fire station and are not documented in this report. All capacities indicated below are preliminary and will like change as the design progresses.

HVAC SYSTEMS

Two major system types are contemplated for this facility:

- **Conventional system consisting of boiler, hot water distribution system, split system air handling units with hot water coils, and air cooled condensing units.**
- **Ground source heat pump system with an earth loop, multiple water-to-air heat pumps, and a back-up boiler.**

The central boiler with the conventional system will be a high efficiency, propane fired, condensing boiler with a capacity of 600 MBH.

The ground source heat pump (i.e. geothermal) system will require and earth loop consisting of twenty closed loop vertical bores that are each 475 feet in depth. The polyethylene pipe loop that extends down into each bore is surrounded by a high heat transfer grout and each of the bores is routed back to the building – usually grouped in circuits of 3 -6 bores per circuit. The earth loop interacts with the building loop either through the use of a heat exchanger or primary secondary piping arrangement. The building loop is routed to all of the heat pumps and the back-up boiler will supplement the loop temperature at times of extreme cold weather. In concept, the system will be designed to provide full geothermal cooling.

The Fire Company Apparatus Bays will be heated by hot water unit heaters which will be sized to provide a reasonably rapid warm-up after doors are opened. General ventilation will be provided by a small (800 CFM) supply fan that will run continuously. An independent exhaust system (8200 CFM) will be installed to purge vehicle exhaust fumes when levels of carbon monoxide and/or nitrous oxides exceed threshold values. CO detectors will be located low and NO_2 detectors will be located high to sense gas concentration levels. A supply fan will provide make-up air to the space as the exhaust fan is running and this air can be tempered or untempered. The decision will be based on the anticipated number of calls received during cold weather

months and the level of inconvenience associated with waiting for normal space temperatures to be restored. If it is decided to heat the make-up air, a propane fired duct furnace can be utilized. Air cleaning equipment will be mounted in the ceiling to remove hydrocarbons from the space.

The Hose Drying, Bulk Storage, and SCBA Storage rooms will be served by a small air handling unit (400 CFM) that will provide heating (hot water duct coil) and ventilation to those areas.

Offices, Bunk Rooms, and other spaces in the southwest corner of the first floor will be served by a six ton system. Heating will be accomplished by a hot water duct coil and cooling will be accomplished by a split system or water-to-air heat pump.

The central portion of the first floor will be served by an eight ton system. Heating will be accomplished by a hot water duct coil and cooling will be accomplished by a split system or water-to-air heat pump.

The Conference Room, Assistant Chief's office, and Chief's office will be served by a three ton system. Heating will be accomplished by a hot water duct coil and cooling will be accomplished by a split system or water-to-air heat pump. The Conference Room will be provided with a variable air volume diffuser or other means of providing zone control.

Air conditioning for the Server Room will be provided by a small ductless split system rated for two tons. A water-to-air heat pump could also be utilized if that system is selected.

The Bunk Rooms and Day Room near the northeast corner will be served by a six ton system. Heating will be accomplished by a hot water duct coil and cooling will be accomplished by a split system or water-to-air heat pump.

The Coordinator's Office, Secretary/Treasurer's Office, and Corridor near the northeast corner will be served by a four ton system. Heating will be accomplished by a hot water duct coil and cooling will be accomplished by a split system or water-to-air heat pump.

Hot water cabinet heaters or convectors will be provided in toilet rooms, stairs, and entries.

Exhaust fans will be provided for all toilet rooms and custodial areas and will be interlocked with lighting for those spaces.

The Ambulance Apparatus Bays will be heated by hot water unit heaters which will be sized to provide a reasonably rapid warm-up after doors are opened. General ventilation will be provided by a small (400 CFM) supply fan that will run continuously. An independent exhaust system (3800 CFM) will be installed to purge vehicle exhaust fumes when levels of carbon monoxide and/or nitrous oxides exceed

threshold values. CO detectors will be located low and NO_2 detectors will be located high to sense gas concentration levels. A supply fan will provide make-up air to the space as the exhaust fan is running and this air can be tempered or untempered. The decision will be based on the anticipated number of calls received during cold weather months and the level of inconvenience associated with waiting for normal space temperatures to be restored. If it is decided to heat the make-up air, a propane fired duct furnace can be utilized. Air cleaning equipment will be mounted in the ceiling to remove hydrocarbons from the space.

The second floor Conference Room will be served by a two ton system. Heating will be accomplished by a hot water coil in the air handling unit and cooling will be accomplished by a refrigerant coil served by an outdoor air cooled condensing unit. Alternatively, a water-to-air heat pump could be utilized employed if that system option is selected.

The Commercial Kitchen will utilize a Class 2 hood and the associated exhaust fan will be an in-line type located in the attic space and Listed for kitchen exhaust (i.e. grease laden vapors). Listed factory ductwork will be utilized and the discharge will need to be at least forty inches above the roof. Make-up air will accomplished through the use of transfer air from the training room. Heating will be provided by a ceiling cabinet heater, but cooling will only be accomplished by transfer air.

The Training Room on the second floor will be served by a ten ton system. Heating will be accomplished by a hot water coil in the air handling unit and cooling will be accomplished by a refrigerant coil served by an outdoor air cooled condensing unit. Alternatively, a pair of water-to-air heat pumps could be utilized.

The EOC Communications Dispatch room will be served by a two ton split system or water-to-air heat pump.

The Carriage House will require heating, but the space temperature requirement will be approximately 50°F and this will be accomplished by propane fired unit heaters. Ventilation will be provided by exhaust fans.

The 37 Main Street building will be served by three small (1-1/2 ton) split systems consisting of indoor propane furnaces and outdoor air cooled condensing units. Also, a small (1-1/2 ton) ductless split system will be provided for the Data Closet on the second floor.

An Energy Management System is recommended for this building because it would provide the ability to monitor, control, and adjust all HVAC (along with plumbing and electrical if desired) systems from a central location. An operator workstation consisting of a personal computer and printer can be located in the building, and this station can be accessed remotely via the internet. The system can used to set occupancy schedules, adjust setpoints, and monitor trouble/alarm conditions in an efficient manner with this tool. Features such as night setback, holiday scheduling and weekend scheduling will be included to allow the system to minimize energy

expenditure during unoccupied periods. An alarm feature will be added which can remotely notify facilities staff of any pre-determined, alarm conditions.

PLUMBING SYSTEMS

A new domestic water service will be brought into the building and the need for pressure boosting or reduction will be determined during the design process. Cold water will be distributed throughout the Fire/Ambulance building to Apparatus Bay outlets, Day Room sinks (stainless steel), Toilet Room fixtures (lavatories and water closets), showers, Commercial Kitchen sinks (two compartment, three compartment, and staff handwash), Janitor's Closet mop sinks, interior hose bibs, gear wash equipment, drinking fountains, boiler make-up line, domestic water heater, and exterior non-freeze wall hydrants. A branch line will be routed underground to the new 37 Main Street building, but it is not anticipated that water will be provided to the Carriage House. The existing concrete sump will be utilized to store water for tanker fill. Cross-connection control measures will be provided at the service entry and at individual fixtures/appliances throughout the building to prevent contamination of the public water supply.

Domestic water heating will be accomplished by a high efficiency natural fired unit. Hot water will be distributed to lavatories, Day Room sinks, gear wash equipment, Commercial Kitchen sinks, showers, and Janitor's Closet mop sinks. Tempering valves will be provided as needed. A recirculating line will be provided and the pump will be controlled by both a temperature controller and time clock.

Along with conventional drainage and venting systems, specialty products will be provided and they will include floor sinks in the Commercial Kitchen, trench drains in the Apparatus Bays, and an exterior, underground grease interceptor (1,000 gallon capacity) will be provided to handle waste from the Commercial Kitchen. Floor drains will be provided in all shower areas and in other spaces deemed appropriate.

A new air compressor will be provided to serve both the Fire Company and Ambulance Apparatus Bays. The compressor will be 7-1/2 HP with an 80 gallon receiver and refrigerated air dryer. Two pressure regulating valves will be provided so that separate distribution can be provided for outlets serving tires and those for air brakes and general purpose needs. Propane will be routed to the make-up air duct heater serving the Fire Company Apparatus Bays if the heating option is selected. Branch mains will be routed underground to Carriage House and to 37 Main Street.

FIRE PROTECTION SYSTEMS

A new fire service main will stub-up within the building and the system riser will be installed in that location. A dry system will be required to serve areas subject to freezing including attic areas. Sprinkler coverage will be provided for all areas of the building which will have hazard classifications ranging from Light to Ordinary Group 2. A hydrant flow test will be conducted to determine available pressure and will hopefully confirm that a fire pump is not required. Sprinkler protection will not be

provided for the Carriage House or for 37 Main Street.

ELECTRICAL

The existing electrical service is rated at 120/208 Volt, 3 Phase, 300 Amp. Given the level of alteration to the existing building and associates services, historical demand information from CL&P will be of limited use in evaluating the final electrical demand. Preliminary calculations indicate that a 1000 amp, 120/208 volt, 3-phase service will be required. This calculation is based on powering both of the remote buildings off of the main building service. Given the proposed location of the new main electrical room, the new pad mounted transformer would be located in the "notch" on the north side of the building. The new CL&P primary service will most likely require a new utility pole on the property between the main building and the Carriage House. Primary cable will drop underground from this pole and run underground to the transformer. The 1000 amp secondary service will run from the transformer underground to a new main electrical room. The existing service can then be temporarily backfed to allow for a gradual removal of the existing equipment. All of the existing Federal Pacific panels are nearing the end of their useful life and replacement components are difficult to find. The existing utility pole between the Main Building and 37 Main Street will be removed once the new services are active.

A new diesel fired generator will be installed to provide back-up power for the entire facility. Preliminary calculations indicate that a 200 kW unit will be required. The generator will be installed on a pad outside the building, most likely near the new utility transformer. The need for 100% back-up power will be further evaluated during design. Some loads could be easily locked out when operating on generator power. We anticipate the need for six sub-panels located throughout the facility. This includes one in each of the remote buildings.

Branch circuits will serve all HVAC equipment, kitchen loads, overhead doors, general building loads, lighting, and general purpose receptacles. GFCI type receptacles will be provided in the apparatus bays, in toilet rooms and outside the building. Cord reel drops will be provided for vehicle charging in locations coordinated with the Owner. All wiring will be concealed to the extent possible. Power wiring concealed in ceilings or above walls will be run with armored type MC cable. Exposed wiring in unfinished spaces will be run in EMT. Exposed wiring in finished spaces will be run in surface raceway (Wiremold).

Exterior lighting will consist of building mounted canopy fixtures, and full cutoff wallpack fixtures. Lantern style decorative fixtures can be evaluated for the front of the building. Floodlight fixtures or in-ground well lights will be utilized for site mounted signs and the flagpole. Any pole lights required in front of the building will match the existing Main Street standard fixtures. Pole lights for the rear parking area will utilize more efficient and cost-effective shoebox style full cutoff fixtures. Most or all exterior fixtures will utilize LED lamps and will be controlled by time clocks and photocells.

Interior lighting will be provided by fluorescent fixtures utilizing T8 lamps and electronic ballasts. Surface mounted vapor tight fluorescent fixtures will be used in the apparatus bays. Recessed fixtures with prismatic lenses will be provided in most other areas. Wall mounted fixtures with independent up and down light control will be used in the bunk rooms. The Training Room, Conference Room and Office lighting will be from recessed high performance lensed fluorescent light fixtures. The need for dimming controls will be evaluated with the Owner during design. Night lights will be provided where directed by the owner. Where sufficient ambient light exists, these will be controlled by photocell. Occupancy sensors will be installed in most areas to allow for energy conservation.

Emergency lighting will be provided by connection of all lights to the emergency generator distribution. Required egress paths will be controlled via UL924 relays with two sources so that the loss of any one circuit will not leave a space in darkness. New exit signs will be provided throughout the space. These will utilize LED lamps for energy efficiency and low maintenance.

The existing Silent Knight zoned fire alarm system does not have the ability to serve the new facility and a complete new system will be provided. The system will include a control panel installed in the main electrical room and a remote annunciator installed near the new south entrance. Peripheral devices will include manual pull stations at all exits, smoke or heat detectors in most areas, CO detectors near bunk rooms, and notification devices (horns and strobes) as required by code. The system will be a small addressable type. Automatic detection will be provided throughout the facility. This level of detection is not required by code and could be reduced if requested. A digital transmitting device will be installed to provide automatic communication with a remote monitoring service. A remote power supply will be installed in each of the two remote buildings and similar fire alarm coverage will be provided in these structures.

A complete phone system will be provided with the demark equipment and punch down block in the Electrical Room. Phones will be located throughout the facility as directed by the owner. The phone system will include a public address feature which we anticipate will be linked to the radio speaker system for paging throughout the complex.

The network head-end/data rack will be located in a dedicated room on the first floor of the main building. This will support local data outlets throughout the facility as directed by the owner. We anticipate that fiber will be run to the 37 Main Street office building and a small wall rack in each will provide for communication connectivity to the main system. We anticipate that only phone and PA functions will be required in the Carriage House.

Television outlet locations with standard coax jacks and cable will be provided as directed by owner. These will be run to a common location for anticipated connection to a service provider distribution.

The radio system will be supplied by the owner. Power needed for this system will be provided from the building electrical system. Special antenna or grounding requirements can be provided in our documents if the exact needs are defined by the radio system designer. Control of building systems (lights, overhead doors, etc) via the radio system will be coordinated as directed by the Owner.

Empty conduits for telephone, internet and CATV service provider use will be provided from the building to the new utility pole on the east side of Main Street. Coordination with these service providers will need to be provided by the Owner.

We anticipate that audio visual equipment currently installed in the Meeting Room will be retained for reuse. Other new AV equipment is anticipated to include monitors in multiple office and training locations, digital projectors in training locations, and (if desired) monitors for call/apparatus status in the apparatus bays.

Security system features will include electronic access control at doors coordinated with the Owner, perimeter intrusion detection, and video surveillance. The exact scope and complexity of this system will be coordinated during design. The attached estimate includes a relatively small system (approximately 8 cameras and 15 access controlled doors).

We have been in contact with Craig Harrigan from Encon Solar Energy and are awaiting the preliminary information they provided for the building. There are several areas on the existing building roof with good south facing exposure. Our rough evaluation indicates that a system between 8 kW and 15 kW could be installed. A system in this range would be expected to generate between 9000 and 20,000 kilowatt-hours per year thus saving $1500 to $3500 in energy costs annually. The approximate initial cost of a system in this size range would be between $50,000 and $90,000 however, the Encon installation is proposed to be accomplished under a power purchase agreement. In these agreements, there is typically little or no initial cost to the Owner. The system is installed, owned and maintained by Encon but the Owner gets the advantage of reduced energy costs.

PROGRAM INFORMATION

Schematic Design Submission

Durham Public Safety Complex
37, 41 and 51 Main Street
Durham, Connecticut, 06422

SP&A Project No. 09.028

Silver Petrucelli & Associates, Inc. ©

FUSS & O'NEILL
EnviroScience, LLC

MEMORANDUM

TO: Silver Petrucelli & Associates

FROM: Fuss & O'Neill EnviroScience, LLC

DATE: March 1, 2010

RE: Durham Public Safety Project Building Site Observations

Below are EnviroScience's observations based on the limited hazardous materials inspection performed within the structures located at 37 Main Street, 41 Main Street, and 51 Main Street in Durham, Connecticut.

37 Main Street is a two story residential structure with a basement and attic that was being utilized as a storage area for the town department of public works. At the time of the inspection the basement was inaccessible because it contained approximately 6 feet of water.

Accessible asbestos containing flooring materials is located in the kitchen and bathroom of the first floor, while inaccessible asbestos containing piping materials is assumed to be located within walls, above ceilings, and in chases throughout the structure as well as within the basement. It is also assumed that asbestos containing materials associated with the interior materials of a boiler unit is located in the basement. Exterior asbestos containing roofing materials is located throughout the roof of the structure.

Lead-based paint is located on the interior finishes, mainly on metal ceiling panels and wood wall panels and door jambs, throughout the structure. Exterior siding, window systems, door systems, and porch systems also contain lead-based paint.

The kitchen, bathroom, and second kitchen on the first floor contain damaged finish ceiling materials, suspect mold growth, and evidence of a water leak. Possible structural issues associated with water damaged structural supports may be encountered in these areas. A structural engineer should be contracted to investigate possible structural issues. The exterior wood siding, window systems, doors systems, and porch systems contain wood rot. The porch systems may be structurally unsound and should also be inspected by a structural engineer. Due to the fact that the basement is flooded; possible structural issues associated with the structural framing and/or foundation of the structure may be encountered.

41 Main Street is single story firehouse structure with a crawl space and attic that was being utilized as a volunteer fire department and town meeting room. At the time of the inspection the crawl space was inaccessible due to a specialized key required to open the hatch – additionally the crawl space displayed permit required signage.

Accessible asbestos containing flooring materials is located throughout the structure with the exception of a few locations, mainly the garage room, toilet rooms, and side foyer. Additionally, accessible asbestos containing piping materials and transite paneling are located in the boiler/furnace room. Inaccessible asbestos containing piping materials is assumed to be located within walls, above ceilings, and in chases throughout the structure as well as the interior materials associated with the boiler unit. Exterior asbestos containing roofing materials are located on the roofs.

Lead-based paint is located on the interior metal door jambs throughout the structure.

51 Main Street is two story residential structure containing a basement and attic that was not being occupied at the time of the inspection.

Accessible damaged asbestos containing ceiling and wall plaster materials is located throughout the first and second floor of the structure. The damaged ceiling and wall plaster has contaminated the non-asbestos containing materials in the structure; requiring contaminated materials to be treated as asbestos contaminated waste throughout the structure. Inaccessible asbestos containing piping materials assumed to be located within walls, above ceilings, and in chases throughout the structure as well as the interior materials associated with the boiler unit. Asbestos containing roofing materials is located on the roof of the structure.

Lead-based paint is located on the sheetrock walls and wood baseboard and door jambs throughout the interior of the structure. Additionally lead-based paint is located on the wood siding, window systems, door systems, and porch systems.

Large volumes of damage to finish materials are located throughout the structure. Possible structural damage is located on the second floor of the structure in the hallway near the bathroom; a structural engineer should be retained to investigate possible structural issues. The exterior wood siding, window systems, doors systems, and porch systems contain wood rot. The porch systems may be structurally unsound and should also be inspected by a structural engineer.

Memorandum prepared by:

Kevin McCarthy
Environmental Analyst II

Memorandum reviewed by:

Matthew Myers
Associate

TRAFFIC STUDY
DURHAM PUBLIC SAFETY FACILITY
DURHAM, CONNECTICUT

March 18, 2010

MMI #3373-04-1

Prepared for:

Mr. David Stein
Silver Petrucelli & Associates
3190 Whitney Avenue
Building #2
Hamden, CT 06518

Prepared by:

MILONE & MACBROOM, INC.
500 EAST MAIN STREET, SUITE 326
BRANFORD, CT 06405
(203) 481-4208

www.miloneandmacbroom.com

Engineering,
Landscape Architecture
and Environmental Science

MILONE & MACBROOM

March 18, 2010

Mr. David J. Stein, AIA
Silver/Petrucelli & Associates
3190 Whitney Avenue, Bldg 2
Hamden, Connecticut 06518

RE: Durham Public Safety Facility
Durham, Connecticut
MMI #3373-04-1

Dear Mr. Stein:

At your request, we have undertaken a study to determine traffic implications associated with the proposed renovation and additions to the Durham Public Safety Facility on Route 17 (Main Street) in Durham, Connecticut. The site currently contains the town firehouse and two formerly occupied residences. The three town-owned properties are intended to become a unified emergency services complex containing a modernized firehouse and space for relocation of the Durham Volunteer Ambulance Corps, town emergency operations center, and offices of the fire marshal, resident state trooper and town emergency management department. Figure 1 depicts the site location and area roadways.

The work comprising this study consisted of a number of tasks including a field reconnaissance and inventory of present roadway conditions. Subsequent steps dealt with estimation of new site traffic and an evaluation of the project's traffic impact. This report contains descriptions of our data collection, analyses and findings.

Roadways and Site Environs

The site is located on the east side of Route 17 about half way between Town House Road and Route 79 (Madison Road) in Durham. Further to the north is Route 68 (Durham Wallingford Road). The site consists of three town-owned properties, with addresses at 37, 41, and 51 Main Street. The town firehouse is located at 41 Main Street, situated between vacant former residences at 37 and 51 Main Street.

Route 17 runs north and south through town from Middletown to North Branford. It has one travel lane in each direction with shoulders and a regulatory posted speed limit of 30 miles per hour near the site. An advisory speed limit of 25 miles per hour is posted near the Frank Ward Strong Middle School to the north of the site. The width of Route 17 near the site is around 33 feet, offering marginal room for bypass of vehicles turning left off the road. A passenger vehicle, for instance, has enough room to usually bypass another passenger vehicle. A larger vehicle such

as a single unit truck, however, is not able to bypass a passenger vehicle. Exclusive turn lanes exist at nearby signalized intersections with Route 79 and Route 68. Sidewalks are present near the site, along the east side of the street and portions of the west side, as are some crosswalks. The surrounding area is mostly a mix of low density residential and commercial uses, with some institutional uses such as the town hall, post office, library and fairgrounds.

Accidents

Traffic accident statistics for Route 17 between Routes 79 and 68 were furnished by the Connecticut Department of Transportation (ConnDOT) for the three-year period of July 1, 2005 through June 30, 2008. The information was summarized by location, accident severity and collision type, and is shown in Table 1.

There were 60 accidents recorded during this period on Route 17 within the study area. The majority of accidents, just over half, were rear end collisions. Approximately one-quarter of the accidents resulted in reported injuries. The rest involved property damage only. Large clusters of accidents occurred on Route 17 between Route 79 and Town House Road, between Old Cemetery Road and Route 68, and at some signalized intersections.

The site frontage is located on the section of Route 17 between Route 79 and Town House Road. Of the 15 accidents along this section, 11 were reported to have occurred south of the site between the Route 79 signal and the gasoline station. Two of the 15 accidents occurred close to the site and two other accidents occurred north of the site near Town House Road. Many of the accidents resulted from motorists either failing to grant the right of way or following too closely. The two accidents that occurred near the site frontage both involved driveways on the west side of Route 17. Both of these accidents involved left turnings motorists from side driveways that failed to grant the right of way to southbound through traveling vehicles on Route 17.

Table 1
ACCIDENT SUMMARY

LOCATION: Route 17	ACCIDENT SEVERITY			TYPE OF COLLISION								
				TURN								
	INJURY	PROPERTY DAMAGE	TOTAL	INTERSECTING	SAME	OPPOSITE	REAR END	SIDE SWIPE	FIXED OBJECT	BACK-UP	PEDESTRAIN	TOTAL
At Route 79		5	5				5					5
Between Route 79 and Town House Road	3	12	15	6	1		5	1	1	1		15
At Town House Road	1	1	2					1	1			2
Between Town House Road and Fowler & Maple Avenues		3	3				3					3
At Fowler & Maple Avenues	3	4	7	1		1	5					7
Between Fowler & Maple Avenues and Old Cemetery Road		4	4				2		2			4
At Old Cemetery Road		2	2				1		1			2
Between Old Cemetery Road and Route 68	6	3	9	1			4		3		1	9
At Route 68	3	10	13	1		2	8	1		1		13
TOTAL	16	44	60	9	1	3	33	3	8	2	1	60

Source: ConnDOT from July 1, 2005 to June 30, 2008.

Proposed Development

The *Final Report of the Emergency Services Facilities Committee (Aug. 2007)* was reviewed in order to understand the subject development. The site, consisting of the town firehouse at 41 Main Street and vacant former residences at 37 and 51 Main Street, is proposed to be renovated into a single emergency services complex. The goal of the project is to bring all of the town's public safety and emergency services onto the same site. This will entail modernization and expansion of the firehouse to include additional space for relocation of the town's volunteer ambulance corps and Emergency Operations Center. The vacant former residence at 37 Main

Street is to be renovated in order to house the relocated offices of the fire marshal and resident state trooper, as well as include the addition of a rear garage. The vacant former residence at 51 Main Street is proposed to be renovated to contain space for relocation of the town emergency management department.

The three separate structures comprising the current site total around 13,000 square feet. The proposed development will increase the site's building area to approximately 22,625 square feet. A total of around 130 parking spaces are planned. Review of the site plan indicates that vehicle access for the site will include four driveways at Route 17, the same number of driveways as currently exists. These include a two-way access for 37 Main Street that is to remain unchanged, a driveway for the firehouse parking lot that is to be changed from two-way to an entrance-only and also serve 51 Main Street, the fire engine garage driveway that is to be expanded with the addition of ambulance service, and an exit only driveway from the firehouse parking lot to also provide egress from 51 Main Street. This last driveway previously served as sole two-way access for 51 Main Street. One-way circulation is to exist in a counter-clockwise fashion around the firehouse building.

Visibility was reviewed in accordance with ConnDOT guidelines from the driveway locations that are to provide vehicular site egress. Travel speed information was obtained from ConnDOT for vehicles on Route 17 nearby. The 85th percentile speeds were recently recorded to be 42 miles per hour in the northbound direction and 40 miles per hour in the southbound direction near Fowler Avenue, just north of the site. According to the state guidelines, these speeds correspond to desirable sight distances of 467 feet and 445 feet, respectively. As such, clear visibility for motorists waiting to egress the separate site driveways onto Route 17 is desired for distances of 467 feet looking to the left and 445 feet looking to the right. Field review of visibility conditions indicates that the available sight distances from all of the proposed points of vehicular site egress meet state guidelines.

Current Traffic

Information on weekday traffic volumes for roadways near the site was obtained from the Connecticut Department of Transportation (ConnDOT) for six nearby traffic monitoring locations. Table 2 summarizes the information taken from Automatic Traffic Recorder (ATR) data at those locations. The data shows that the Average Daily Traffic (ADT) for the year 2007 ranged from 18,000 vehicles on Route 17 between Routes 68 and 79 to 8,000 vehicles on Route 79 south of Higganum Road.

Table 2
2007 CONNDOT TRAFFIC VOLUMES

LOCATION	AVERAGE DAILY TRAFFIC	WEEKDAY MORNING PEAK HOUR TRAFFIC	WEEKDAY AFTERNOON PEAK HOUR TRAFFIC
Route 17 north of Route 68	17,200	1,292	1,493
Route 17 south of Route 68	18,000	1,367	1,642
Route 17 north of Route 79	18,000	1,450	1,734
Route 17 north of Route 77	10,100	749	950
Route 68 west of Route 17	8,900	807	818
Route 79 south of Higganum Road	8,000	689	883

Source: Connecticut Department of Transportation

To supplement this data, turning movement counts were assembled for the following Route 17 intersections: at Route 68, at Route 79, and at the existing site driveways. The counts were manually conducted on Thursday, December 10, 2009 during the morning and afternoon commuter periods between 7:00 – 9:00 A.M. and 4:00 – 6:00 P.M., respectively. The peak hour during the morning was found to be from 7:00 – 8:00 A.M. During the afternoon, the peak hour was from 5:00 – 6:00 P.M. Figures 2 and 3 illustrate existing traffic flows during the weekday morning and afternoon peak hours, respectively.

New Site Traffic

Review of the *Final Report of the Emergency Services Facilities Committee (Aug. 2007)* finds that the proposed renovation and additions to the facility are to be largely used by officials and employees that already currently work at the site or within the study area. As mentioned earlier, the study area covers the stretch of Route 17 from Route 68 to Route 79. The volunteer ambulance corps, for instance, currently located on Route 17 near the Frank Ward Strong Middle School, is to be relocated to the site from within the study area. Existing traffic that is associated with the departments and offices being relocated to the site is essentially going to continue to enter and exit the study area as it currently does. However, it will then be redistributed within the study area to the new site. Some amount of new site traffic could be additionally expected to be generated if new employees are hired to fill any extra space not initially dedicated to the relocated departments and offices. This amount of new site traffic would likely be light.

increased by this same annual rate to reflect ambient growth over a four year period (2.0%) to an estimated build year of 2013. Although no future year completion date has actually been determined at this time, 2013 has been assumed for the purpose of this study. Figures 5 and 6 show the 2013 background traffic volume estimates for the weekday morning and afternoon peak hours, respectively.

The estimated site traffic volumes were then added to the background traffic to form the future combined (build) traffic volumes. The combined volumes are reflective of roadway conditions with the proposed development in place. Figures 7 and 8 depict the 2013 combined traffic volumes at the study intersections for the weekday morning and afternoon peak hours, respectively

Capacity Analyses

The surrounding roadways and their estimated peak hour traffic volumes were evaluated by means of capacity analysis techniques through the use of Synchro 7. A comparison of the background and combined analysis results were used to determine the traffic impact of the proposed development. These analyses were conducted for the study intersections and a Level of Service (LOS) was determined. The LOS is a qualitative measure of the efficiency of operations of intersections in terms of delay and inconvenience to motorists. A description of the various LOS designations. A through F, is given in the Appendix. Table 4 summarizes the analyses results.

No Level of Service changes are expected from background to combined conditions for the signalized study intersections. From a traffic impact standpoint, this means that the area roadways are anticipated to experience little to no perceptible traffic impact from the proposed development. It is important to note, however, that the intersection of Route 17 at Route 68 will continue to operate with a poor LOS E during the weekday afternoon peak hour whether or not the proposed development is completed. With the development of the emergency services complex, the site driveway configurations will be changed. Nevertheless, these unsignalized site driveways will also largely operate with the same Levels of Service between conditions without and with the proposed development. Motorists turning into the site will continue to do so with very little delay. Exiting motorists, especially during the weekday afternoon peak hour, will continue to experience notable delays taking a left hand turn.

TABLE 4
CAPACITY ANALYSIS SUMMARY

INTERSECTION/APPROACH	LEVEL OF SERVICE			
	WEEKDAY MORNING PEAK HOUR		WEEKDAY AFTERNOON PEAK HOUR	
	BACKGROUND	COMBINED	BACKGROUND	COMBINED
SIGNALIZED				
Route 17 at Route 68	D	D	E	E
Route 17 at Route 79	B	B	B	B
UNSIGNALIZED				
Route 17 at Site				
Southbound Left	A	A	A	A
Westbound Left / Right	D	D	F	F

Summary and Conclusion

A study was conducted to assess traffic implications associated with proposed renovations and additions to the Durham Public Safety Facility on Route 17 in Durham. A detailed field reconnaissance, data assembly effort, and traffic counting program were undertaken to determine a profile of existing conditions. New trips generated by the proposed development were estimated. Analysis of the additional traffic to Route 17 shows that no changes in Level of Service are expected at the signalized study intersections. Motorists exiting the unsignalized site driveways onto Route 17 will continue to experience delays during peak hours due to heavy Main Street traffic. This is similar to operations at other nearby unsignalized driveways. Sight lines were also reviewed from the points of vehicle site egress and found to meet state guidelines.

It is important that appropriate signage be installed in connection with the proposed development. This includes STOP signs, as well as stop-bars, at each driveway egress location. Appropriately placed DO NOT ENTER signs should be installed to help regulate the proposed one-way circulation around the firehouse building. Angled parking should also be considered to help regulate the proposed one-way circulation. Signage, vegetation, and/or fencing near the site driveways should be placed and/maintained so as to not obscure motorist visibility.

We hope this report is useful to you and the Town of Durham. If you have any questions or need any further information, please do not hesitate to contact us.

Very truly yours,

MILONE & MACBROOM, INC.

David G. Sullivan, P.E. – Associate
Senior Transportation Engineer

	Durham Public Safety Facility			Revised Draft - September 6, 2012
	Program Analysis			
	Volunteer Ambulance Corps			
	Program Space	**Client SF**	Proposed SF	**Comments**
1	4 Apparatus Bays (15'6"w x39' l)	2854	2560	1 should be indoor wash bay
2	Gear Locker Area	270	286	AEDs, jump kits, uniform/turnouts, PPEs
3	Bulk Storage	160	160	supplies for ambulance, support equippment
4	Vehicle maintenance supply storage	x	130	space for rolling toolbox, 3-ton floor jack (1ft wide), 4 jack stands. Closet to hold solvents/fluids, spare parts.
5	Personnel/Equipment Decon		70	Adjacent to bays with outside access
6	Day/Ready Room	500	500	accommodate 5 - 6 persons
7	Kitchen/Kitchenette	x		see above
8	Bulk Storage	160	140	
9	Bunk space	x	300	3 rooms, ea with 2 bunk beds and small desk/chair, to accommodate total of 6 persons
10	Chief's office	168	**180**	
11	Dep Chief office	145	**180**	
12	Secretary/Treasurer/Billing Office	316	335	accommodate 3 desks. Needs closet for HIPAA-compliant document storage
13	Shared Coordinators Office	168	145	
14	Restrooms, 1 ea M/F	x	266	include shower
15	Janitor Closet	x	42	
16	Oxygen Storage	x	95	adjacent to apparatus with separate entry
		4741	5389	sub total sqft
	Volunteer Fire Company			
	Program Space	**SQFT**		**Comments**
1	6 Existing Apparatus Bays (650 sf ea)	3723	3600	(6) at 600 SF ea
2	2 New Large Apparatus Bays (900 sf ea)	1800	**1820**	(2) at 900 SF each - 23' wide
3	Watch/Dispatch Room	146	150	
4	Gear locker Area			Intended for turnout gear if left at station. Could be in gear wash area if size accommodates this.
5	Bulk Storage	x	**204**	
6	Apparatus Storage	111	140	For extra tires, chains, foam.
7	Hose Drying/Storage		**332**	Need to accommodate (10) 50' length's of hose for drying plus storage 150 is too small.
8	Mechanics / Engineers Work Room	198	**195**	Must be adjacent to bays
9	Mechanics / Engineers Store Room	200	**102**	Adjacent to 9 above, adjacent to bays
10	Quartermaster/Supply Room	300	**341**	Ideally near gear wash area
11	Day/Ready Room		485	should accommodate 20 persons
12	Kitchen	200	120	placed off day room
13	Pantry	x		see above
14	Bunk space	x	300	2 sets of 2 beds each to accommodate 4 persons
15	Misc. storage	205	180	two rooms (72+108=180 SF)
16	Fire Chief Office	147	155	
17	Asst Fire Chief Office	212	208	
18	Secretary/Treasurer Office	x	208	minimum 200 sq ft
19	Janitor Closet	40	80	plug DH
		7282	8620	sub total sqft
	Combined/Shared Space			
	Program Space	**SQFT**		**Comments**
1	SCBA Tank Storage (Fire)	x	**181**	Close proximity to bays. Fill station/cascade includes compressor approx 4' x 6'. Shared space depends on location in floorplan. Min. of 150 sq ft.
2	Flammable storage	70	70	
3	Commercial kitchen	345	400	Connected to Training/EOC
4	Pantry	112	85	
5	Training/EOC Storage	196	215	adjacent to EOC/multifunction room 2nd floor
6	Janitor Closet	100	68	may need to eliminate in favor of 1 ea on both ends of building
7	Uniform/Linen Storage	232	220	assigned sq footage size seems large
8a	Elec	200	**238**	New building
8	Mech	365	350	New building
9	Mech/Elec	201	180	Existing building
10	Men's Locker Room	423	435	
11	Women's Locker room	347	356	
12	Men's Public Restroom	169	70	
13	Women's Public Restroom	155	70	
14	Tele/Data (a.k.a. 'Server room')	128	**190**	Assigned sq footage too small. Approx 180 sq ft needed. Will need AC, air handling. Houses computer server and backup, radio transmitter/repeater. Location?
15	Exercise Room	494	**568**	Contents to be determined
16	Conference Room	372	**447**	
17	Communications storage	100	112	Radios, pagers, batteries, chargers, work space
18	Laundry wash-dry/Gear wash	x	220	Commercial unit for turnouts, and domestic unit for sheets/towels/assorted washable items.

19	Secure/consumable storage	x	215	
20	Chair/table storage	x	400	located on 2nd floor near multi-function room
		4009	5090	Sub Total sqft
	Department of Emergency Management			
	Program Space	**SQFT**		**Comments**
1	Emergency Operations Center/MPR	2500	2700	Multi-Purpose Training Room With Room Separation Dividers
2	Communications/Dispatch Area	400	450	4 - 6 persons, 2 work stations (if activated). Accessible to EOC.
3	Training/EOC - Equipment storage	200	215	also listed under "Combined/Shared space"
4	~~Server Room~~	200	85	Shown in Combined/Shared Space above, Note recommendation for size requirement, Shared by EMS/Fire/EM-EOC.
5	Shared Conference Room (2nd Floor)	372	485	Conference Room needs to be accessable from EOC and Hallway
6	EOC Men's Room	108	167	
7	EOC Women's Room	108	154	
		3888	4256	Sub Total sqft
	Resident State Trooper			
	Program Space	**SQFT**		**Small Scheme**
	Trooper Office (2)	250	150	150
	Processing/Workroom Area	100	100	42
	Secure File Storage	100	30	28
	Equipment storage	80	24	18
	Secretary Area	100	148	140
		630		
	Fire Marshal			
	Fire Marshall's office	120	140	142
	Office Staff (3) cubicles/work stations	180		see above
	Plan Room and File Storage	100	65	12
	Evidence Storage	80	60	10
	Combined			
	Small Meeting/Conference Room	300	160	168
	Secure Entry	50		
	T/Data	100	40	18
	Restroom	50	110	54
	Shower and Locker Room	60		see above
		560	1027	240

Durham Fire Apparatus Inventory				
App	Length	Width	Hight	Apparatus Type
D-1	30 ft	9 ft	11 ft	Pumper/Water Supply
D-2	30 ft	9 ft	10 ft	Engine/Pumper
D-3	35 ft	9 ft	9 ft	Rescue/Pumper
D-4	28 ft	9 ft	10 ft	Engine/Pumper
D-5	25 ft	9 ft	7 ft	Brush/Traffic Control
D-Tanker	31 ft	9 ft	10 ft	Tanker
Model A	19 ft	7 ft	5ft	
Boat	18 ft	7 ft	4 ft	
Gator Trailer	21 ft	9 ft	9 ft	
Generator	7 ft	6 ft	6 ft	Light Tower

DURHAM VEHICLE INVENTORY
11-11-10

D-1
PUMPER/WATER SUPPLY
30'X9'X11' HEIGHT

D-2
ENGINE/PUMPER
30'X9'X10' HEIGHT

D-3
RESCUE/PUMPER
35'X9'X9' HEIGHT

D-4
ENGINE/PUMPER
28'X9'X10' HEIGHT

D-5
BRUSH/TRAFFIC CONTROL
25'X9'X7' HEIGHT

D-TANKER
TANKER
31'X9'X10' HEIGHT

MODEL A
ANTIQUE
19'X7'X5' HEIGHT

BOAT
18'X7'X4' HEIGHT

GATOR TRAILER
21'X9'X9' HEIGHT

GENERATOR
LIGHT
TOWER
7'X6'X6'
HEIGHT

AMBULANCE, EMS
23'X10'X9' HEIGHT

AMBULANCE
(FUTURE EMS)
22'X10'X10' HEIGHT

FIRST RESPONDER
(FUTURE SUV, EMS)
18'X7'X7' HEIGHT

EM TOW VEHICLE
(FUTURE EOC)
25'X9'X7' HEIGHT

GENERATOR
(FUTURE
EOC)
7'X6'X6'
HEIGHT
CONFIRM SIZE

ENCLOSED TRAILER 1
(FUTURE EOC)
30'X9'X9' HEIGHT
OUTDOOR PARKING
CONFIRM SIZE

ENCLOSED TRAILER 2
(FUTURE EOC)
30'X9'X9' HEIGHT
OUTDOOR PARKING
CONFIRM SIZE

HORSE TRAILER, EOC
24'X7'X9' HEIGHT
OUTDOOR PARKING
CONFIRM SIZE

FIRE MARSHAL
(SUV TYPE)
18'X7'X7' HEIGHT

STATE TROOPER
(SUV TYPE)
18'X7'X7' HEIGHT

ANTICIPATED SPECIFICATIONS

Schematic Design Submission

Durham Public Safety Complex
37, 41 and 51 Main Street
Durham, Connecticut, 06422

SP&A Project No. 09.028

DIVISION 0 - BIDDING AND CONTRACT DOCUMENTS PAGES

Bid Procedures
Form of Bid Proposal
Supplementary Instructions to Bidders
Agreement Forms
Standard Form of Agreement Between Owner and Contractor (A-101)
General Conditions of the Contract (AIA A201)
Supplementary General Conditions
List of Subcontractors AIA G8051
Project Application and Project Certificate for Payment
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OPINION OF PROBABLE CONSTRUCTION COSTS

Schematic Design Submission

February 22, 2011

Durham Public Safety Complex
37, 41 and 51 Main Street
Durham, Connecticut, 06422

SP&A Project No. 09.028

Schematic square foot estimates were prepared for 37, 41 and 51 Main Street.

Silver Petrucelli & Associates, Inc. ©

Durham Public Safety Complex
Schematic Design Opinion of Probale Construction Costs

Trade or Description	51 Main Street Carriage House	41 Main Street FIRE/EMS / EOC	37 Main Street Trooper / Fire marshal	Combined Total
Division 2 - abatement & demolition	$56,850.00	$209,560.00	$33,840.00	**$300,250.00**
Division 3 - Concrete	$44,590.00	$422,050.00	$27,804.00	**$494,444.00**
Division 4 - Masonry	$25,480.00	$659,068.00	$5,958.00	**$690,506.00**
Division 5 - Steel	$15,925.00	$636,160.00	$1,986.00	**$654,071.00**
Division 6 - Rough carpentry	$63,700.00	$77,978.00	$47,664.00	**$189,342.00**
Division 6 - Finish Carpentry	$50,960.00	$351,601.00	$35,748.00	**$438,309.00**
Division 7 - Thermal & Moisture	$57,330.00	$678,798.00	$39,720.00	**$775,848.00**
Division 8 - Doors & Windows	$38,220.00	$593,154.00	$19,860.00	**$651,234.00**
Division 9 - Finishes	$25,480.00	$513,680.00	$15,888.00	**$555,048.00**
Division 10 - Specialties	$4,778.00	$91,722.00	$2,979.00	**$99,479.00**
Division 11 - Equipment (Kitchen)	$0.00	$152,870.00	$0.00	**$152,870.00**
Division 12 - Furnishings (not Furniture)	$0.00	$61,148.00	$0.00	**$61,148.00**
Division 13 - Specialty Systems	$0.00	$0.00	$0.00	**$0.00**
Division 14 - Conveyance Systems	$0.00	$85,644.00	$0.00	**$85,644.00**
Division 21 - Fire protection	$0.00	$201,770.00	$0.00	**$201,770.00**
Division 22 - Plumbing	$0.00	$452,532.00	$29,790.00	**$482,322.00**
Division 23 - HVAC	$25,480.00	$1,272,960.00	$39,720.00	**$1,338,160.00**
Division 26 - Electrical	$15,925.00	$681,791.00	$53,622.00	**$751,338.00**
Division 31- Earthwork	$141,391.00	$1,358,305.00	$88,965.00	**$1,588,661.00**
Sub-Total Construction Total	**$566,109.00**	**$8,500,791.00**	**$443,544.00**	**$9,510,444.00**
General Conditions (OH&P)	$84,916.35	$1,275,118.65	$66,531.60	**$1,426,566.60**
***Escalation 4%/year compounded	$28,300.00	$394,363.84	$21,300.36	**$443,964.20**
Estimate/Design Contingency 10%	$56,610.90	$850,079.10	$44,354.40	**$951,044.40**
Construction Total	**$735,936.25**	**$11,020,352.59**	**$575,730.36**	**$12,332,019.20**
Soft Costs - Professional Fees				
A&E fees (based on 4% of construction costs)				$493,281
Clerk of the Works (part-time)				$90,000
geotechnical consultant (borings & report)				$13,500
Technology/Communication Design				$24,000
Haz. Materials monitoring				$10,000
Special Inspections				$10,000
Commissioning agent				$40,000
Owner Direct Costs				
Construction Material Testing				$30,000
Builders Risk by the owner????				$25,000
Bonding Costs (tbd)				$150,000
Soft Costs - Other Fees				
Misc. Administration costs (project FTP site)				$15,000
Attorney fees and legal ads				$10,000
Printing costs during CA				$2,500
Soft Costs - Fixtures, Furnishings & Equipment				
Furnishings (TBD)				$75,000
Technology (TBD)				$15,000
Soft Costs - Contingencies & Allowances				
Owner contingency (TBD)				$50,000
State Building permit (assumes no local cost)				$3,453
Environmental conditions / winter conditions allowance				$20,000
Final Cleaning/Moving Allowance				$20,000
Printing/reimbursable Allowance				$5,000
Sub-total Soft Cost				
Total Soft Cost				**$1,101,733.73**
Total Project Cost				**$13,433,752.93**

*** 2014 Spring/Summer construction start
15 months construction (phased)
Soft Costs to be developed by the Town of Durham
Based on GC lump sum bidding
Less Geo-Thermal Options ($90,000)

Durham Emergency Services Facility

41 Main Street Facility (existing & proposed main building)

Expansion & Renovations Fire/Ambulance/EOC)

2/7/2013

Proposed Opinion of Probable Construction Cost - Schematic Submission

Task	s.f.	Total Cost per s.f.	Total Project Development Cost
02 0000 Abatement			
Existing Conditions abatement (asb & lead)	9,163	LS	$125,000
Existing Conditions abatement (PCB)	9,163	LS	$25,000
Subtotal	**18,326**		**$150,000**
02 000 Demolition			
Existing Conditions - Selective Demolition	9,163	$6.50	$59,560
Subtotal	**9,163**		**$59,560**
03 0000 Concrete			
Existing Conditions - Concrete	9,163	$4.00	$36,652
New Construction - Concrete	21,411	$18.00	$385,398
Subtotal	**30,574**		**$422,050**
04 000 Masonry			
Existing Conditions - Masonry	9,163	$6.50	$59,560
New Construction - Masonry	21,411	$28.00	$599,508
Subtotal	**30,574**		**$659,068**
05 000 Structural Steel			
Existing Conditions - Steel	9,163	$4.00	$36,652
New Construction - Steel	21,411	$28.00	$599,508
Subtotal	**30,574**		**$636,160**
06 000 Rough Carpentry			
Existing Conditions - Carpentry	9,163	$1.50	$13,745
New Constructions - Carpentry	21,411	$3.00	$64,233
Subtotal	**30,574**		**$77,978**
06 000 Finish Carpentry			
Existing Conditions - Finish Carpentry	9,163	$11.50	$105,375
New Constructions - Finish Carpentry	21,411	$11.50	$246,227
Subtotal	**30,574**		**$351,601**
07 000 Thermal & Moisture Protection			
Existing Conditions - Thermal & Moisture	9,163	$18.00	$164,934
New Conditions - Thermal & Moisture	21,411	$24.00	$513,864
Subtotal	**30,574**		**$678,798**
08 000 Doors & Windows			
Existing Conditions - Doors & Windows	9,163	$18.00	$164,934
New Construction - Doors & Windows	21,411	$20.00	$428,220
Subtotal	**30,574**		**$593,154**
09 000 Finishes			
Existing Conditions - Finishes	9,163	$14.00	$128,282
New Construction - Finishes	21,411	$18.00	$385,398
Subtotal	**30,574**		**$513,680**

10 000 Specialties			
Existing Conditions - Specialties	9,163	$3.00	$27,489
New Construction - Specialties	21,411	$3.00	$64,233
Subtotal	**30,574**		**$91,722**
11 000 Equipment			
Existing Conditions - Equipment	9,163	$5.00	$45,815
New Construction - Equipment	21,411	$5.00	$107,055
Subtotal	**30,574**		**$152,870**
12 000 Furnishings			
Existing Conditions - Furnishings	9,163	$2.00	$18,326
New Construction - Furnishings	21,411	$2.00	$42,822
Subtotal	**30,574**		**$61,148**
13 000 Specialty Systems			
Existing Conditions - Specialty Systems	9,163	$0.00	$0
New Construction - Specialty Systems	21,411	$0.00	$0
Subtotal	**30,574**		**$0**
14 000 Conveyance System			
Existing Conditions - Conveyance System	9,163	$0.00	$0
New Construction - Conveyance System	21,411	$4.00	$85,644
Subtotal	**30,574**		**$85,644**
21 000 Fire Protection			
Existing Conditions - Fire protection	9,163	$8.00	$73,304
New Construction - Fire protection	21,411	$6.00	$128,466
Subtotal	**30,574**		**$201,770**
22 000 Plumbing			
Existing Conditions - Plumbing	9,163	$12.00	$109,956
New Construction - Plumbing	21,411	$16.00	$342,576
Subtotal	**30,574**		**$452,532**
23 000 HVAC			
Existing & New Heating & Ventilation	10,000	$30.00	$300,000
Existing & New Air Conditioning	20,574	$40.00	$822,960
Fuel Oil Stoarge Tank & Gauging/Monitoring	150,000	LS	$150,000
Subtotal	**30,574**		**$1,272,960**
26 000 Electrical			
Existing Conditions - Electrical	9,163	$23.00	$210,749
New Construction - Electrical	21,411	$22.00	$471,042
Subtotal	**30,574**		**$681,791**
31 000 Earthwork/Exterior Improvements			
Existing / New Construction -Site & Earthwork	30,574	$44.43	$1,358,305
Subtotal	**30,574**		**$1,358,305**
CONSTRUCTION TOTAL			
Construction Total			**$8,500,789.50**

Durham Emergency Services Facility

37 Main Street Facility (fire marshal, trooper)

New Construction

2/7/2013

Proposed Opinion of Probable Construction Cost - Schematic Submission

Task	s.f.	Total Cost per s.f.	Total Project Development Cost
02 0000 Abatement			
Existing Conditions abatement (asb & lead)	1,884	LS	$15,000
Subtotal	**1,884**		**$15,000**
02 000 Demolition			
Existing Conditions - Selective Demolition	1,884	$10.00	$18,840
Subtotal	**1,884**		**$18,840**
03 0000 Concrete			
New Construction - Concrete	1,986	$14.00	$27,804
Subtotal	**1,986**		**$27,804**
04 000 Masonry			
New Construction - Masonry	1,986	$3.00	$5,958
Subtotal	**1,986**		**$5,958**
05 000 Structural Steel			
New Construction - Steel	1,986	$1.00	$1,986
Subtotal	**1,986**		**$1,986**
06 000 Rough Carpentry			
New Constructions - Carpentry	1,986	$24.00	$47,664
Subtotal	**1,986**		**$47,664**
06 000 Finish Carpentry			
New Constructions - Finish Carpentry	1,986	$18.00	$35,748
Subtotal	**1,986**		**$35,748**
07 000 Thermal & Moisture Protection			
New Conditions - Thermal & Moisture	1,986	$20.00	$39,720
Subtotal	**1,986**		**$39,720**
08 000 Doors & Windows			
New Construction - Doors & Windows	1,986	$10.00	$19,860
Subtotal	**1,986**		**$19,860**
09 000 Finishes			
New Construction - Finishes	1,986	$8.00	$15,888
Subtotal	**1,986**		**$15,888**
10 000 Specialties			
New Construction - Specialties	1,986	$1.50	$2,979
Subtotal	**1,986**		**$2,979**

11 000 Equipment			
New Construction - Equipment	1,986	$0.00	$0
Subtotal	**1,986**		**$0**
12 000 Furnishings			
New Construction - Furnishings	1,986	$0.00	$0
Subtotal	**1,986**		**$0**
13 000 Specialty Systems			
New Construction - Specialty Systems	1,986	$0.00	$0
Subtotal	**1,986**		**$0**
14 000 Conveyance System			
New Construction - Conveyance System	1,986	$0.00	$0
Subtotal	**1,986**		**$0**
21 000 Fire Protection			
New Construction - Fire protection	1,986	$0.00	$0
Subtotal	**1,986**		**$0**
22 000 Plumbing			
New Construction - Plumbing	1,986	$15.00	$29,790
Subtotal	**1,986**		**$29,790**
23 000 HVAC			
New Heating & Ventilation	1,986	$20.00	$39,720
Subtotal	1,986		**$39,720**
26 000 Electrical			
New Construction - Electrical	1,986	$27.00	$53,622
Subtotal	**1,986**		**$53,622**
31 000 Earthwork/Exterior Improvements			
New Construction -Site & Earthwork	1,986	$44.80	$88,965
Subtotal	**1,986**		**$88,965**
Construction Total			**$443,544**

Durham Emergency Services Facility

51 Main Street Facility (carriage house)

New Construction

2/7/2013

Proposed Opinion of Probable Construction Cost - Schematic Submission

Task	s.f.	Total Cost per s.f.	Total Project Development Cost
02 0000 Abatement			
Existing Conditions abatement (asb & lead)	3,185	LS	$25,000
Subtotal	**3,185**		**$25,000**
02 000 Demolition			
Existing Conditions - Selective Demolition	3,185	$10.00	$31,850
Subtotal	**3,185**		**$31,850**
03 0000 Concrete			
New Construction - Concrete	3,185	$14.00	$44,590
Subtotal	**3,185**		**$44,590**
04 000 Masonry			
New Construction - Masonry	3,185	$8.00	$25,480
Subtotal	**3,185**		**$25,480**
05 000 Structural Steel			
New Construction - Steel	3,185	$5.00	$15,925
Subtotal	**3,185**		**$15,925**
06 000 Rough Carpentry			
New Constructions - Carpentry	3,185	$20.00	$63,700
Subtotal	**3,185**		**$63,700**
06 000 Finish Carpentry			
New Constructions - Finish Carpentry	3,185	$16.00	$50,960
Subtotal	**3,185**		**$50,960**
07 000 Thermal & Moisture Protection			
New Conditions - Thermal & Moisture	3,185	$18.00	$57,330
Subtotal	**3,185**		**$57,330**
08 000 Doors & Windows			
New Construction - Doors & Windows	3,185	$12.00	$38,220
Subtotal	**3,185**		**$38,220**
09 000 Finishes			
New Construction - Finishes	3,185	$8.00	$25,480
Subtotal	**3,185**		**$25,480**
10 000 Specialties			
New Construction - Specialties	3,185	$1.50	$4,778
Subtotal	**3,185**		**$4,778**
11 000 Equipment			
New Construction - Equipment	3,185	$0.00	$0
Subtotal	**3,185**		**$0**

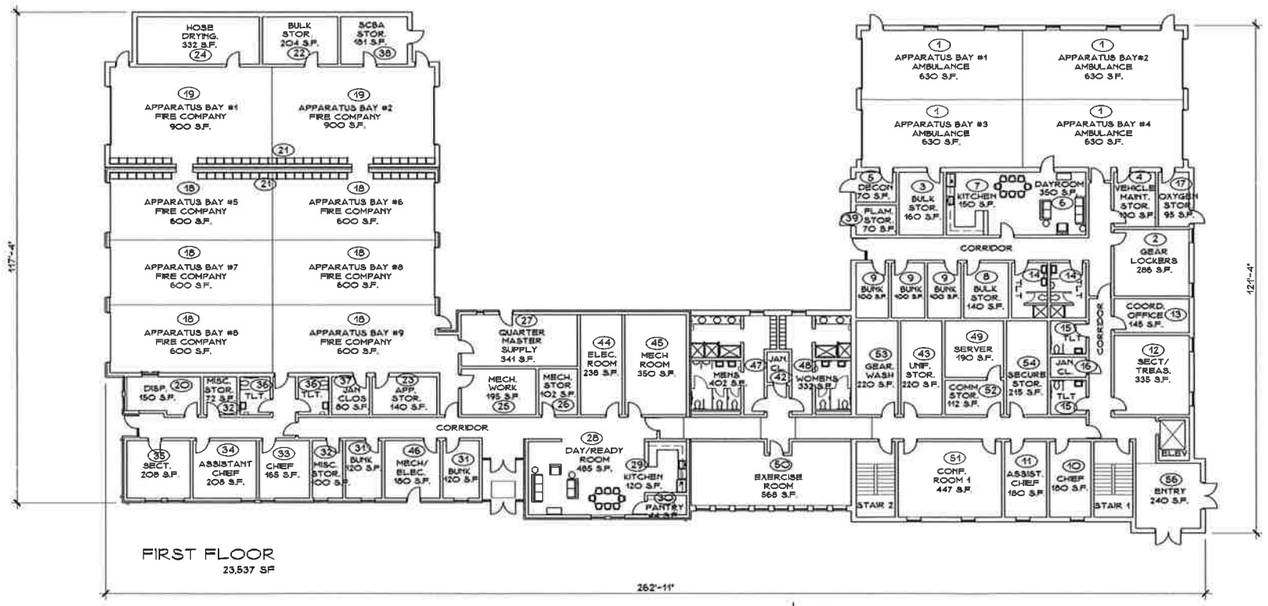
12 000 Furnishings			
New Construction - Furnishings	3,185	$0.00	$0
Subtotal	**3,185**		**$0**
13 000 Specialty Systems			
New Construction - Specialty Systems	3,185	$0.00	$0
Subtotal	**3,185**		**$0**
14 000 Conveyance System			
New Construction - Conveyance System	3,185	$0.00	$0
Subtotal	**3,185**		**$0**
21 000 Fire Protection			
New Construction - Fire protection	3,185	$0.00	$0
Subtotal	**3,185**		**$0**
22 000 Plumbing			
New Construction - Plumbing			$0
Subtotal			**$0**
23 000 HVAC			
New Heating & Ventilation	3,185	$8.00	$25,480
Subtotal	**3,185**		**$25,480**
26 000 Electrical			
New Construction - Electrical	3,185	$5.00	$15,925
Subtotal	**3,185**		**$15,925**
31 000 Earthwork/Exterior Improvements			
New Construction -Site & Earthwork	3,185	$44.39	$141,391
Subtotal	**3,185**		**$141,391**
CONSTRUCTION TOTAL			
Construction Total			**$566,109**

SILVER/PETRUCELLI & ASSOCIATES PROJECT SUMMARIES

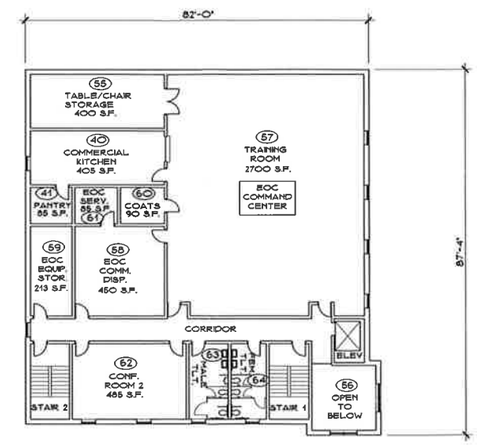
HISTORICAL PROJECT PERFORMANCE STATISTICS - EMERGENCY SERVICES PROJECTS

2/7/2013

					BUDGET/BID SUMMARY				CHANGE ORDER SUMMARY				
PROJECT	YEAR	TYPE	CLIENT/LOC	INVOLVED AREA	CLIENT'S BUDGET	A/E PREBID ESTIMATE	WINNING BID	SIMPLIFIED COST/SF	TOTAL C.O. $	TOTAL C.O. % OF BID $	UNFORSEEN C.O. $	UNFORSEEN % OF BID $	VOLUNTARY C.O. $
FIRE STATION #2	2008	ROOF	HAMDEN	13,260	$150,000	$145,000	$148,360	$11.19	$0	0.0%	$0	0.0%	$0
WEST SHORE FIRE	1999	FIRE STATION	MILFORD	11,129	$1,200,000	$1,200,000	$1,353,000	$121.57	$107,000	7.9%	$23,450	1.7%	$83,550
FIRE HOUSE #2	2000	FIRE STATION	CHESHIRE	6,900	$600,000	$556,186	$552,750	$80.11	$0	0.0%	$0	0.0%	$0
FIRE HOUSE #3	2007	FIRE STATION	CHESHIRE	3,300	$1,000,000	$887,000	$943,000	$285.76	$1,526	0.2%	$1,526	0.2%	$0
FIRE HOUSE #2	2006	FIRE STATION	NEWINGTON	7,450	$1,000,000	$895,000	$923,950	$124.02	$93,749	10.1%	$14,350	1.6%	$79,399
FIRE HEADQUARTERS	1995	FIRE STATION	WASHINGTON	10,295	$1,000,000	$839,677	$824,000	$80.04	$14,379	1.7%	$4,359	0.5%	$10,020
Reno/Add FIRE HEADQUARTERS	2008	FIRE STATION	SHERMAN	14,280	$4,500,000	$3,998,764	$3,616,129	$253.23	$136,400	3.8%	$14,565	0.4%	$121,835
OXFORD #1	2001	AMBULANCE	OXFORD	4,058	$650,000	$610,000	$597,877	$147.33	$23,400	3.9%	$2,560	0.4%	$20,840
FIRE HEADQUARTERS	1999	FIRE STATION	OXFORD	5,500	$650,000	$663,196	$699,000	$127.09	$46,500	6.7%	$13,456	1.9%	$33,044
EMERGENCY SERVICES HEADQUARTERS	2009	AMBULANCE	STRATFORD	9,500	$2,500,000	1,890,925	$1,632,000	$171.79	$86,204	5.3%	$31,279	1.9%	$54,925
New EMERGENCY SERVICES HEADQUARTERS	2009	AMBULANCE	NEW MILFORD	11,009	$3,500,000	3,300,000	$2,510,000	$228.00	$42,300	1.7%	$24,332	1.0%	$17,968
FIRE STATION	2010	FIRE STATION	EAST HARTFORD	16,000	$6,000,000	5,328,000	$5,448,000	$340.50	$213,000	3.9%	$63,900	1.2%	$149,100
New FIRE HEADQUARTERS	2010	FIRE STATION	BRANFORD	31,000	$12,500,000	10,882,000	$10,518,000	$339.29	$85,627	0.8%	$12,566	0.1%	$73,061
EMERGENCY OPERATIONS CENTER	2010	EMERG OPS	MANCHESTER	4,615	$500,000	473,374	$468,900	$101.60	$0	0.0%	$0	0.0%	$0
FIRE HEADQUARTERS	2008	FIRE STATION	WOODBRIDGE	20,000	$7,400,000	5,908,688	$5,545,833	$277.29	$60,200	1.1%	$28,150	0.5%	$32,050
FIRE HOUSE #1	2010	FIRE STATION	DURHAM	9,000	$3,250,000	$3,100,000	$0	$0.00	$0	0.0%	$0	0.0%	$0
FIRE HOUSE #3	2009	FIRE STATION	EAST HAVEN	7,900	$400,000	$345,000	$396,000	$50.13	$29,150	7.4%	$0	0.0%	$29,150
FIRE HEADQUARTERS	2011	FIRE STATION	ROXBURY	5,800	$300,000	$275,000	$194,000	$33.45	$0	0.0%	$0	0.0%	$0
		PROJECT TOTALS =	18	190,996	47,100,000	41,297,810	36,370,799		939,435	2.6%	$234,493	0.6%	$704,942



FIRST FLOOR
23,537 SF



SECOND FLOOR
7,030 SF

41 MAIN STREET - PROPOSED PLANS

1/16" = 1'-0"

NORTH

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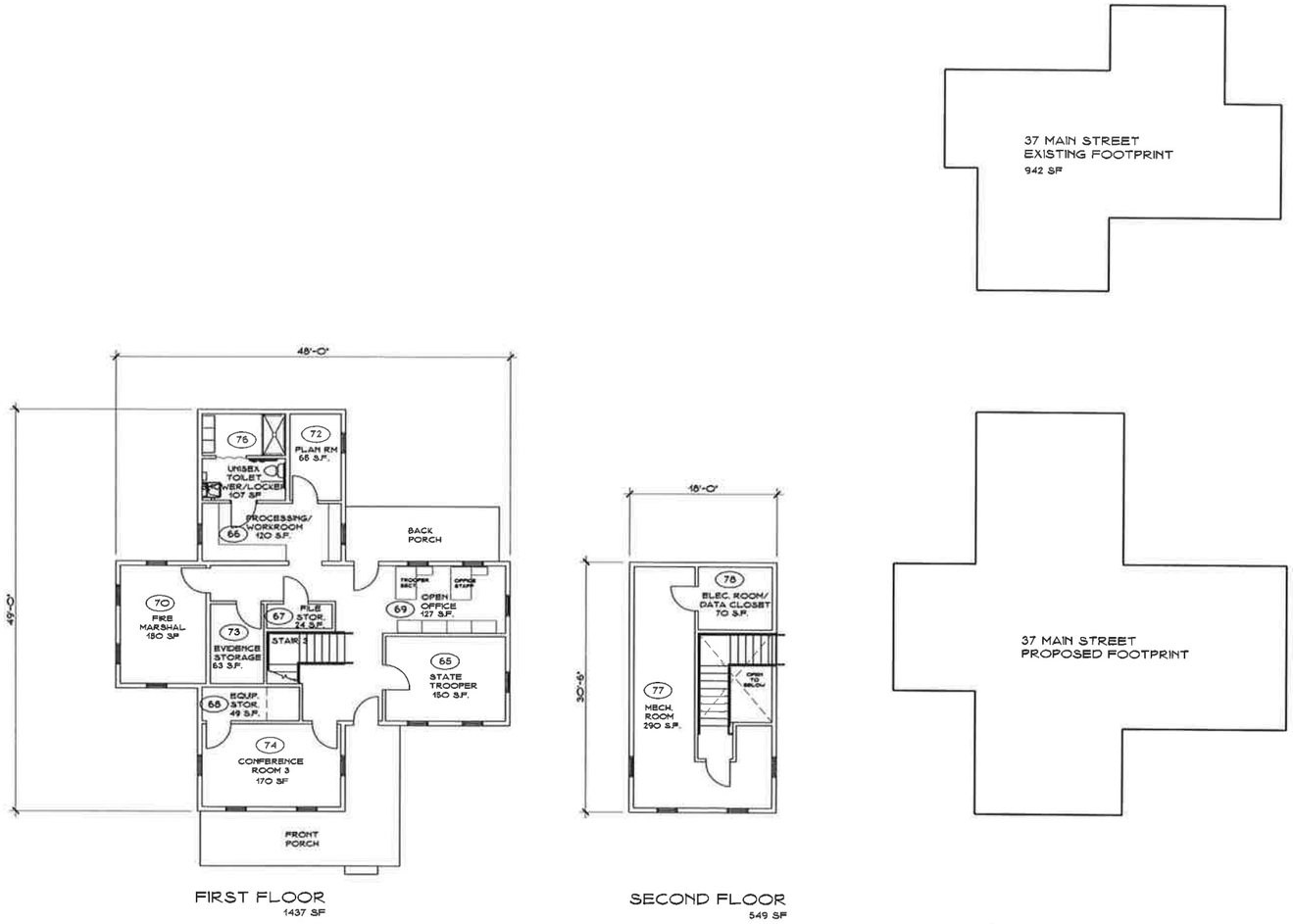
Architects / Engineers / Interior Designers

3190 Whitney Avenue, Hamden, CT 06518-2340
Tel. 203 230 9007 Fax. 203 230 8247
silverpetrucelli.com

February 7, 2013



37 MAIN STREET - PROPOSED PLAN

1/8" = 1'-0"

NORTH

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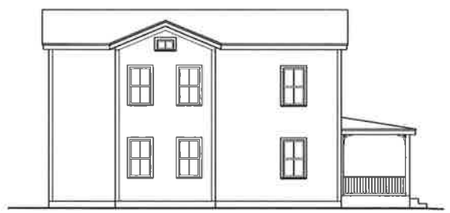
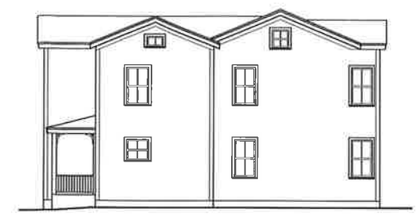


NORTH

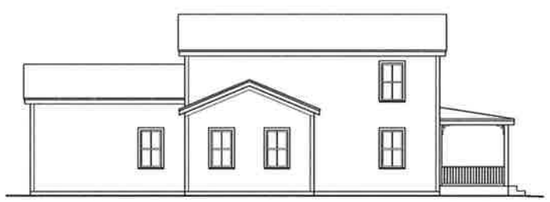
WEST (FRONT)

SOUTH



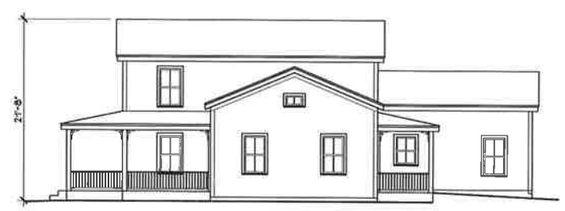
EAST

37 MAIN STREET - EXISTING ELEVATIONS



NORTH

WEST (FRONT)



SOUTH

EAST

37 MAIN STREET - PROPOSED SCHEMATIC ELEVATIONS

1/8" = 1'-0"

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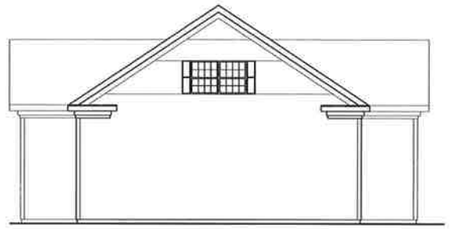

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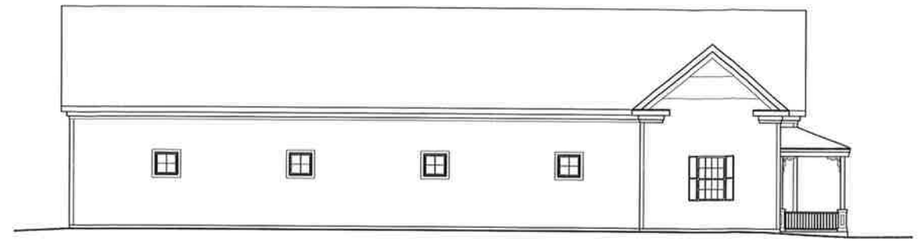
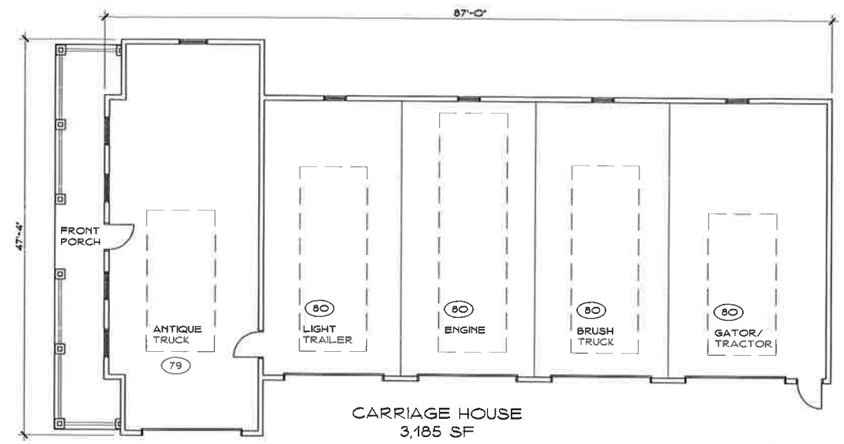


NORTH

WEST (FRONT)

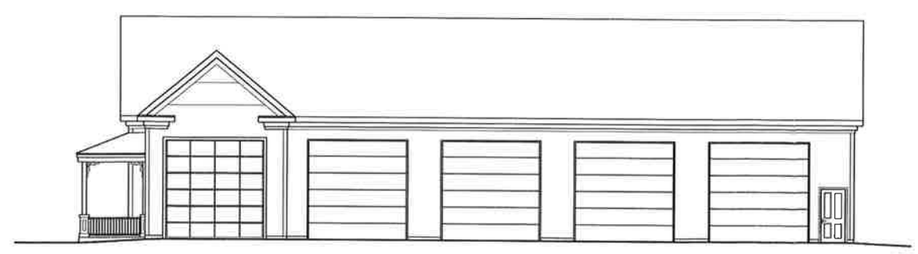


CARRIAGE HOUSE
3,185 SF

51 MAIN STREET - PROPOSED PLAN & ELEVATIONS

1/8" = 1'-0"

NORTH



SOUTH

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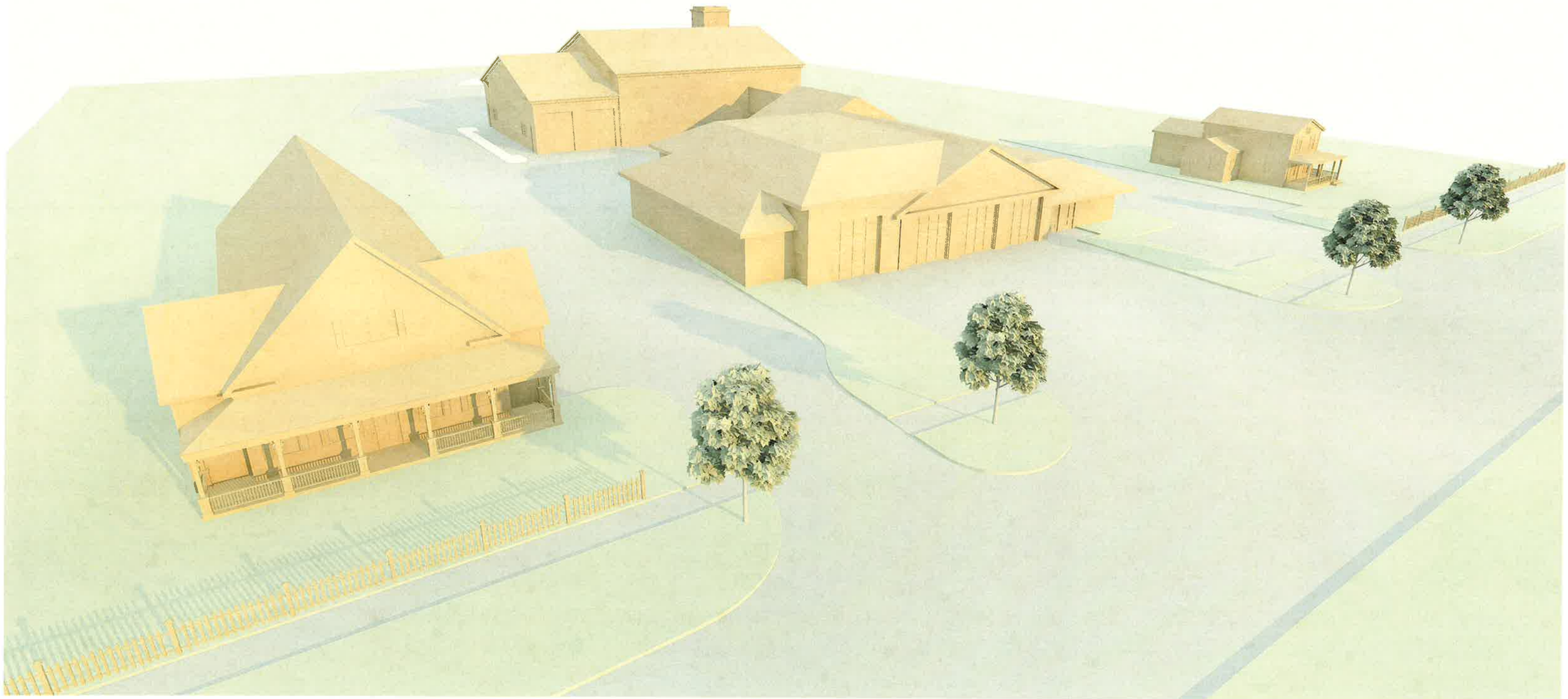

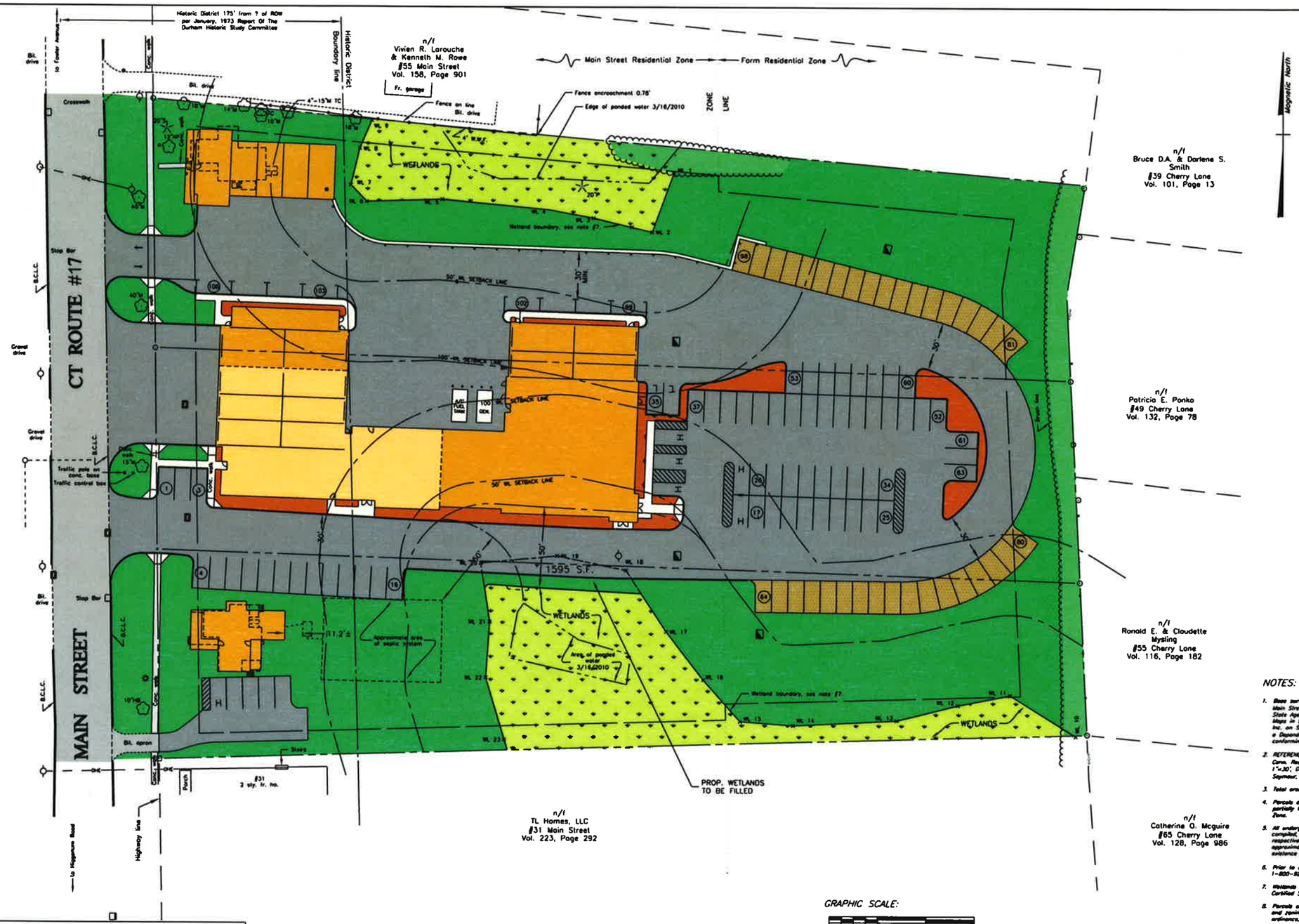

NOTES:

1. Base survey (map) has been prepared by Michael H. Harbal, Land Surveyors – Planners, 53 Main Street, Seymour, Connecticut, (203) 888-9660, pursuant to the regulations of Connecticut State Agencies Sections 20-300b-1 through 20-300b-20 and the Standards for Surveys and Maps in the State of Connecticut as adopted by the Connecticut Association of Land Surveyors, Inc. on September 26, 1996; it is a Property Survey and Topographic Survey based partially on a Dependent Resurvey (#37 & #41 Main Street) and partially on a resurvey (#51 Main Street) conforming to Horizontal Accuracy Class A-2 and Topographic Accuracy Class T-2.
2. REFERENCE MAP: Map entitled "Property Survey & Topographic Map, #37, 41 & 51 Main Street, Conn. Route #17, Durham, Connecticut, Prepared For The Town of Durham" Sheet 1 of 1, Scale 1"=30', Dated 3/22/2010, by Michael H. Harbal, Land Surveyors – Planners, 58 Main Street, Seymour, Connecticut, (203) 888-9660.
3. Total area = 214,039± s.f. – 4.913± acres.
4. Parcels are known as lots; 18, 20 & 21 on Durham Tax Assessors Map No. 58 and are partially located within the Main Street Residential Zone and partially within the Farm Residential Zone.
5. All underground utilities, structures and facility locations shown and depicted hereon have been compiled, in part by actual field location and in part, from record mapping supplied by the respective utility companies or governmental agencies. These locations must be considered approximate in nature. Additionally, other such underground utilities are NOT shown, the existence and location of which are unknown to Michael H. Harbal, Land Surveyors – Planners.
6. Prior to any construction the contractor MUST contact "CALL BEFORE YOU DIG" 1-800-922-4455 and have all utilities marked on the ground.
7. Wetlands were field delineated on March 11, 2010 by Soil Resource Consultants, David H. Lord Certified Soil Scientist.
8. Parcels are subject to Building lines, if established, and any and all provisions of any building and zoning ordinance enacted by the Town of Durham, and any and all provisions of any ordinance, municipal regulation, or public or private law.
9. Portions of the parcels may be subject to rules and regulations of the Historic District.

LEGEND

CHD Mon.	Conn. Highway Dept. Monument	SNET	Utility Pole owned by SNET
I. pipe	Iron Pipe	M.H.	Manhole
I. pin	Iron Pin	C.B. or I.I.	Catch Basin or Lawn Inlet
	Property Line	W.W.	Monitoring well
	Adjacent Property Line		Light Post
	Fence	o/h	Overhang
	Cable guide rail	P.V.C.	Polyvinyl Chloride Pipe
	Stone Wall	R.C.P.	Reinforced Concrete Pipe
	Wetlands Boundary Line	C.M.P.	Corrugated Metal Pipe
WL #	Wetlands Boundary Flag #/number	San.	Sanitary
	Wetlands	Inv.	Invert
T.P.#	Location of soil Test Pit #/number	el.	Elevation
	Storm Water Sewer Pipe	bit.	Bituminous
CATV CATV	Underground Cable TV Wire	conc.	Concrete
UE UE	Underground Electric Wire	Mas.	Masonry
AT AT	Underground Telephone Wires	(B.C.L.C.)	Bituminous Concrete Lip Curb
ONE	Underground Telephone Wires	165	5 foot contour with elevation
	Zoning District boundary line	181	1 foot contour with elevation
	Historic District boundary line	183	Spot elevation
	Water line		Brush/tree line

GRAPHIC SCALE:

30 0 30 60

REVISIONS		
NO.	DESCRIPTION	DATE
1	Bldg. footprints	9/17/12
2	Parking, feat & gen.	9/26/12

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Tel. 203 230 9007 Fax 203 230 8247
silverpetrucelli.com

DONALD W. SMITH, JR., P.E.
CONSULTING ENGINEER
56 GREENWOOD CIRCLE SEYMOUR, CT 06483
Tel. 203-888-4904 Fax 203-881-3434 dwsjrpe@sbcglobal.net

PRESENTATION PLAN

TOWN OF DURHAM
PUBLIC SAFETY COMPLEX
#37, #41 & #51 MAIN STREET
(CT ROUTE 17)

DURHAM, CONNECTICUT

Job No. 09-14
Scale: 1"=30'
Date: 12/2/11
Designed: D.W.S.
Drawn: K.D.K.
Sheet: 1 OF 1