DURHAM PUBLIC SAFETY COMPLEX

Archive Compilation Report

Draft Report: October 16, 2017

Silver/Petrucelli + Associates

Architects / Engineers / Interior Designers

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SILVER/PETRUCELLI+ASSOCIATES
Architects / Engineers / Interior Designers

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C. Inland Wetland
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E. Planning & Zoning

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Durham Public Safety Facilities, Planning and Renovation
Project Summary 2013 - 2017

In the spring of 2013, the Committee presented to the Board of Selectmen a work summary and schematic plan for a proposed public safety facility complex. The initial plans called for the removal of the existing structures at 37 and 51 Main St and construction of structures similar in both visual style and mass. After some months of review by town officials, the Committee was asked to consider a phased approach to implementing the project, revise and reduce individual program components, and renovate rather than replace the buildings at 37 and 51 Main St. The phased approach idea would first introduce renovations to 37 and 51 Main Street, making a visible and hopefully favorable impact that would grow some community and end-user support for the subsequent phases of the project. When first proposed, both structures were still designated for the use as proposed in the schematic plans (51 Main would be for Emergency Management and 37 Main would house the resident trooper and fire marshal).

At about the same time, the Town of Durham applied for a Historic Preservation Technical Assistance Grant (HPTAG) for work on 37 and 51 Main St. Acceptance of the grant would require that both houses be renovated, forcing the Committee to develop new plans. The Committee was still divided on the concept of removal versus renovation, and was sensitive to feedback from town residents who favored one or the other approach. Eventually, the Town was awarded and accepted the HPTAG.

The Committee implemented a competitive bidding process in 2014 and again selected the firm of Silver, Petrucelli & Associates to continue the design work. As new plans were being drawn up, the Committee was asked to change the plans for 37 Main St and shift the program for Durham EMS to that location. Doing so would reduce the mass of the 2013 proposed plan that would be added to the rear of the firehouse and force some revisions to the site plan. The septic system at 37 Main St was still functional and could support the newly added program, which was very beneficial to the project as the Committee was unable to add any additional program space to the septic system already in use by the firehouse. Moving to 37 Main St required some trimming of program space by Durham EMS. The end result was a 2-vehicle bay ambulance garage, attached to 37 Main St which was itself expanded to the rear to accommodate the EMS program. Entry to the facility would use the existing firehouse driveway, and a newly constructed one-way drive around the existing septic system to the rear of the garage, which would be drive-through, with the ambulance exiting out the front onto Main Street using an existing curb cut.

In the fall of 2014 the Committee was asked by fire company leadership to develop plans for an addition onto 41 Main St (the firehouse) due to space constraints there. What resulted was a plan for a single double deep drive-through bay that would be constructed on the north end of the firehouse, along with support spaces for hose drying, storage, and SCBA room.

The structure at 51 Main St would undergo some revision that involves removal of an addition placed on the rear of the structure. This allows construction of a proposed carriage house closer to the rear of the house at 51 Main St, keeping it out of the existing wetlands boundary. The proposed carriage house

would be reduced in mass to 3 vehicle bays, sized to allow storage of different apparatus during construction.

Throughout the planning process, the Committee was concerned with the ongoing issue of having a septic system to accommodate the improvements to 51 Main St and 41 Main St itself, should that be needed at some point in the future. The current septic system being used by the firehouse is located on Durham Fair Association (DFA) property in the area immediately south of the commercial building. DFA allows its continued use by the firehouse only, and considers this a licensed type of use that is revocable at any time, although DFA has stated it has no plans to do so (see letter from DFA attorney). The Town of Durham does not find that arrangement satisfactory, and wanted the Committee to have an alternative plan available if the system itself fails, or if its permitted use is revoked. The site plan now includes a proposed septic system that would tie in 51 and 41 Main St if the need for it arises in the future.

In late 2015 and into 2016, presentations of the plans were given to the Historic District Commission, Inland Wetlands and Planning & Zoning. During this time, some financing solutions were being developed by the Town's Finance Director. The plan most favored was to finance the project through loans, current savings and potentially Federal Department of Agriculture grant money.

In 2016 and into 12017, the Committee anticipated and scheduled some time to make a formal and comprehensive presentation of the plans to town residents. This would be a final opportunity to seek input and make plan revisions, and discuss the options for funding the project. Delays in the process of getting approval of the Special Permit forced a postponement of a fall 2016 presentation, and budgetary issues affecting the town and State forced an indefinite postponement in the spring of 2017.

Where We Stand, September 2017

- a complete set of design development plans is available.
- Signed statements of support from the intended end-users were obtained
- An updated construction cost estimate was received from Silver-Petrucelli in the spring of 2017
- Approval of the design development plans by Historic District and Inland Wetlands Commissions, and approval of a Special Permit by Planning & Zoning (for change in use from residential to municipal)

What is next:

- Review and potential revision of the plans, which may be affected by code changes, updates of revision in the needs assessments of the end users, and need for renewal of the special permit.
- A comprehensive presentation of the plans, including a proposed funding scheme, to the general public
- A referendum about approval of funding the project
- Development of construction documents and bidding the project. This step would require again a competitive bidding process for a firm to produce the documents and hire a construction manager or general contractor.

Public Safety Facilities Project

Project Update 2016

The Town of Durham is ready to present revised plans to town residents for its public safety facilities. An earlier schematic plan was presented in 2013, but required some re-work due to overall cost and other considerations.

A detailed description of the project, including reasons for undertaking this work, issues related to the sites selected, and other project considerations, can be found on the Town of Durham website. Click the 'Municipal Government' tab, then on the left sidebar click 'Boards and Commissions' and then click on 'Public Safety Facility Renovations Committee.' The *Project Summary* and *Schematic Design Report* from 2013 can be accessed here.

Those initial plans in 2013 called for a large expansion to the rear of the existing firehouse that would include space for the Ambulance Corps and Emergency Management. The houses at 37 and 51 Main Street were to be renovated for use by the resident trooper and fire marshal, and for Emergency Management. Those plans also required construction of an on-site septic system that would accommodate all of these improvements.

After extensive review of the 2013 plans, it was later decided the town would a)

pursue a phased approach to implementing the project, and

b) reduce the overall size and cost by making some plan changes.

Members of the Town's Historic District Commission were involved in the redesign process. See *'Changes from 2013'* below.

Subsequent phasing that will include improvements and additional expansion and renovation of the firehouse, inclusion of an Emergency Operations Center, and installation of a larger septic system will be taken up at a later time.

NOTE: The depicted architectural renderings of the proposed changes contain some design elements that will be modified when construction documents are produced. The design elements depicted in the renderings are not final.

Highlights of Changes from 2013

The initial phase will involve work on the two town-owned houses at 37 and 51 Main Street, as well as an addition to the north end of the firehouse.

- Historic renovation of the two town-owned houses at 37 and 51 Main Street with preservation of original dimensions and structural improvements
- Addition to the rear of 37 Main Street
- Addition to the north end of the firehouse.

DURHAM'S MAIN STREET, JULY 2016

RENDERINGS OF PROPOSED CHANGES

51 Main Street

- Reduction in overall size to its original dimensions
- Construction of a carriage house type garage with 3 vehicle bays (no water supply)
- New home for the resident state trooper, Emergency Management and public safety communications.
- New limited septic system will be constructed to the rear of the property.

41 Main Street

- A single drive-through bay for 2 pieces of fire apparatus on the north end of the firehouse.
- Dedicated support space for fire operations.

37 Main Street

- Renovation and additions will be built to the rear and south
- New home for emergency ambulance operations.
- Additions will include administrative support space, accommodations for duty crews, and drive-through garage space for 2 emergency response vehicles.
- Significant reduction in space for EMS compared to the plan submitted in 2013.

Site Improvements

- Existing one-way traffic flow will be maintained.
- New parking for emergency responders will be established.
- Rear of the property will be elevated and graded toward the front due to the new septic system.
- A small retention wall will be constructed along the perimeter of the north side of the driveway.
- Expanded impervious surfacing.
- An access driveway off the complex drive entry to allow one way movement for the ambulance to enter the rear of the new vehicle bay.
- The ambulance will exit directly out onto Main Street.

Renovation and Addition to:
37 & 51 Main Street

Durham, Connecticut 06422

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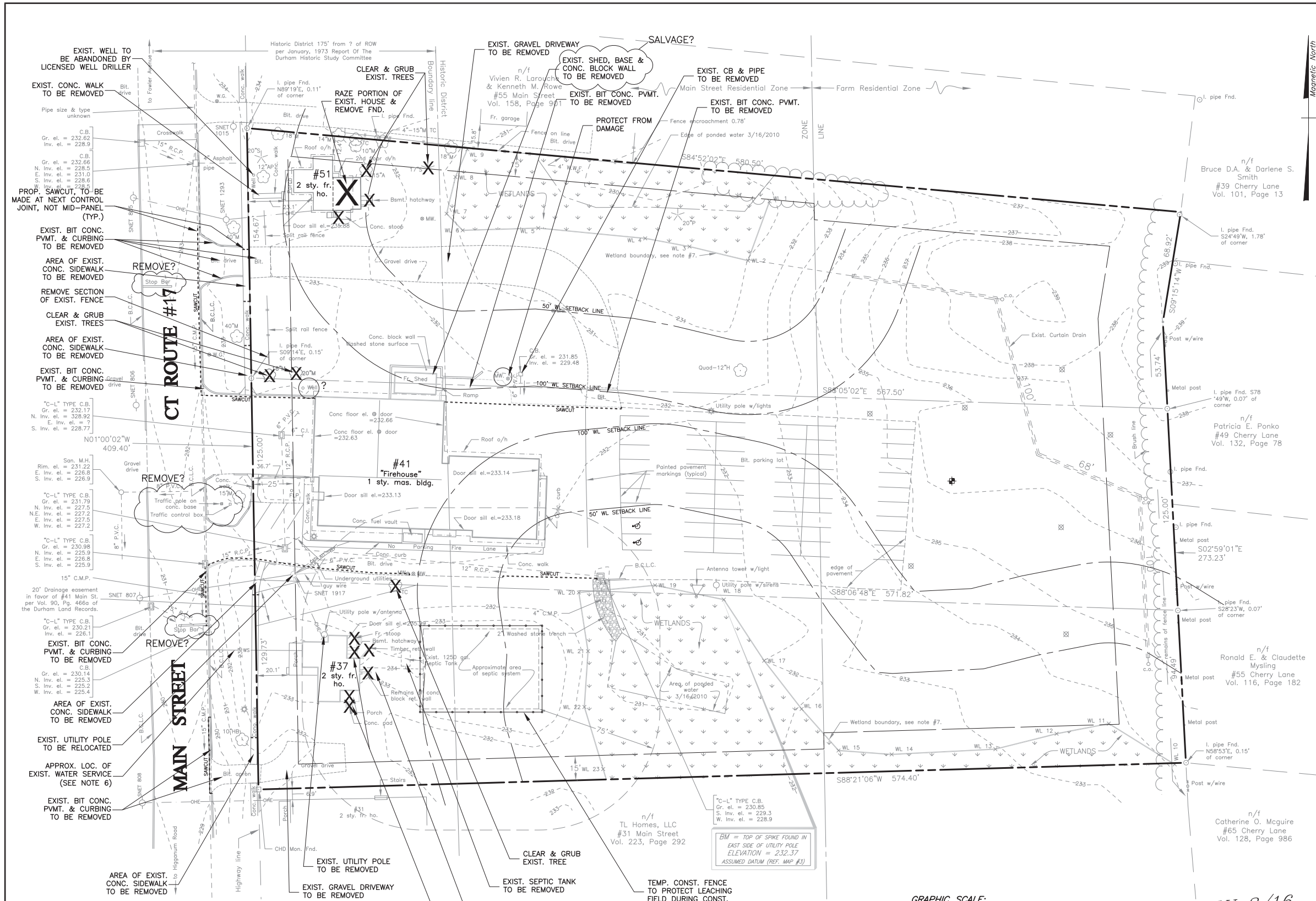
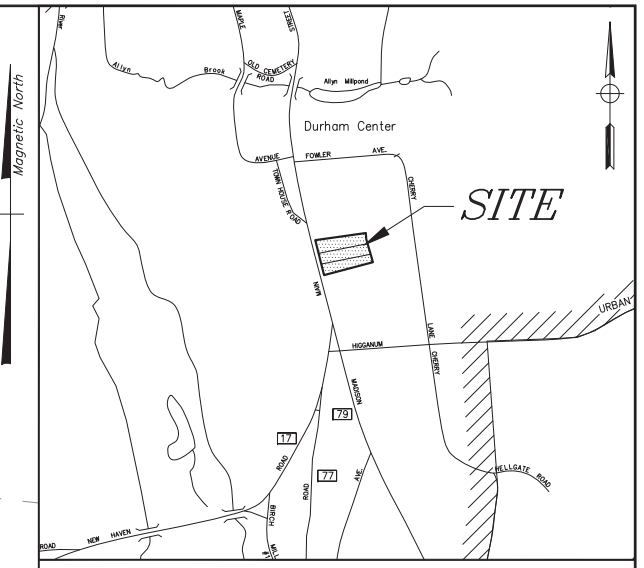
July 1, 2016





NOTES:

1. Base survey (map) has been prepared by Michael H. Horbal, Land Surveyors – Planners, 52 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. Horbal, Land Surveyors – Planners, 58 Main Street, Seymour, Connecticut, (203) 888-9660.
3. Total area = 214,039± s.f. (4.91± acres). Area of #37 lot = 64,174± s.f. (1.47 acres), area of #41 lot = 71,032 s.f. (1.63± acres), area of #51 lot = 78,832 s.f. (1.81 acres).
4. Parcels are known as lots: 19, 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. Horbal, 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.

GRAPHIC SCALE: 30 0 30 60

PRELIMINARY 3/16

L E G E N D

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 LI	Catch Basin or Lawn Inlet
	Property Line	MW.	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 w/number	San.	Sanitary
	Wetlands	Inv.	Invert
T.P.#	Location of soil Test Pit w/number	el.	Elevation
	Storm Water Sewer Pipe	bit.	Bituminous
CATV	Underground Cable TV Wire	conc.	Concrete
GAS	Underground Electric Wire	Mas.	Masonry
ATT	Underground Telephone Wires	(B.C.L.C.)	Bituminous Concrete Lip Curb
OHE	Underground Telephone Wires	165	5 foot contour with elevation
	Zoning District boundary line	161	1 foot contour with elevation
	Historic District boundary line	169.3	Spot elevation
	Water line		Brush/tree line

MICHAEL H. HORBAL
Land Surveyors & Planners
52 MAIN STREET, SEYMOUR, CT 06483
(203) 888-9660

REVISIONS		
NO.	DESCRIPTION	DATE

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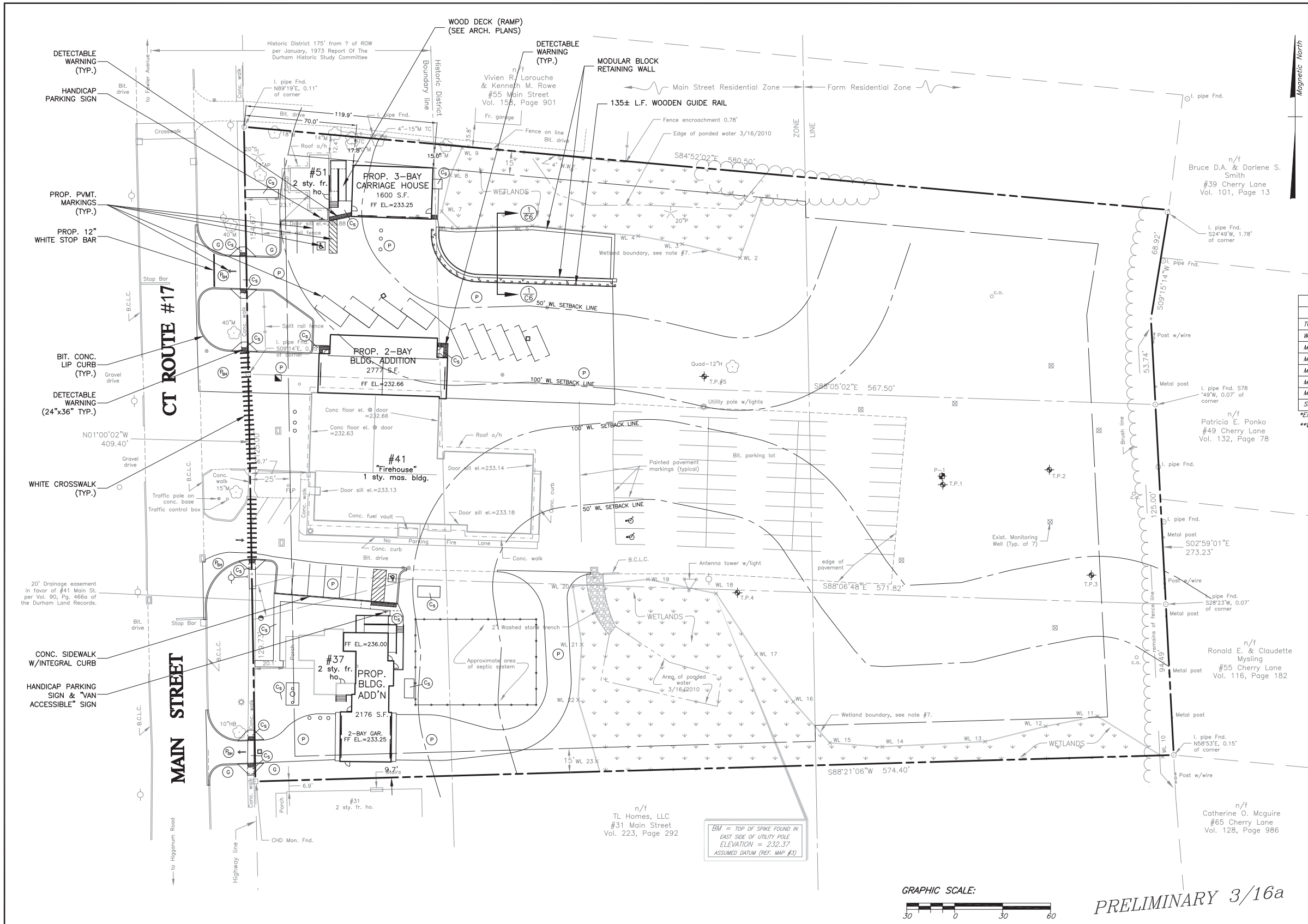
Tel. 203-888-4904 Fax 203-881-3434 dwsjrpe@sbcglobal.net

EXIST. COND. & DEMOLITION 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:	2/13/15
Designed:	D.W.S.
Drawn:	K.D.K.
Sheet:	C1



SYMBOL	DESCRIPTION	CROSS SECTION
Cs	CONCRETE SIDEWALK	Broom finish, score lines @ 30 s.f. +/-, expansion joints @ 30' o.c. min. 1/4" per foot cross slope; 4", 3,000 # Cement concrete (3/4" stone); 6" X 6" – 10/10 Welded wire fabric; 4", Compacted gravel base; Subgrade (common backfill)
G	GRASS	Lime, fertilizer and grass seed –see sheet L1 for appropriate seed mix; 6" Min., topsoil (no stones larger than 1"); Subgrade (common backfill)
P	BITUMINOUS CONCRETE PAVEMENT	2" Bituminous concrete surface course – Class 2; 2" Bituminous concrete binder course – Class 1; 12" Processed aggregate, bank run gravel or reclaimed misc. aggregate (compacted); Subgrade (common backfill)
Lb	LANDSCAPE BED	2" Min. pine bark nuggets; Weed block fabric; 3" Min., topsoil (no stones larger than 3"); Subgrade (common backfill)
BSH	PERMANENT PAVEMENT STATE HIGHWAYS	1-1/2" Class 1 bituminous concrete surface course; 1-1/2" Class 1 bituminous concrete binder course; 6" Class #4 pre-mix bituminous concrete placed in two (2) layers; 10" Rolled gravel subbase; Subgrade (common backfill)

SURFACE CODE LEGEND

N.T.S.

ZONING COMPLIANCE SUMMARY–COMBINED

	MAIN STREET RESIDENTIAL			FARM RESIDENTIAL		
	REQUIRED	EXISTING	PROPOSED	REQUIRED	EXISTING	PROPOSED
TOTAL LOT AREA (S.F.)	–	136,115	136.115	–	77,924	77,924
WETLAND AREA (S.F.)	–	22,887	22,887	–	3,139	3,139
MINIMUM FRONT YARD	25'	20'*	20'*	N/A	–	–
MINIMUM SIDE YARD	15'	12'*	9.7'**	25'	–	–
MINIMUM REAR YARD	N/A	–	–	40'	389'	389'
MAXIMUM BUILDING HEIGHT	≤35'	≤35'	≤35'	≤35'	–	–
MAXIMUM LOT COVERAGE	≤20%	30.4%*	52.2%**	≤12%	7.4%	7.4%
SETBACK FROM WETLANDS	50'	39'*	6.3'**	50'	–	–

*Existing non-conforming.

**Variance required.

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PRELIMINARY 3/16a

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SEE SHEET C1 FOR LEGEND.

SITE PLAN

TOWN OF DURHAM PUBLIC SAFETY COMPLEX

#37, #41 & #51 MAIN STREET

(CT ROUTE 17)

DURHAM, CONNECTICUT

Job No. 09-14

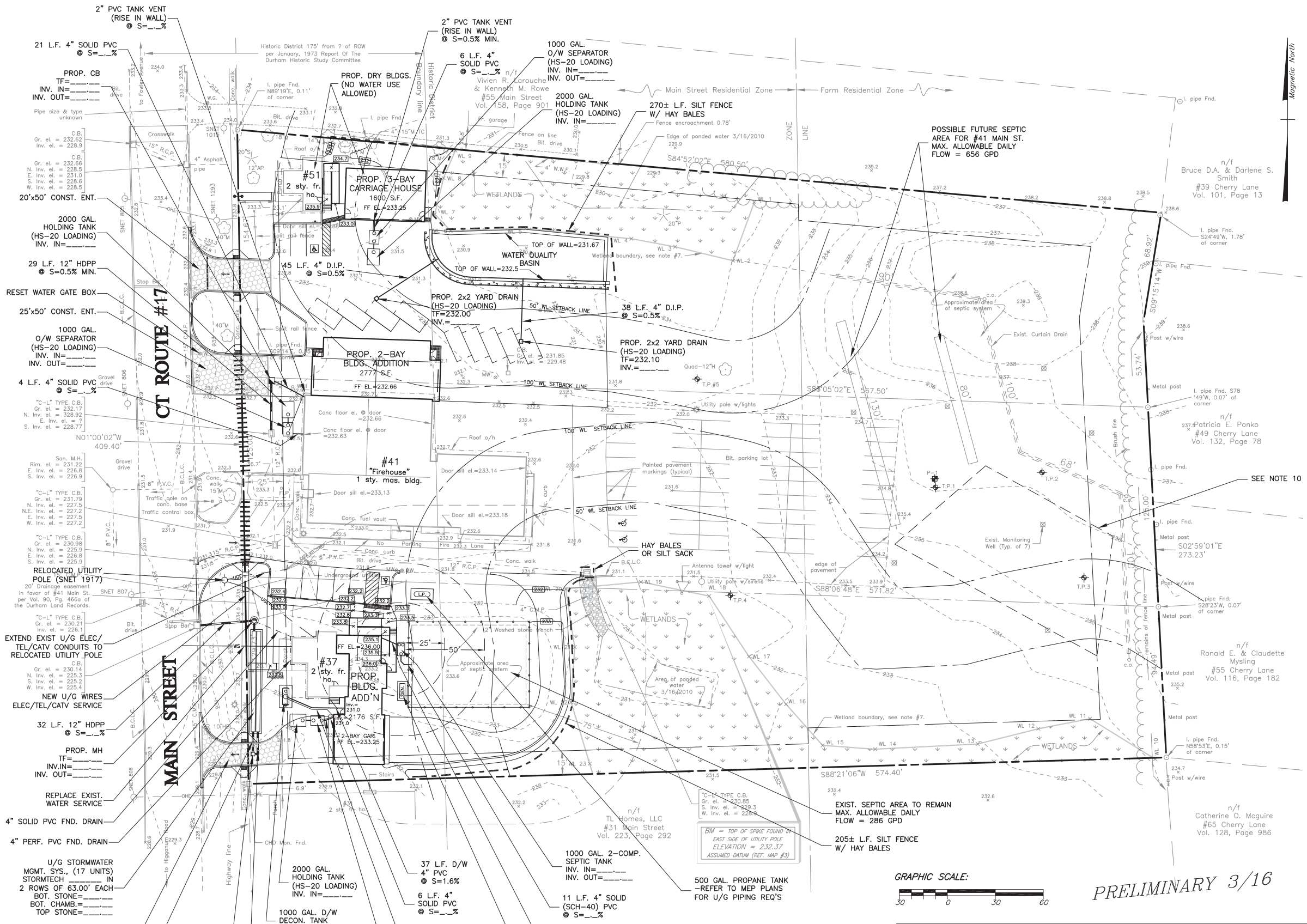
Scale: 1"=30'

Date: 2/13/15

Designed: D.W.S.

Drawn: K.D.K.

Sheet: C2



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10. Area determined to be unsuitable for septic disposal. See 6/21/2012 memorandum from Donald W. Smith, Jr., P.E.

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GRADING, UTILITY & EROSION CONTROL PLAN

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Designed: D.W.S.
Drawn: K.D.K.
Sheet: C3

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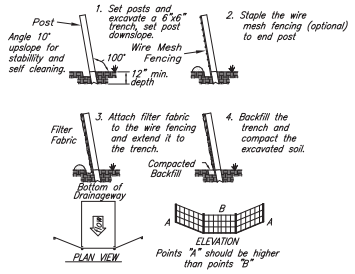
(203) 888-9660

⊸ = FLUSH CONDITIONS

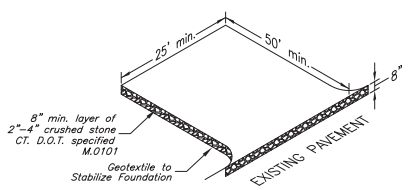
SEE SHEET C1 FOR LEGEND.



Source: U.S. Department of Agriculture, Soil Conservation Service, Storrs, Connecticut.

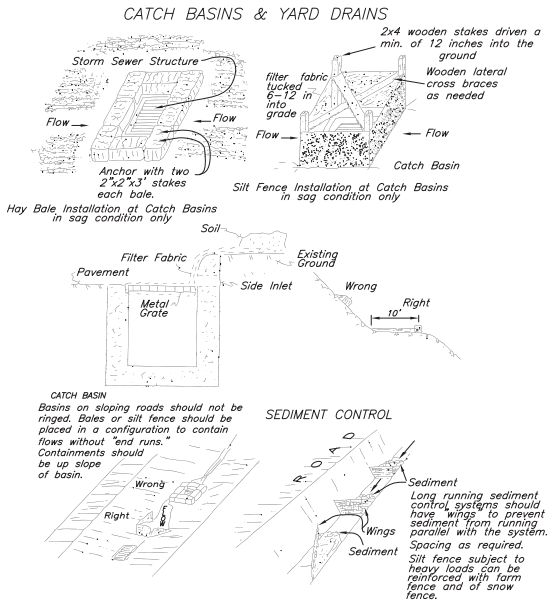
1 PLACEMENT AND CONSTRUCTION OF A SYNTHETIC FILTER BARRIER

N.T.S.



2 CONSTRUCTION ENTRANCE ANTI – TRACKING PAD

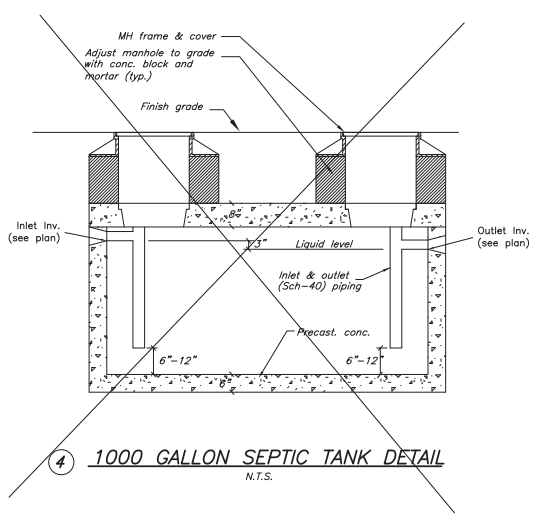
N.T.S.



Source: U.S. Department of Agriculture, Soil Conservation Service, Storrs, CT.

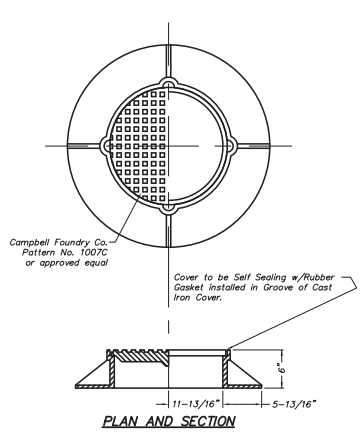
3 PLACEMENT OF CONTROL MEASURES AT CATCH BASINS & YARD DRAINS

N.T.S.



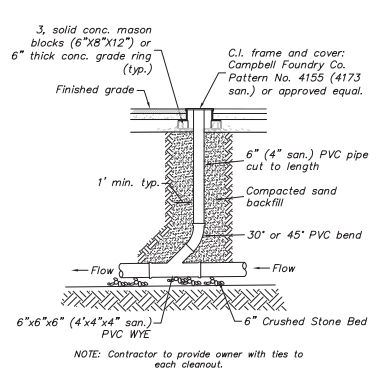
4 1000 GALLON SEPTIC TANK DETAIL

N.T.S.



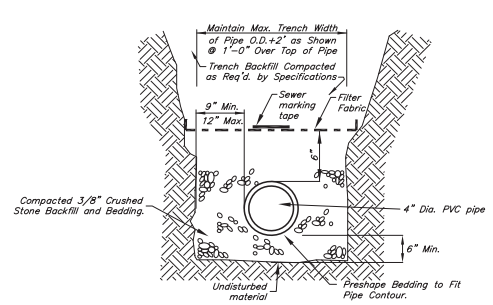
5 STANDARD CAST IRON MANHOLE FRAME & COVER

N.T.S.



6 STORM & SAN. CLEANOUT DETAIL

N.T.S



7 TYPICAL SEWER TRENCH

N.T.S.

SEPTIC SYSTEM CONSTRUCTION NOTES:

1. All methods and materials used in the construction of the SSDS indicated on this plan shall conform to the latest provisions of the CT Public Health Code Regulations and Technical Standards for Subsurface Sewage Disposal Systems.
2. The sewer pipe from the house to the septic tank shall be 4" diameter Schedule 40 PVC pipe or approved equal in conformance with the latest Health Code.
3. Solid PVC pipes and fittings shall conform to ASTM D–3034 SDR–35, perforated PVC pipes and fittings shall conform to ASTM D–3305 or in conformance with the latest Health Code.
4. Fields shall be staked prior to construction to prevent further compaction of the existing soil.
5. Construction equipment is to stay off the area of system before and after installation.
6. Septic system shall be protected from siltation and erosion during and after construction.
7. Septic system shall shed surface water after completion.
8. The contractor shall notify the design engineer at least 48 hrs. in advance of leaching area preparation and septic system installation in order to allow observation of the work.
9. Septic filter to be, Orenco Systems FT0444–36 or approved equal.

EROSION CONTROL NOTES:

1. Land disturbance shall be kept to the minimum necessary for construction operations.

2. All soil erosion and sediment control measures must be constructed in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control by the Connecticut Council on Soil and Water Conservation in cooperation with the Connecticut Department of Environmental Protection.

3. Erosion and sediment control measures shall be installed as depicted on this plan, and maintained in an effective condition throughout the construction period. Additional measures shall be installed as necessary and required.

4. All disturbed areas shall be permanently stabilized as soon as practicable. Seed all disturbed areas with a temporary seed mixture within 7 days after the suspension of grading work in disturbed areas where the suspension of work is expected to be more than 30 days but less than 1 year.

5. M_____ _____, and the Site Contractor (to be determined) are assigned the responsibility for implementing the control measures of this plan. This responsibility includes the installation and maintenance of control measures, informing all parties engaged on the construction site of the requirements and objectives of this plan, and notifying the Planning and Zoning Commission of the transfer of this responsibility, and for conveying a copy of this plan if title to the property is transferred.

GENERAL CONSTRUCTION SEQUENCE:

The anticipated time of completion for all aspects of the construction is six months (6) months from the initial start date.

The general sequence of work will be as follows:

1. Flag clearing limits, Notify "Call Before You Dig" (1–800–922–4455) and hold pre–construction meeting prior to any onsite activity. (Estimated Time: 5 days)

2. Install construction entrance (Estimated Time: 1 day)

3. Will project be built at once or in phases? _____

SEPTIC SYSTEM DESIGN CRITERIA

#51: DRY BLDG. – NO WATER USE.

#41 EXIST. FIRE STATION PEAK SEPTIC FLOW:

USE	PERSONS/DAY	GPD/PERSON	FLOW (GPD)
FACTORY EMPLOYEES (WITH SHOWERS)	3	35	105
OFFICE EMPLOYEES	5	20	100
TRAINING/MEETING RM. (WITH FOOD SRVC.)	55	5 @ TABLE 7=7.5	413
OR			
TRAINING/MEETING RM. (NO FOOD SRVC.)	115	3.5	403
SENIOR ACTIVITIES	20	5	100
		TOTAL	658 GPD

A WATER METER HAS RECENTLY BEEN INSTALLED.
DATA ON ACTUAL CONSUMPTION IS BEING COLLECTED AND SYSTEM DESIGN WILL BE BASED ON METER READINGS TIMES A 1.5 SAFETY FACTOR.

MINIMUM LEACHING SYSTEM SPREAD (MLSS):

MLSS = FF x PF x HF

PEAK DAILY FLOW: 658 GPD, FF = 658/300 = 2.2
PERCOLATION RATE: ACTUAL 1" IN 20.1 TO 30 MINUTES
PF = 2.0

RESTRICTIVE LAYER: ACTUAL OK = 18"
GROUND SLOPE: ACTUAL = 3–4%, HF = 48

MLSS = 2.2 x 2.0 x 48 = 212' REQUIRED
LENGTH PROVIDED = 210' –OK

#37 EMS FACILITY PEAK SEPTIC FLOW:

USE	PERSONS/DAY	GPD/PERSON	FLOW (GPD)
OFFICE EMPLOYEES	5	20	100
RESIDENTIAL CAMP (BUNK ROOM/DAY ROOM)	3	50	150
TRAINING/MEETING ROOM	6	3.5	21
		TOTAL	271 GPD

MINIMUM LEACHING SYSTEM SPREAD (MLSS):

MLSS = FF x PF x HF

PEAK DAILY FLOW: 271 GPD, FF = 271/300 = 0.9
PERCOLATION RATE: ACTUAL 1" IN 20.1 TO 30 MINUTES
PF = 1.5
RESTRICTIVE LAYER: AVERAGE ([18"+18" SYS.] + [18"@25']) /2 = 27"
GROUND SLOPE: ACTUAL = 1–2%, HF = 49

MLSS = 0.9 x 1.5 x 49 = 66' REQUIRED
LENGTH PROVIDED = 70' –OK

SYSTEM NOTES:

1. Water supplied by public water supply. Existing wells to be abandoned by licensed well driller.

2. No well within 75 feet of septic system.

3. No hot tubs, spas, garbage grinders, water systems or swimming pools shall be discharged into septic system area.

4. Design of system based on the noted soil test data. The installer of the system shall be responsible for notifying the engineer of additional field conditions, such as ledge, groundwater, bury holes, etc., discovered during construction. Such conditions may require system redesign.

5. #37 Main St. reference map: map entitled "Property of Austin M. Ackerman, Jr., Main St. Durham, Conn., Septic System Repair, (South of Firehouse)," Scale: As Noted, Date: May 13, 1985, Revised: 12/2/85, by Dean A. Thomasson, P.E., Durham, Connecticut.

SOIL TESTING RESULTS – #41 MAIN ST.:

SOIL TESTING PERFORMED BY THE OFFICE OF DONALD W. SMITH, JR., P.E. CONSULTING ENGINEER, AND OBSERVED BY WILLIAM MILARDO R.S. OF THE DURHAM HEALTH DEPT.

TP #1 (12/18/09)

0"–12" TOPSOIL
12"–22" RED–BRN SILTY LOAM
22"–84" RED–BRN COMPACT SILTY HARDPAN

NO LEDGE / WATER @ 16" / MOTTLING @ 22"

TP #2 (12/18/09)

0"–10" TOPSOIL
10"–24" RED–BRN SILTY LOAM
24"–84" RED–BRN COMPACT SILTY HARDPAN

NO LEDGE / WATER @ 18" / MOTTLING @ 32"

TP #3 (12/18/09)

0"–10" TOPSOIL
10"–18" RED–BRN SILTY LOAM
18"–84" RED–BRN COMPACT SILTY HARDPAN

NO LEDGE / WATER @ 12 – 16" / MOTTLING @ 18"

TP #4 (12/18/09)

0"–4" TOPSOIL
4"–40" RED–BRN SILTY LOAM
40"–84" RED–BRN COMPACT SILTY HARDPAN

NO LEDGE / WATER @ 16" / NO MOTTLING

TP #5 (12/18/09)

0"–8" ORG–BRN SANDY FILL
8"–26" DK BRN TOPSOIL / WETLAND SOIL
26"–84" RED–BRN COMPACT, MOTTLED SILTY HARDPAN

NO LEDGE / WATER @ 24"(16" INTO ORIGINAL GROUND) / MOTTLING @ 26" (18" INTO ORIGINAL GROUND)

PERCOLATION TEST: #1
DEPTH: 16"
DATE: 12/18/09

TIME	D.T.W.	INC. DROP	MIN./IN.
9:00	PRESOAK		
9:39	3 3/4"		
9:49	6 1/2"	2 3/4"	3.64
9:59	9"	2 1/2"	4
10:09	10 ?"	1 ?"	5.7
10:19	12 1/4"	1 1/2"	6.67
10:29	13 1/2"	1 1/4"	8
10:39	14 1/4"	3/4"	13.33

MINIMUM PERCOLATION RATE = 1" IN 10.1 TO 20.0 MIN.

PRELIMINARY 3/16

REVISIONS		
NO.	DESCRIPTION	DATE

SILVER / PETRUCELLI + ASSOCIATES
Architects / Engineers / Interior Designers
3190 Whitney Avenue, Hamden, CT 06518-2340
Tel. 203 230 9007 Fax. 203 230 8247
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DONALD W. SMITH, JR., P.E.
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56 GREENWOOD CIRCLE SEYMOUR, CT 06483
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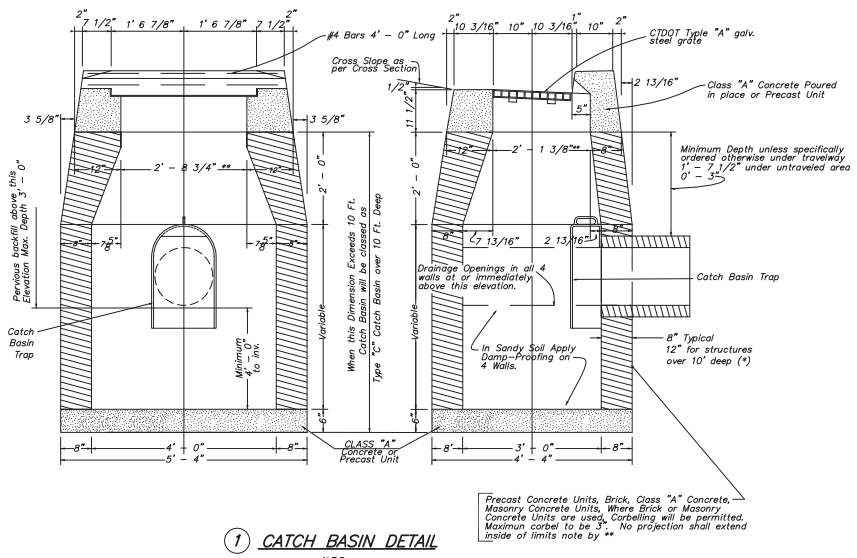
SEPTIC SYSTEM & EROSION CONTROL DETAILS

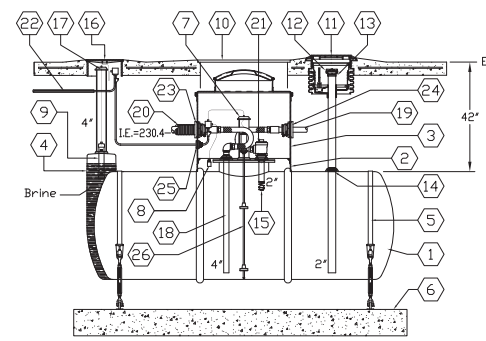
TOWN OF DURHAM
PUBLIC SAFETY COMPLEX
#37, #41 & #51 MAIN STREET
(CT ROUTE 17)
DURHAM, CONNECTICUT

Job No. 09–14
Scale: As Noted
Date: 2/13/15
Designed: D.W.S.
Drawn: K.D.K.
Sheet: C4



1 CATCH BASIN DETAIL

N.T.S.

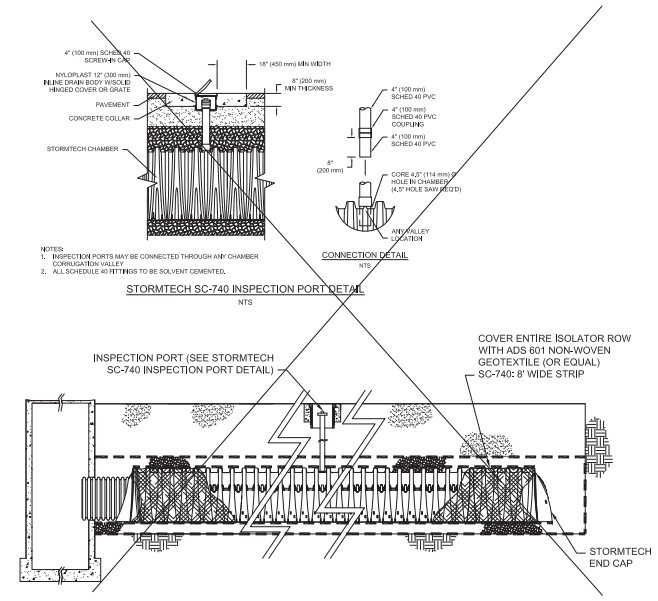


PARTS LIST			
No.	Manuf.	Model	Description
1	Xerxes		1000 gal. double-wall fiberglass chem waste tank, 4' dia. x 11'-7" long*
2	Xerxes		42" dia. x 6" tall attached collar
3	Xerxes		42" dia. watertight attached collar riser (piping sump)
4	Dmntec	K1-V, DEL8000II	Monitor kit w/printer; to include #7 probe & #26 float, RS-232 port, gal. display, local alarms
5			Fiberglass hold-down straps (2) w/Harding 3/4"x9' galv. jaw turnbuckles (4)
6			Set of two 12' conc. deadman hold-downs
7	Dmntec		MTG inventory probe
8	Dmntec	BX-LS	Piping sump leak sensor
9	Dmntec	BX-RES	Fiberglass reservoir sensor
10	Morrison	418LC-3800	38" dia. manhole with composit lid, bolted
11	Fairfield	SCM-5/2	Five gal. pump-out manhole, H-20, stainless bucket
12	Evertite	20DCSS	2" stainless dust cap, pump-out
13	Evertite	20ASS	2" adapter x 2" female thread, stainless, pump-out
14	OEM	4603	4" x 2" double tapped bushing
15			Ball float
16	Morrison	418TM-1100AM	18" dia. interstitial monitor manhole
17	Dmntec	VC-1	Vented reservoir cap kit
18			4" PVC wastewater drain w/OEM 4609 6" x 4" double tapped bushing
19	Ameron	22B54386	2" dia. single wall fiberglass vent pipe
20	Ameron	44K64386	4" dia. LCX coaxial FRP pipe
21	OPW	233-4420	0"x2" vent valve extractor
22			1" conduit to building
23	OPW-FW	EBF-0400	4" flex entry bulkhead, drain
24	OPW-FW	EBF-0200F	2" flex entry bulkhead, vent
25	OPW-FW	EBF-0751	1" flex entry bulkhead, conduit
26	Dmntec	SSF-2	2" stainless steel product float

*Tank (item #1) to include premium vinylester chemical lining, 22" dia. manway w/four 4" & one 6" npt cover fittings, 4" dia. npt shell wall service fitting, and items #2 & 3 (42" collar & riser), with reservoir factory-filled w/brine.

2 DECON. HOLDING TANK DETAIL

N.T.S.



3 STORMTECH SC-740 ISOLATOR ROW PROFILE

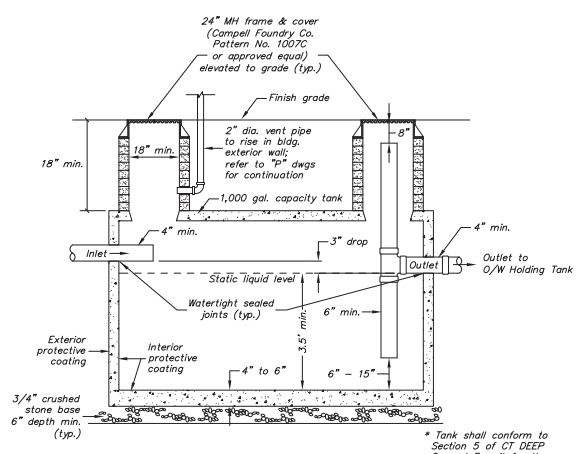
N.T.S.

STORMWATER CHAMBER SPECIFICATIONS:

1. CHAMBERS SHALL BE STORMTECH SC-740 OR APPROVED EQUAL.
2. CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN POLYPROPYLENE OR POLYETHYLENE RESINS TESTED USING ASTM STANDARDS.
3. CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12 ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCE.
6. ONLY CHAMBERS THAT ARE APPROVED BY THE ENGINEER WILL BE ALLOWED. THE CONTRACTOR SHALL SUBMIT (3 SETS) OF THE FOLLOWING TO THE ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
   a. A STRUCTURAL EVALUATION BY A REGISTERED STRUCTURAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12 ARE MET. THE 50-YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2418-05 MUST BE USED AS A PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
7. CHAMBERS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.
8. ALL DESIGN SPECIFICATIONS FOR CHAMBERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S LATEST DESIGN MANUAL.
9. THE INSTALLATION OF CHAMBERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S LATEST INSTALLATION INSTRUCTIONS.

STORMTECH GENERAL NOTES:

1. STORMTECH REQUIRES INSTALLING CONTRACTORS TO USE AND UNDERSTAND STORMTECH'S LATEST INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING SYSTEM INSTALLATION.
2. STORMTECH TECHNICAL SERVICES DEPARTMENT OFFERS INSTALLATION CONSULTATIONS TO INSTALLING CONTRACTORS. CONTACT OUR TECHNICAL SERVICES REPRESENTATIVE AT LEAST 30 DAYS PRIOR TO SYSTEM INSTALLATION TO ARRANGE A PRE-INSTALLATION CONSULTATION. OUR REPRESENTATIVES CAN THEN ANSWER QUESTIONS OR ADDRESS COMMENTS ON THE STORMTECH CHAMBER SYSTEM AND INFORM THE INSTALLING CONTRACTOR OF THE MINIMUM INSTALLATION REQUIREMENTS BEFORE BEGINNING THE SYSTEM'S CONSTRUCTION. CALL **1-888-892-2694** TO SPEAK TO A TECHNICAL SERVICES REPRESENTATIVE OR VISIT **WWW.STORMTECH.COM** TO RECEIVE A COPY OF OUR INSTALLATION INSTRUCTIONS.
3. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE DESIGN ENGINEER.
4. AASHTO M288 CLASS 2 NON-WOVEN GEOTEXTILE ADS 601 OR EQUAL (FILTER FABRIC) MUST BE USED AS INDICATED IN THE DETAILS.
5. STONE PLACEMENT BETWEEN CHAMBERS ROWS AND AROUND PERIMETER MUST FOLLOW INSTRUCTIONS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
6. BACKFILLING OVER THE CHAMBERS MUST FOLLOW REQUIREMENTS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
7. THE CONTRACTOR MUST REFER TO STORMTECH'S INSTALLATION INSTRUCTIONS FOR A TABLE OF ACCEPTABLE VEHICLE LOADS AT VARIOUS DEPTHS OF COVER. THIS INFORMATION IS ALSO AVAILABLE AT STORMTECH'S WEBSITE: **WWW.STORMTECH.COM.** THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING VEHICLES THAT EXCEED STORMTECH'S REQUIREMENTS FROM TRAVELING ACROSS OR PARKING OVER THE STORMWATER SYSTEM. TEMPORARY FENCING, WARNING TAPE AND APPROPRIATELY LOCATED SIGNS ARE COMMONLY USED TO PREVENT UNAUTHORIZED VEHICLES FROM ENTERING SENSITIVE CONSTRUCTION AREAS.
8. THE CONTRACTOR MUST APPLY EROSION AND SEDIMENT CONTROL MEASURES TO PROTECT THE STORMWATER SYSTEM DURING ALL PHASES OF SITE CONSTRUCTION PER LOCAL CODES AND DESIGN ENGINEER'S SPECIFICATIONS.

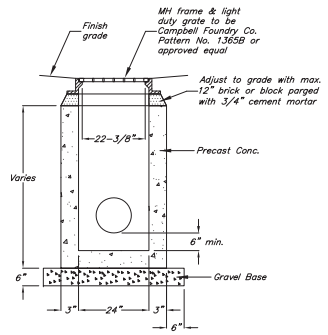


4 OIL/WATER SEPARATOR TANK*

(HS-20 LOADING REQUIRED)

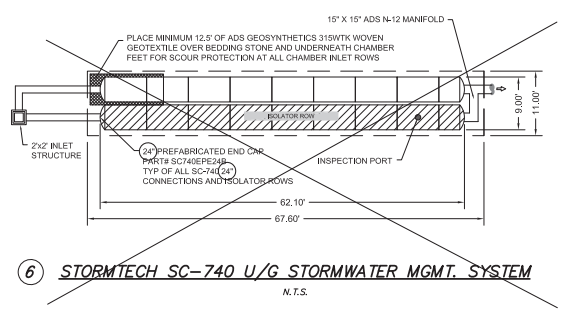
N.T.S.

NOTE: the Owner is responsible for registering the oil/water separator system with the CT DEEP.



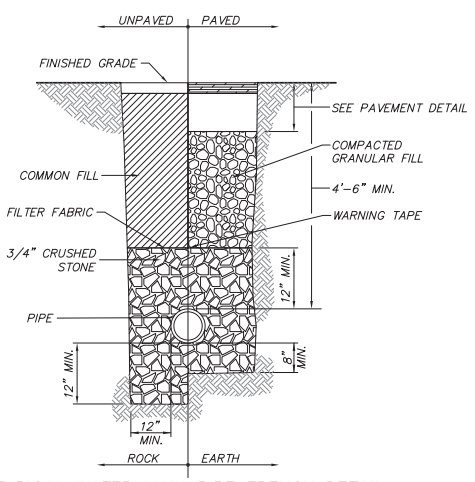
5 YARD DRAIN

N.T.S.



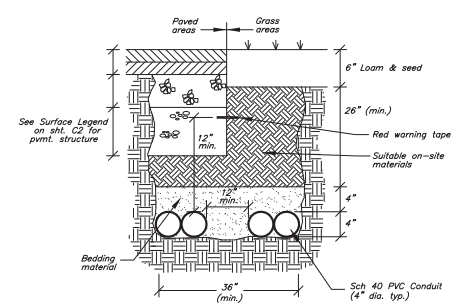
6 STORMTECH SC-740 U/G STORMWATER MGMT. SYSTEM

N.T.S.



8 TYPICAL WATER MAIN PIPE TRENCH DETAIL

NOT TO SCALE

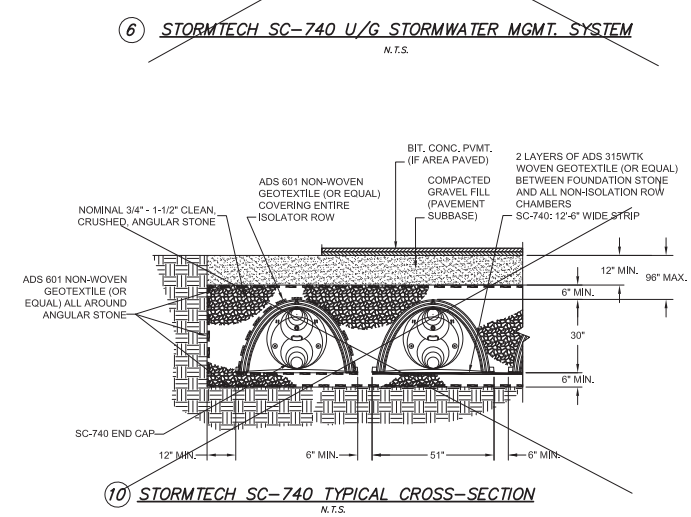


NOTES:

1. A minimum of 12" separation, vertical or horizontal, shall be maintained between communication or CATV cables and electrical cable(s) or their conduits.
2. A minimum separation of 12" shall be maintained between electrical conduit and gas service lines. Join trenching is not permitted with any gas lines.
3. A minimum separation of 12" shall be maintained between electric conduits and water service lines. Separation between electrical conduits and main water lines shall be 18".

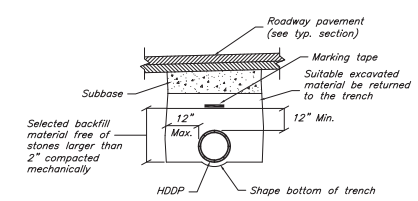
9 PRIMARY & SECONDARY ELEC. SERVICE U/G CONDUIT BEDDING DETAIL

N.T.S.



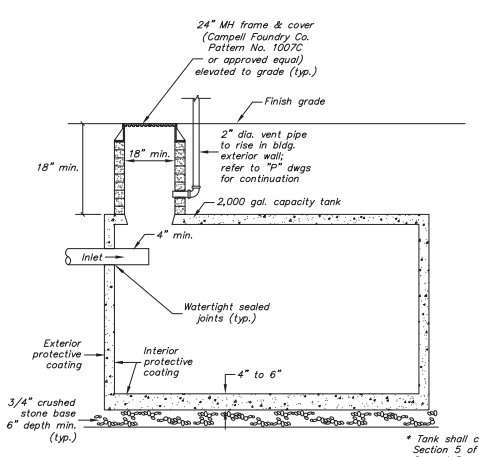
10 STORMTECH SC-740 TYPICAL CROSS-SECTION

N.T.S.



11 HDPP STORM DRAIN TRENCH

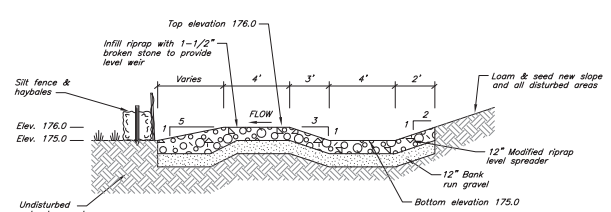
N.T.S.



7 OIL/WATER HOLDING TANK*

(HS-20 LOADING REQUIRED)

N.T.S.



12 TYPICAL SECTION THRU LEVEL SPREADER

NOT TO SCALE

PRELIMINARY 3/16

REVISIONS		
NO.	DESCRIPTION	DATE

SILVER / PETRUCELLI + ASSOCIATES
Architects / Engineers / Interior Designers
3190 Whitney Avenue, Hamden, CT 06518-2340
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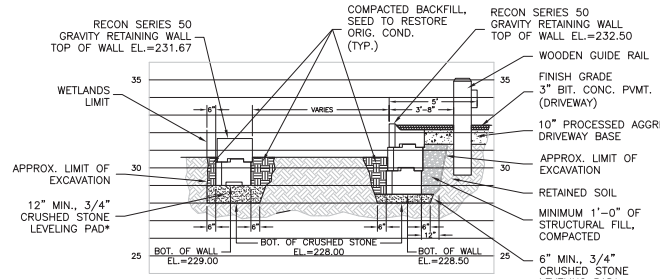
silverpetrucelli.com

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

STORM & UTILITY DETAILS

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

Job No. 09-14
Scale: As Noted
Date: 2/13/15
Designed: D.W.S.
Drawn: K.D.K.
Sheet: C5

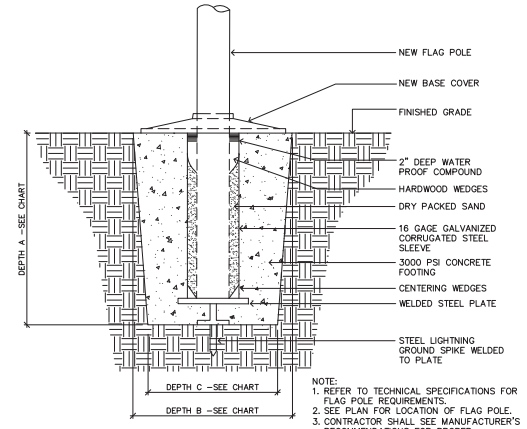


1. This section is provided to display typical wall construction. Wall geometry, unit type, and placement may vary in accordance with the site plan.
2. Wall shown is designed as a gravity wall. Use of geogrid is not necessary.
3. Allowable bearing capacity of foundation soils shall be no less than 4000 psf. Preparation of foundation subgrade should be reviewed and approved by the design engineer.
4. Heavy equipment should not be utilized within 3 feet of the back of the wall.
5. Refer to RECON "Design and Construction Manual" for additional details on RECON wall products and their use.

TYPICAL CROSS-SECTION

1 MODULAR BLOCK RETAINING WALLS

SCALE: 1 INCH = 5 FEET

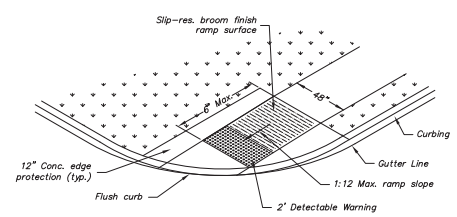


POLE HEIGHT	DEPTH A	DEPTH B	DEPTH C
20'	3'-6"	30"	24"
25'	3'-6"	30"	24"
30'	3'-6"	30"	24"
35'	4'-0"	36"	30"
40'	4'-6"	42"	36"
45'	5'-0"	48"	42"
50'	5'-6"	48"	42"
60'	6'-10"	48"	42"
70'	8'-0"	60"	48"
80'	9'-0"	60"	48"

NOTE:
1. REFER TO TECHNICAL SPECIFICATIONS FOR FLAG POLE REQUIREMENTS.
2. SEE PLAN FOR LOCATION OF FLAG POLE.
3. CONTRACTOR SHALL SEE MANUFACTURER'S RECOMMENDATIONS FOR PROPER INSTALLATION OF FLAG POLE.

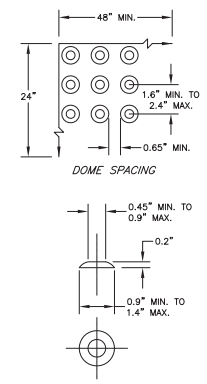
3 FLAG POLE FOOTING

N.T.S.



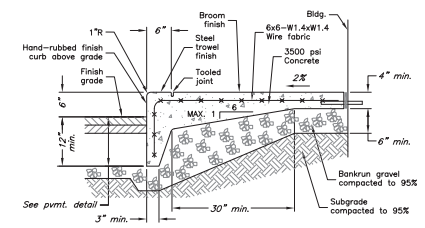
5 DIAGONAL SIDEWALK FLUSH CURB & RAMP

N.T.S.



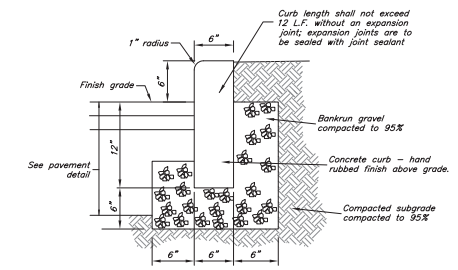
6 DETECTABLE WARNING AREA

N.T.S.



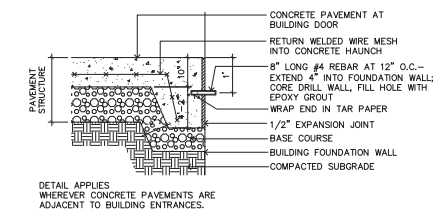
7 CONCRETE WALK W/INTEGRAL CURB

N.T.S.



8 CONCRETE CURB

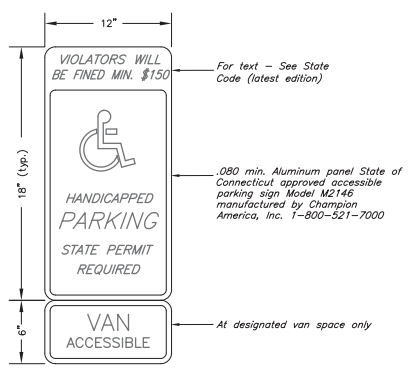
N.T.S.



DETAIL APPLIES WHEREVER CONCRETE PAVEMENTS ARE ADJACENT TO BUILDING ENTRANCES.

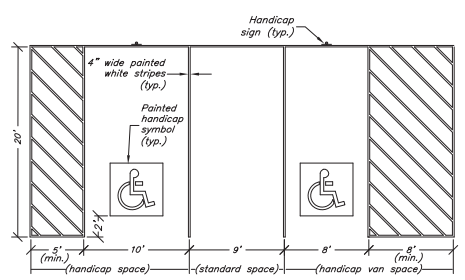
9 PINNED CONCRETE PAVEMENT AT BUILDING DOOR

N.T.S.



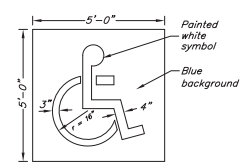
10 HANDICAP PARKING SIGN

N.T.S.



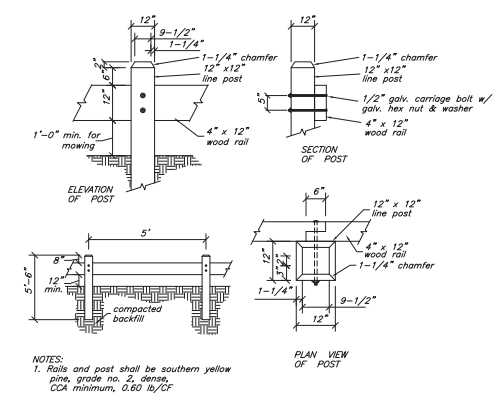
11 TYPICAL HANDICAP PARKING SPACE PAVEMENT MARKING

N.T.S.



12 STANDARD HANDICAP SYMBOL PAVEMENT MARKING

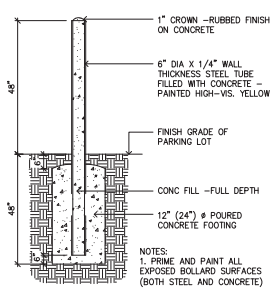
N.T.S.



NOTES:
1. Rails and post shall be southern yellow pine, grade no. 2, dense, CLA minimum, 0.60 lb/CF

15 WOODEN GUIDE RAIL

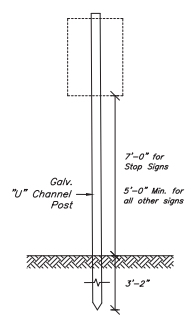
N.T.S.



NOTES:
1. PRIME AND PAINT ALL EXPOSED BOLLARD SURFACES (BOTH STEEL AND CONCRETE)

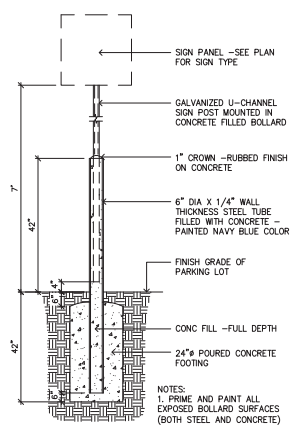
16 STEEL BOLLARD

N.T.S.



17 METAL SIGN DETAIL

N.T.S.



NOTES:
1. PRIME AND PAINT ALL EXPOSED BOLLARD SURFACES (BOTH STEEL AND CONCRETE)

18 SIGN MOUNTED IN STEEL BOLLARD

N.T.S.

PRELIMINARY 3/16

REVISIONS		
NO.	DESCRIPTION	DATE

SILVER / PETRUCELLI + ASSOCIATES
Architects / Engineers / Interior Designers
3190 Whitney Avenue, Hamden, CT 06518-2340
Tel. 203 230 9007 Fax. 203 230 8247
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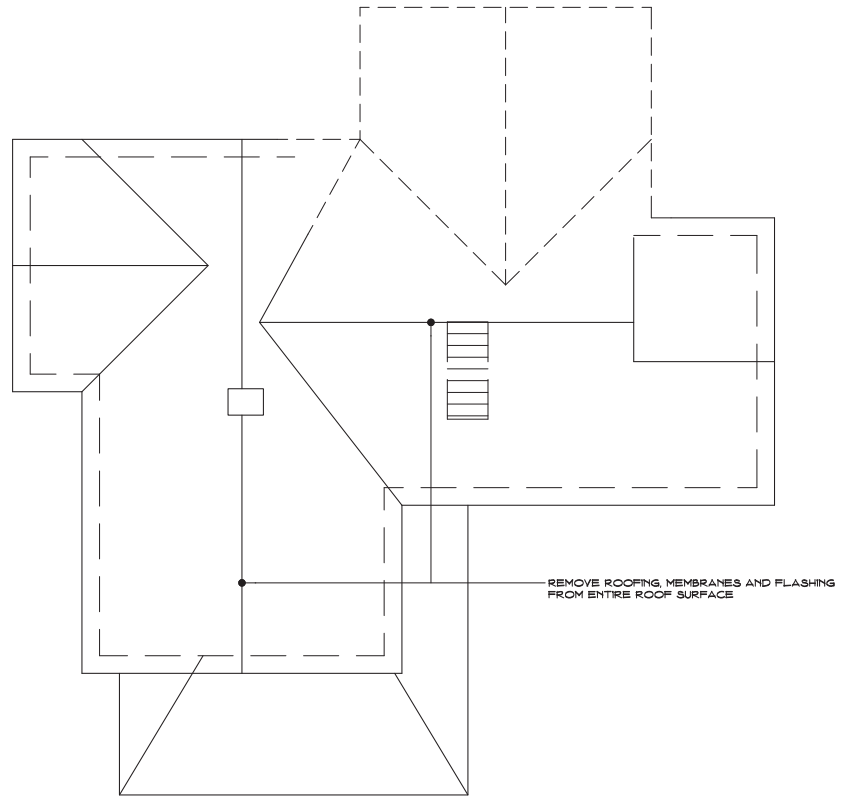
DONALD W. SMITH, JR., P.E.
CONSULTING ENGINEER
56 GREENWOOD CIRCLE SEYMOUR, CT 06483
Tel. 203-888-4904 Fax 203-881-3434 dwsjrpe@sbcglobal.net

GENERAL DETAILS

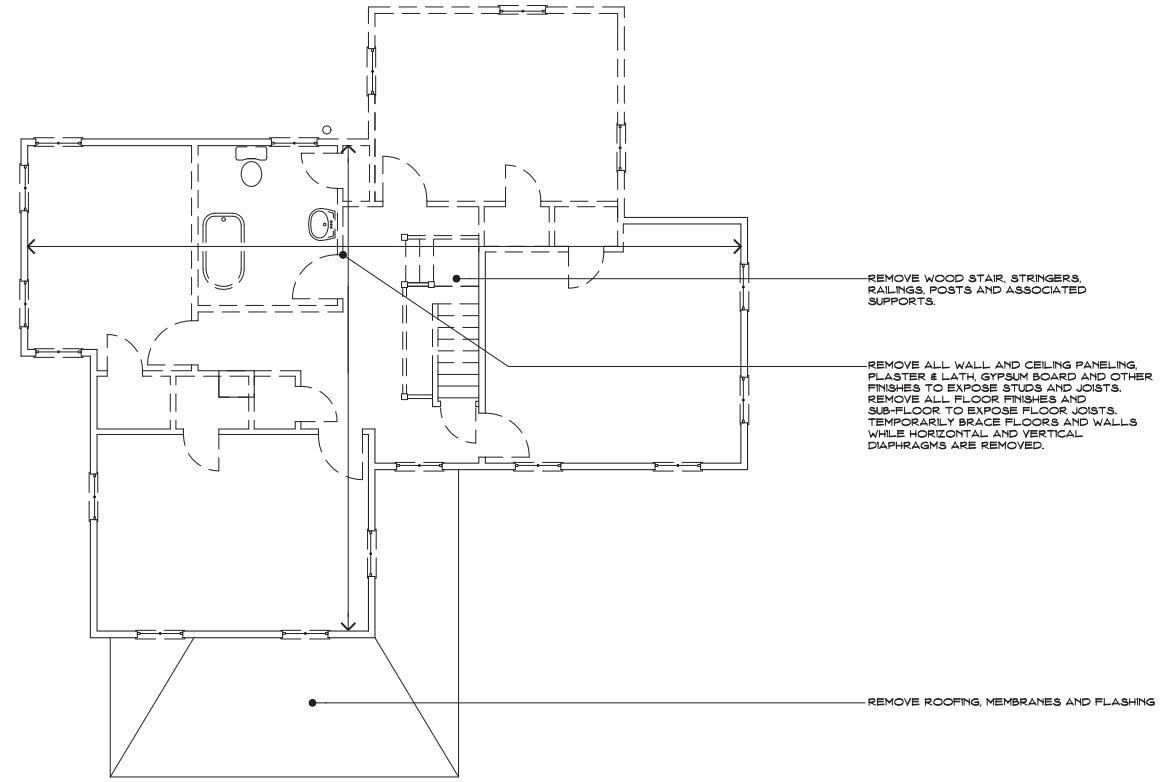
TOWN OF DURHAM
PUBLIC SAFETY COMPLEX
#37, #41 & #51 MAIN STREET
(CT ROUTE 17)
DURHAM, CONNECTICUT

Job No. 09-14
Scale: As Noted
Date: 2/13/15
Designed: D.W.S.
Drawn: K.D.K.
Sheet: C6



ROOF PLAN - DEMOLITION (4 / A02)

SCALE: 1/4" = 1'-0"



SECOND FLOOR PLAN - DEMOLITION (3 / A02)

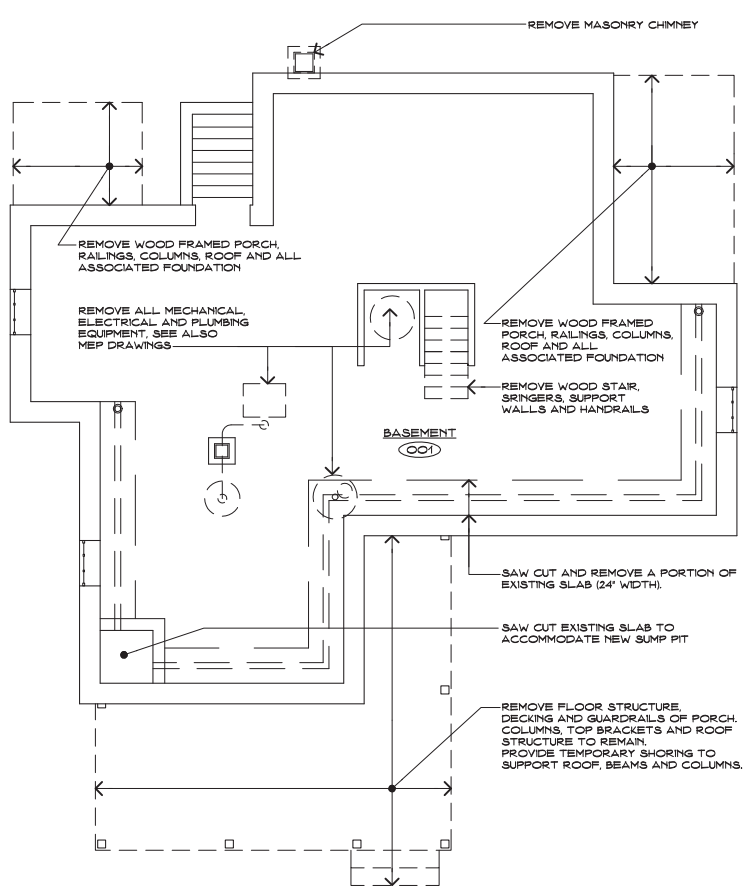
SCALE: 1/4" = 1'-0"

LEGEND:

- EXISTING WALLS TO REMAIN
- EXISTING WALLS TO BE REMOVED
- EXISTING PLUMBING FIXTURES TO BE REMOVED. SEE ALSO PLUMBING DRAWINGS
- DASHED LINES INDICATE REMOVALS. SEE DEMOLITION NOTES ON ARCHITECTURALS AS WELL AS ALL M.E.P. DRAWINGS.
- EXISTING DOOR AND HARDWARE TO BE REMOVED
- EXISTING WINDOW TO BE REMOVED

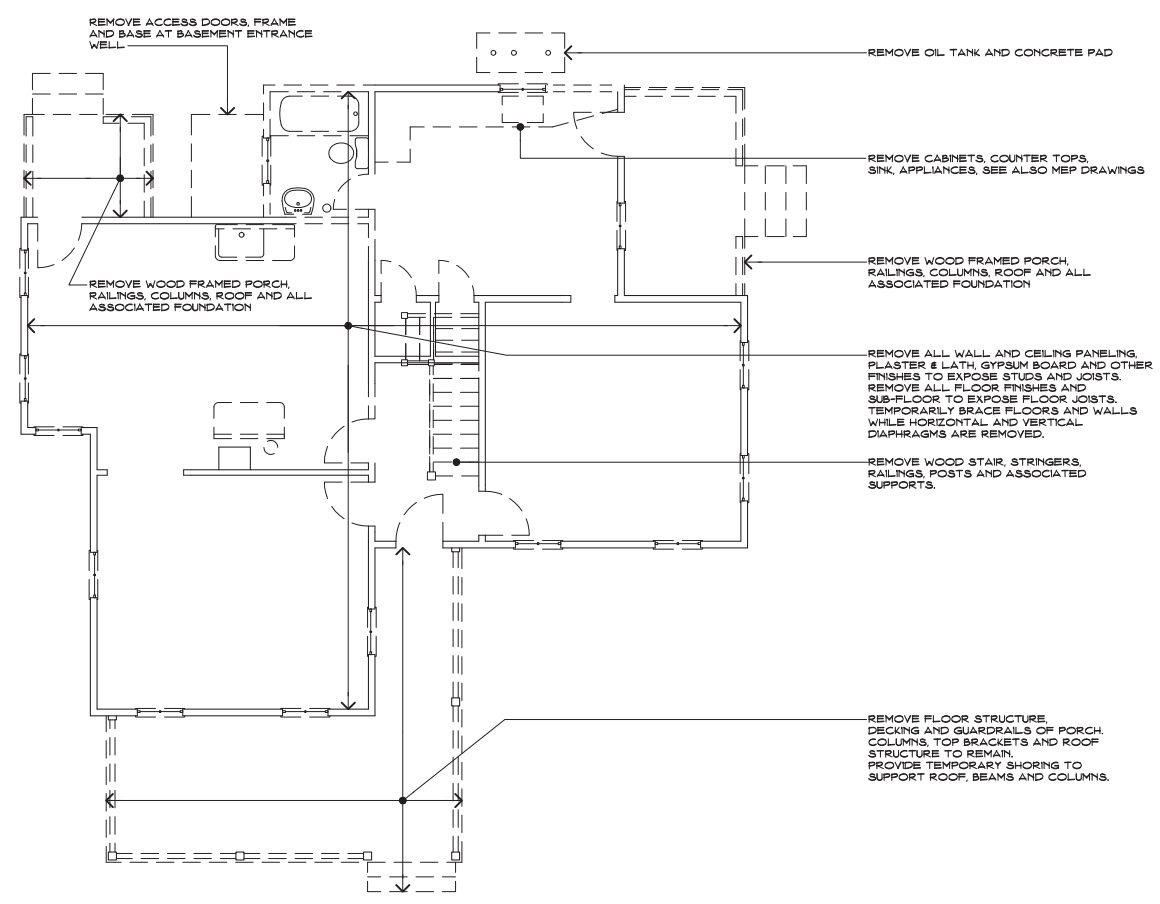
NOTE:
SEE ALSO MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR ADDITIONAL REMOVALS REQUIRED.

GENERAL NOTE:
REMOVE ALL EXTERIOR SIDING, TRIM, FASCIAS, RAKES, SOFFITS, ETC. TO EXPOSE EXISTING SHEATHING. REPLACE PORTIONS OF DECAYED OR DAMAGED SHEATHING.



BASEMENT FLOOR PLAN - DEMOLITION (1 / A02)

SCALE: 1/4" = 1'-0"



FIRST FLOOR PLAN - DEMOLITION (2 / A02)

SCALE: 1/4" = 1'-0"

NORTH

Project Title:
Renovation and Addition to
37 & 51 Main Street
Durham, Connecticut 06422

SILVER / PETRUCELLI + ASSOCIATES
Architects / Engineers / Interior Designers
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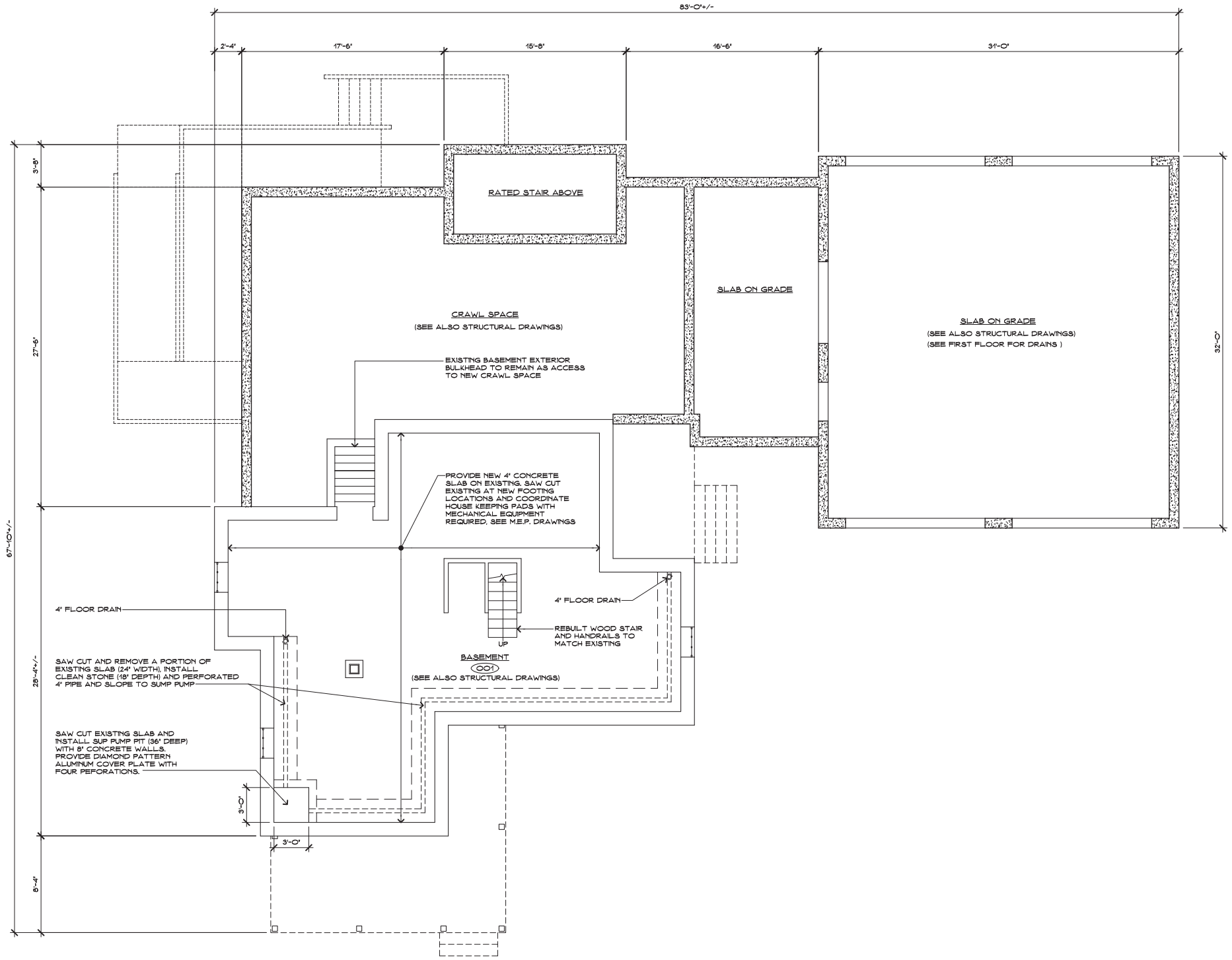
Tel. 203 230 9007 Fax. 203 230 8247
silverpetrucelli.com

Revision	Description	Date	Revised By

Drawing Title:
DEMOLITION PLANS
37 MAIN STREET

Date: MARCH 23, 2015
Scale: 1/4" = 1'-0"
Drawn By: MJC
SPA Project Number: 14.131

Drawing Number: A02



BASEMENT/FOUNDATION FLOOR PLAN

SCALE: 1/4" = 1'-0"

1 / A03

LEGEND:

- EXISTING WALLS TO REMAIN
- NEW WALLS
- NEW CONCRETE WALLS
- NEW PLUMBING FIXTURES, SEE PLUMBING DRAWINGS
- NEW WINDOW

NOTE:
SEE ALSO STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR ADDITIONAL WORK REQUIRED.

NORTH

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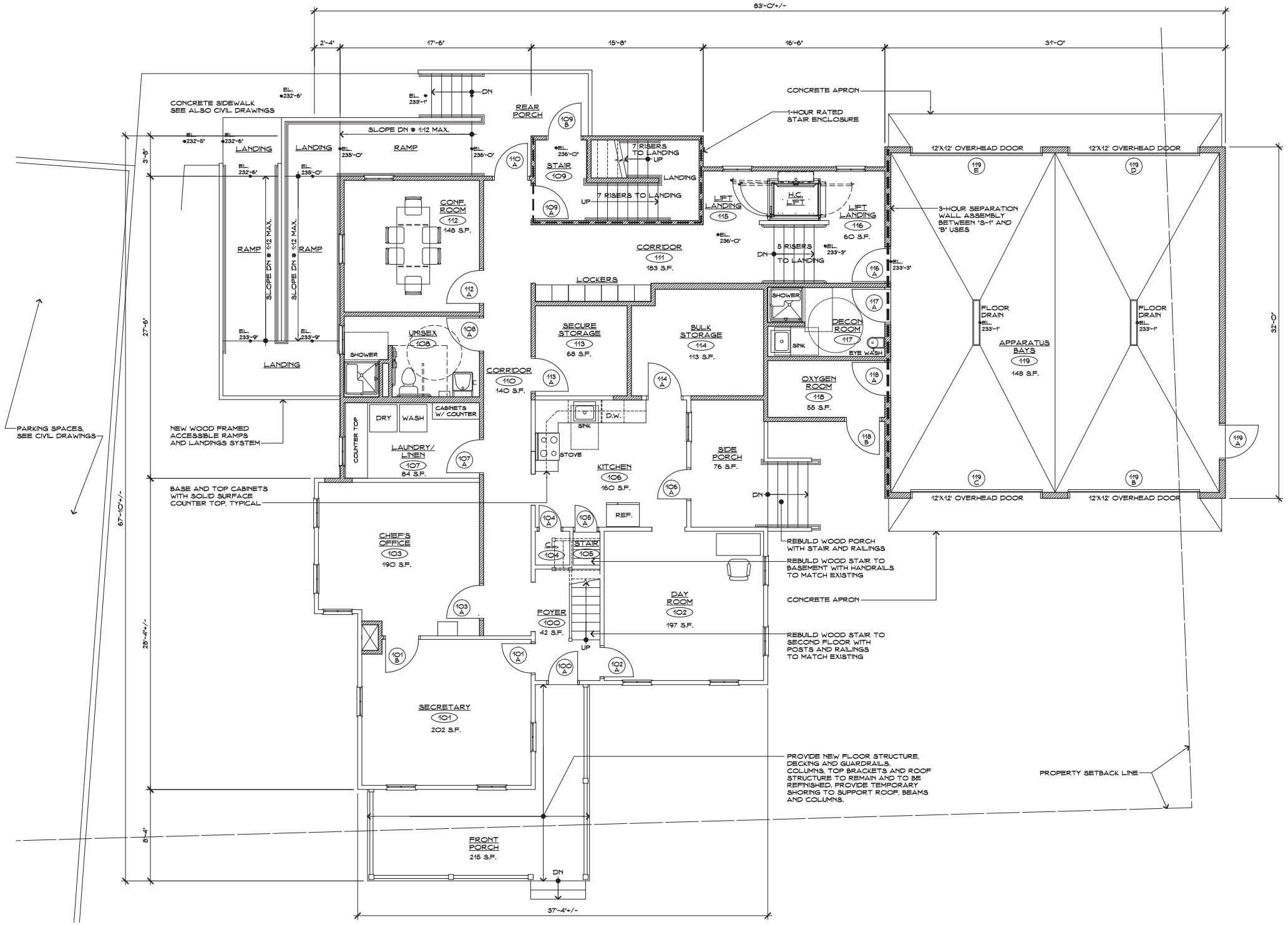
Revision:	Description:	Date:	Revised By:

Drawing Title:
BASEMENT/
FOUNDATION PLAN
37 MAIN STREET

Date: MARCH 23, 2015
Scale: 1/4" = 1'-0"
Drawn By: MJC
SPA Project Number: 14.131

Drawing Number:
A03



FIRST FLOOR PLAN

SCALE: 1/4" = 1'-0"

1 / A04

LEGEND:

- EXISTING WALLS TO REMAIN
- NEW WALLS
- NEW CONCRETE WALLS
- NEW PLUMBING FIXTURES, SEE PLUMBING DRAWINGS
- NEW WINDOW

NOTE:
SEE ALSO STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR ADDITIONAL WORK REQUIRED.

GENERAL NOTES:

1. ALL NEW AND EXISTING FLOORS SHALL RECEIVE NEW PLYWOOD SUBFLOOR AND FINISH FLOOR.
2. ALL EXTERIOR WALLS, FIRST FLOOR JOISTS AND ATTIC JOISTS SHALL BE INFILLED WITH BATT INSULATION.
3. ALL EXTERIOR AND INTERIOR WALLS SHALL RECEIVE GYPSUM WALL BOARD, PAINTED.
4. ROOMS: 108, 117, 206 AND 207 SHALL RECEIVE CERAMIC TILE FLOORING AND WAINSCOTING ON WALLS.
5. ROOMS: 106, 107, 113, 114 AND 118 SHALL RECEIVE LINOLEUM FLOORING.
6. APPARATUS BAY ROOM 119 SHALL RECEIVE APOXY FLOOR PAINT.
7. ALL OTHER ROOMS: SHALL RECEIVE HARDWOOD FLOORING WITH CLEAR COAT.

NORTH

Project Title:
Renovation and Addition to
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Durham, Connecticut 06422

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silverpetrucelli.com

Revisions:	Description:	Date:	Revised By:

Drawing Title:
1st FLOOR PLAN
37 MAIN STREET

Date: MARCH 23, 2015
Scale: 1/4" = 1'-0"
Drawn By: MJC
SPS Project Number: 14.131

Drawing Number: A04

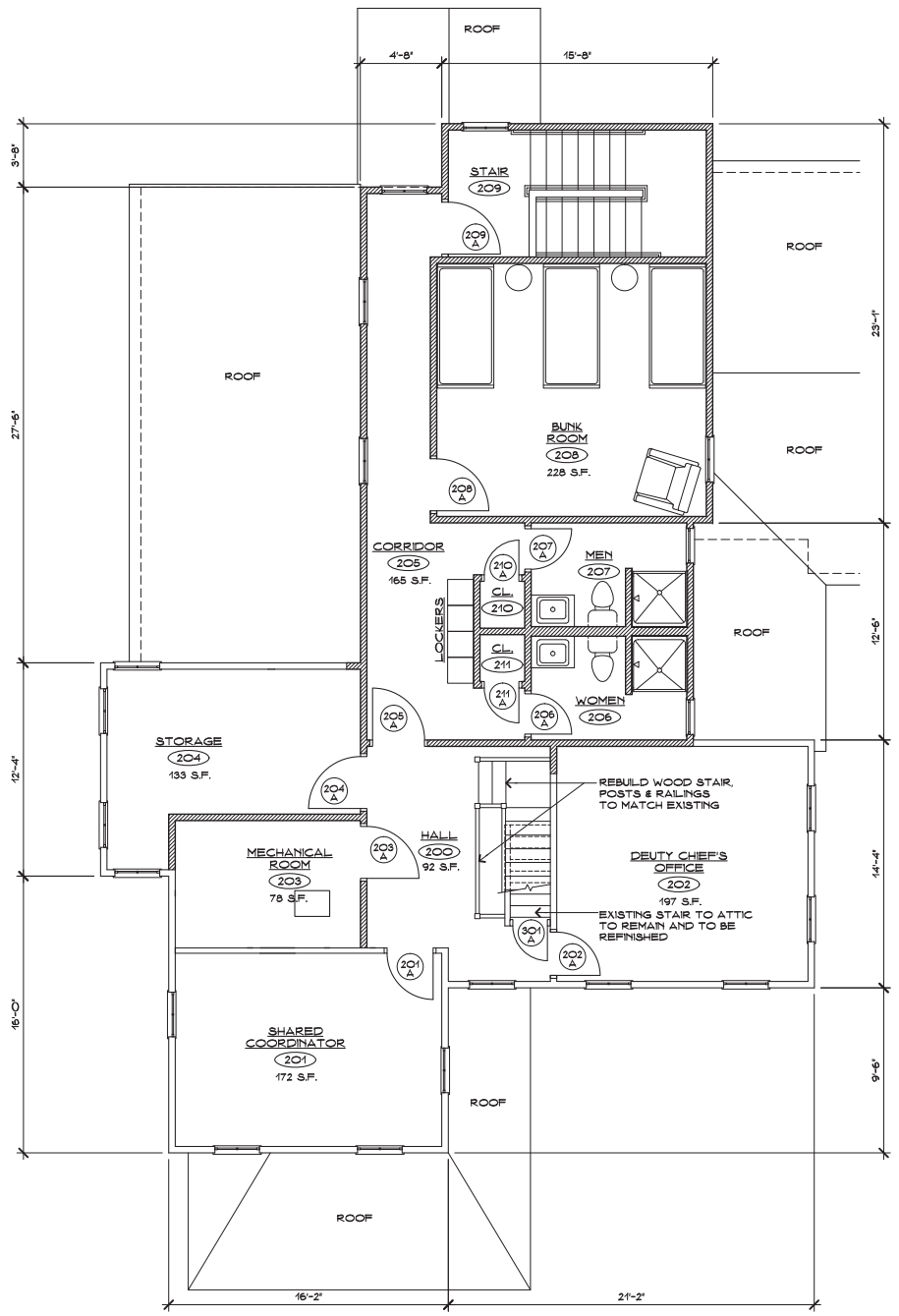
GENERAL NOTES:

1. ALL NEW AND EXISTING FLOORS SHALL RECEIVE NEW PLYWOOD SUBFLOOR AND FINISH FLOOR.
2. ALL EXTERIOR WALLS, FIRST FLOOR JOISTS AND ATTIC JOISTS SHALL BE INFILLED WITH BATT INSULATION.
3. ALL EXTERIOR AND INTERIOR WALLS SHALL RECEIVE GYPSUM WALL BOARD, PAINTED.
4. ROOMS: 108, 117, 206 AND 207 SHALL RECEIVE CERAMIC TILE FLOORING AND WAINSCOTING ON WALLS.
5. ROOMS: 106, 107, 113, 114 AND 118 SHALL RECEIVE LINOLEUM FLOORING.
6. APPARATUS BAY ROOM 119 SHALL RECEIVE APOXY FLOOR PAINT.
7. ALL OTHER ROOMS: SHALL RECEIVE HARDWOOD FLOORING WITH CLEAR COAT.

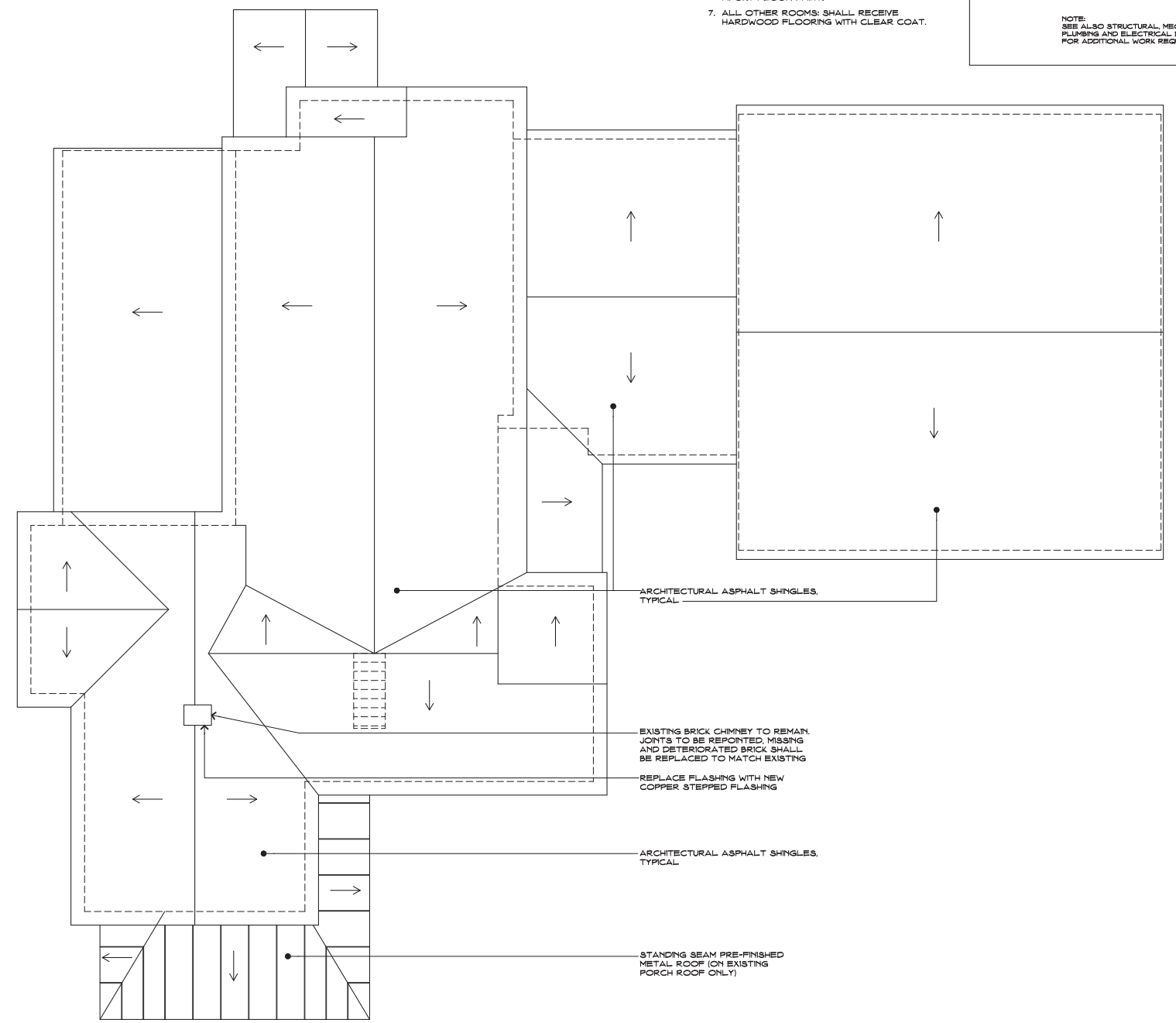
LEGEND:

- EXISTING WALLS TO REMAIN
- NEW WALLS
- NEW CONCRETE WALLS
- NEW PLUMBING FIXTURES, SEE PLUMBING DRAWINGS
- NEW WINDOW

NOTE:
SEE ALSO STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR ADDITIONAL WORK REQUIRED.



SECOND FLOOR PLAN
SCALE: 1/4" = 1'-0"
1 / A05



ROOF PLAN
SCALE: 1/4" = 1'-0"
2 / A05

NORTH

Project Title:
Renovation and Addition to
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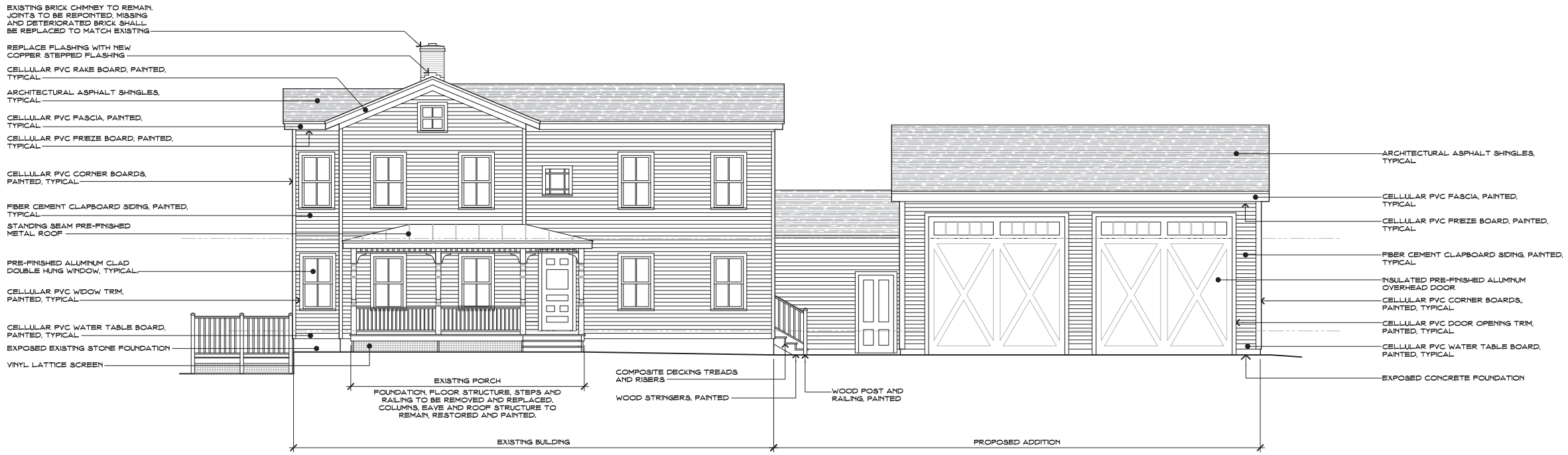
Revisions:	Description:	Date:	Revised By:

Drawing Title:
2nd FLOOR AND ROOF PLANS
37 MAIN STREET

Date: MARCH 23, 2015
Scale: 1/4" = 1'-0"
Drawn By: MJC
SPA Project Number: 14.131

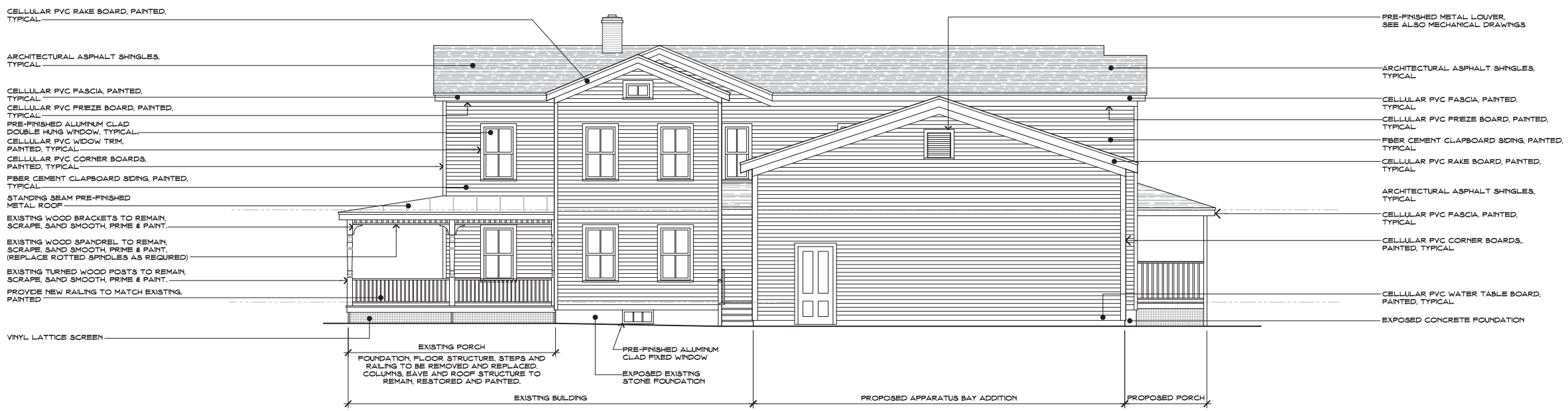
Drawing Number: A05



WEST ELEVATION (FRONT)

SCALE: 1/4" = 1'-0"

1 / A06



SOUTH ELEVATION

SCALE: 1/4" = 1'-0"

2 / A06

Project Title:

Renovation and Addition to

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Revision:	Description:	Date:	Revised By:

Drawing Title:

EXTERIOR ELEVATIONS
37 MAIN STREET

Date: MARCH 23, 2015

Scale: 1/4" = 1'-0"

Drawn By: MJC

SPA Project Number: 14.131

Drawing Number: A06

EAST ELEVATION

SCALE: 1/4" = 1'-0"

1 / A07

NORTH ELEVATION

SCALE: 1/4" = 1'-0"

2 / A07

Project Title:

Renovation and Addition to

37 & 51 Main Street

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Revision:	Description:	Date:	Revised By:

Drawing Title:

EXTERIOR ELEVATIONS

37 MAIN STREET

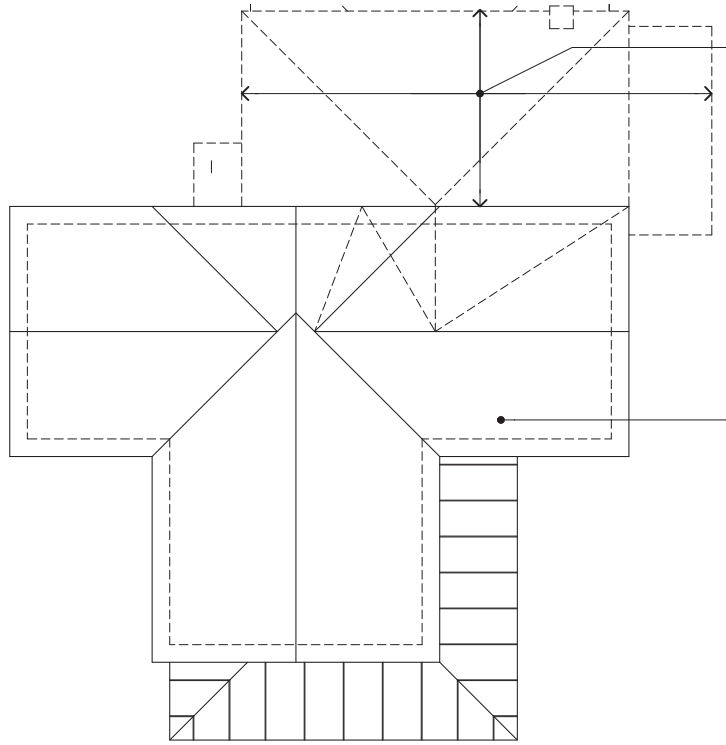
Date: MARCH 23, 2015

Scale: 1/4" = 1'-0"

Drawn By: MJC

SPA Project Number: 14.131

Drawing Number: A07



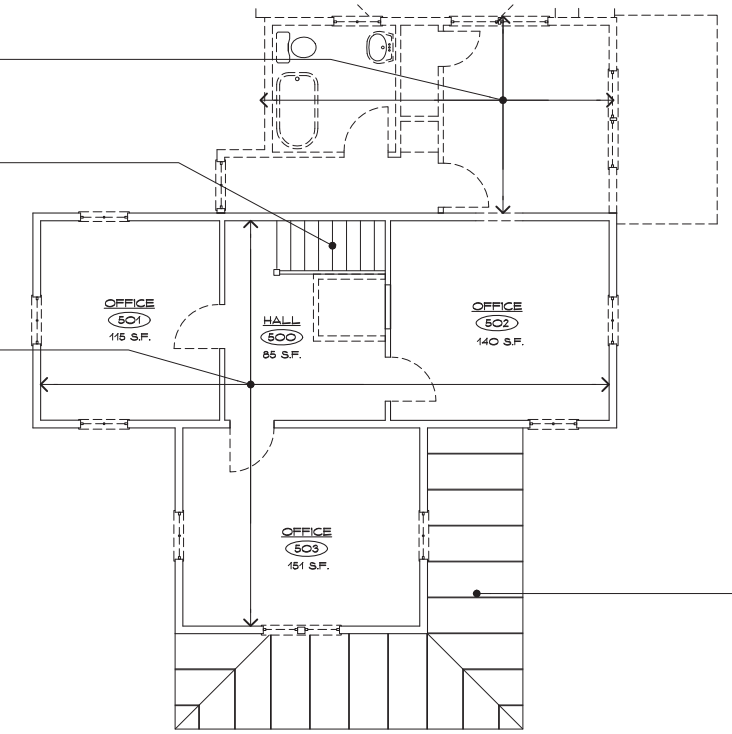
REMOVE THIS PORTION OF WOOD FRAMED BUILDING IN ITS ENTIRITY FROM ROOF TO FOUNDATION & FOOTINGS

REMOVE ROOFING, MEMBRANES AND FLASHING FROM ENTIRE ROOF SURFACE

ROOF PLAN - DEMOLITION

SCALE: 1/4" = 1'-0"

4 / A11



REMOVE CARPETING FROM STAIR TO EXPOSE SURFACES TO BE REFINISHED

REMOVE ALL WALL AND CEILING PANELING, PLASTER & LATH, GYPSUM BOARD AND OTHER FINISHES TO EXPOSE STUDS AND JOISTS. REMOVE ALL FLOOR FINISHES AND SUB-FLOOR TO EXPOSE FLOOR JOISTS. TEMPORARILY BRACE FLOORS AND WALLS WHILE HORIZONTAL AND VERTICAL DIAPHRAGMS ARE REMOVED.

REMOVE ROOFING, MEMBRANES AND FLASHING

SECOND FLOOR PLAN - DEMOLITION

SCALE: 1/4" = 1'-0"

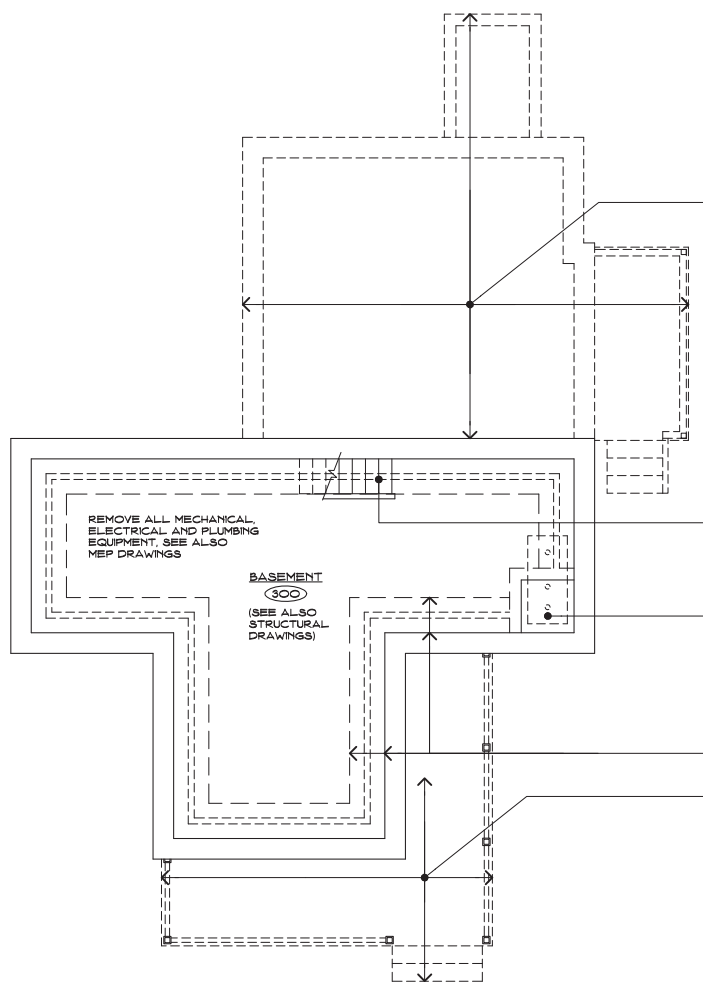
3 / A11

LEGEND:

- EXISTING WALLS TO REMAIN
- EXISTING WALLS TO BE REMOVED
- EXISTING PLUMBING FIXTURES TO BE REMOVED. SEE ALSO PLUMBING DRAWINGS
- DASHED LINES INDICATE REMOVALS. SEE DEMOLITION NOTES ON ARCHITECTURALS AS WELL AS ALL M.E.P. DRAWINGS.
- EXISTING DOOR AND HARDWARE TO BE REMOVED
- EXISTING WINDOW TO BE REMOVED

NOTE:
SEE ALSO MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR ADDITIONAL REMOVALS REQUIRED.

GENERAL NOTE:
REMOVE ALL EXTERIOR SIDING, TRIM, FASCIAS, RAKES, SOFFITS, ETC. TO EXPOSE EXISTING SHEATHING. REPLACE PORTIONS OF DECAYED OR DAMAGED SHEATHING.



REMOVE FOUNDATION AND FOOTINGS

REMOVE WOOD STAIR, STRINGERS, SUPPORT WALLS AND HANDRAILS

SAW CUT EXISTING SLAB TO ACCOMMODATE NEW SUMP PIT

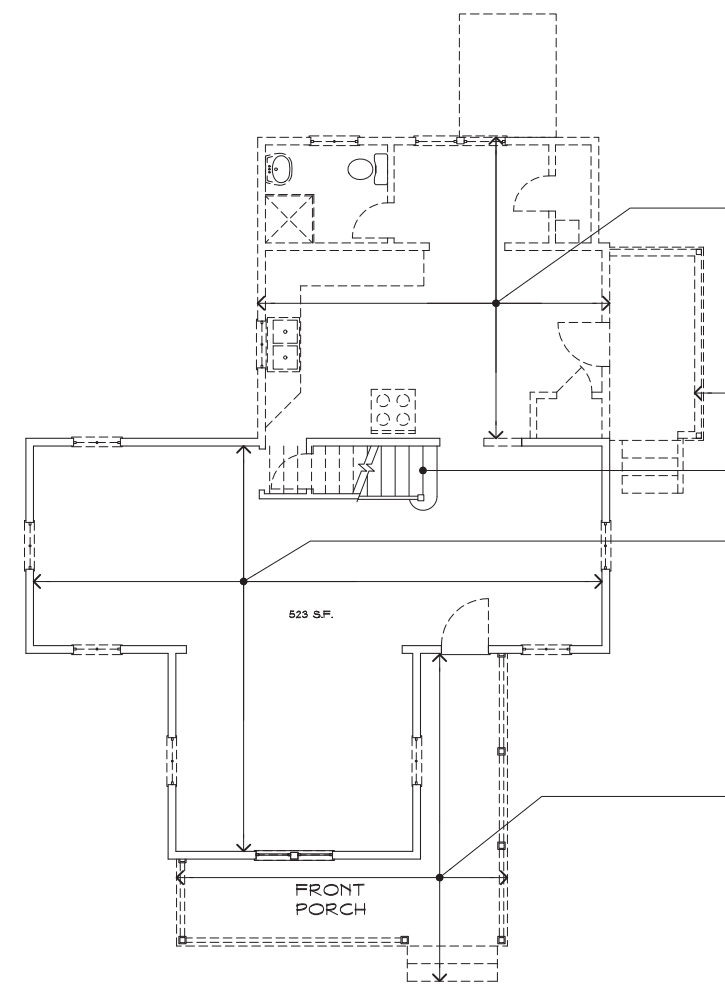
SAW CUT AND REMOVE A PORTION OF EXISTING SLAB (24" WIDTH) AT ENTIRE INTERIOR PERIMETER

REMOVE FLOOR STRUCTURE, DECKING AND GUARDRAILS OF PORCH, COLUMNS, TOP BRACKETS AND ROOF STRUCTURE TO REMAIN. PROVIDE TEMPORARY SHORING TO SUPPORT ROOF, BEAMS AND COLUMNS.

BASEMENT FLOOR PLAN - DEMOLITION

SCALE: 1/4" = 1'-0"

1 / A11



REMOVE THIS PORTION OF WOOD FRAMED BUILDING IN ITS ENTIRITY FROM ROOF TO FOUNDATION & FOOTINGS

REMOVE WOOD FRAMED PORCH, RAILINGS, COLUMNS, ROOF AND ALL ASSOCIATED FOUNDATION

REMOVE CARPETING FROM STAIR TO EXPOSE SURFACES TO BE REFINISHED

REMOVE ALL WALL AND CEILING PANELING, PLASTER & LATH, GYPSUM BOARD AND OTHER FINISHES TO EXPOSE STUDS AND JOISTS. REMOVE ALL FLOOR FINISHES AND SUB-FLOOR TO EXPOSE FLOOR JOISTS. TEMPORARILY BRACE FLOORS AND WALLS WHILE HORIZONTAL AND VERTICAL DIAPHRAGMS ARE REMOVED.

REMOVE FLOOR STRUCTURE, DECKING AND GUARDRAILS OF PORCH, COLUMNS, TOP BRACKETS AND ROOF STRUCTURE TO REMAIN. PROVIDE TEMPORARY SHORING TO SUPPORT ROOF, BEAMS AND COLUMNS.

FIRST FLOOR PLAN - DEMOLITION

SCALE: 1/4" = 1'-0"

2 / A11

NORTH

Project Title:
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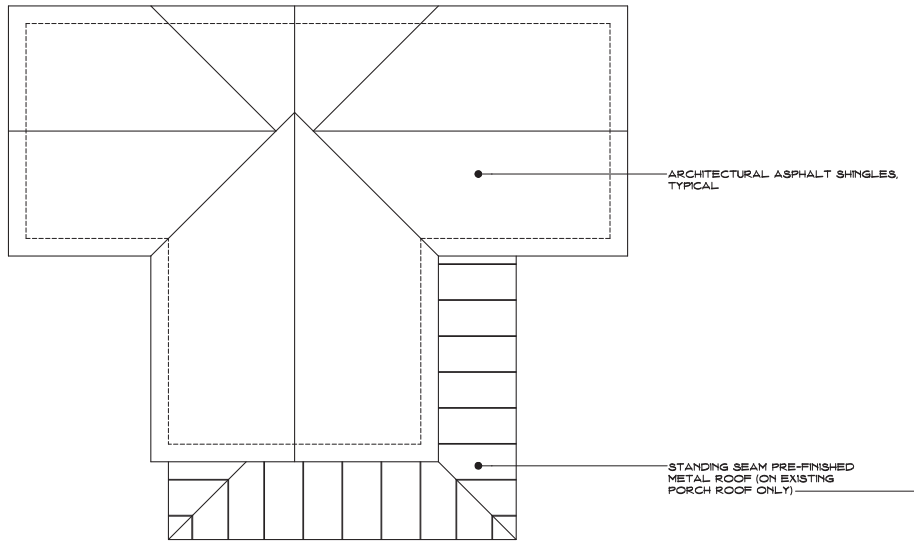
Tel. 203 230 9007 Fax. 203 230 8247
silverpetrucelli.com

Revision	Description	Date	Revised By

Drawing Title:
DEMOLITION PLANS
51 MAIN STREET

Date: MARCH 23, 2015
Scale: 1/4" = 1'-0"
Drawn By: MJC
SPA Project Number: 14.131

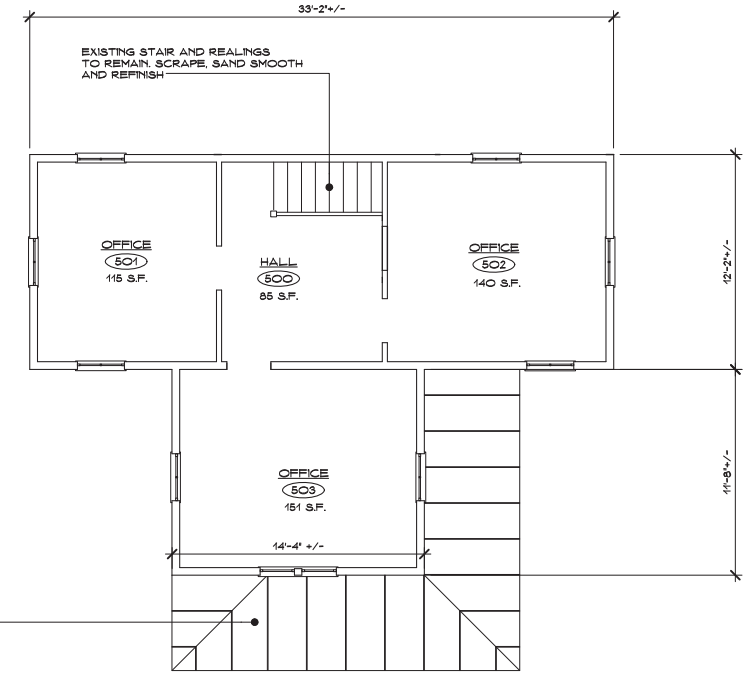
Drawing Number: A11



ROOF PLAN

SCALE: 1/4" = 1'-0"

4 / A12



SECOND FLOOR PLAN

SCALE: 1/4" = 1'-0"

3 / A12

LEGEND:

EXISTING WALLS TO REMAIN

NEW WALLS

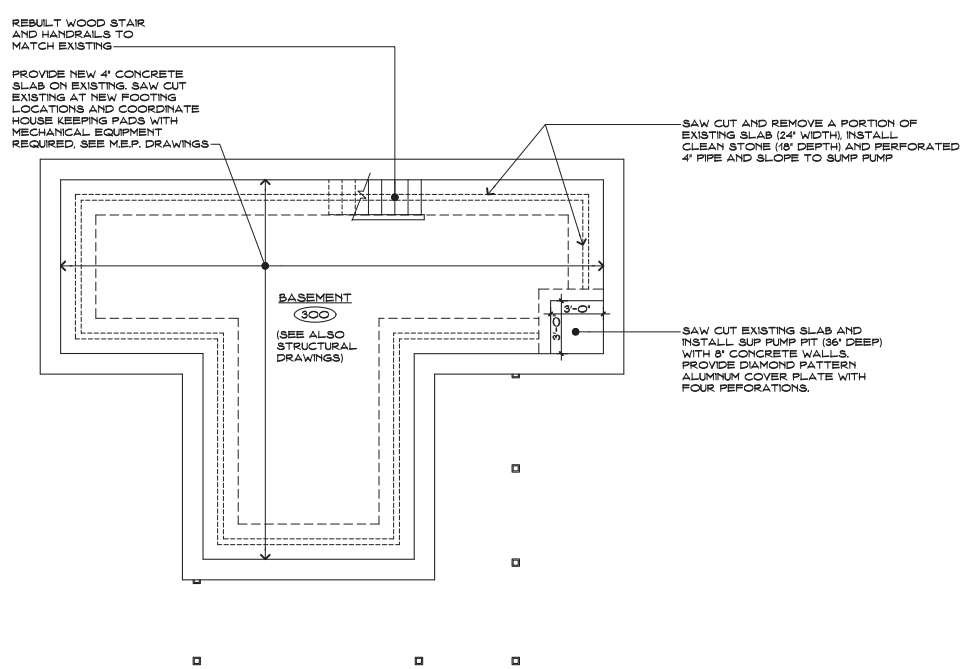
NEW PLUMBING FIXTURES, SEE PLUMBING DRAWINGS

NEW WINDOW

NOTE:
SEE ALSO STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR ADDITIONAL WORK REQUIRED.

GENERAL NOTES:

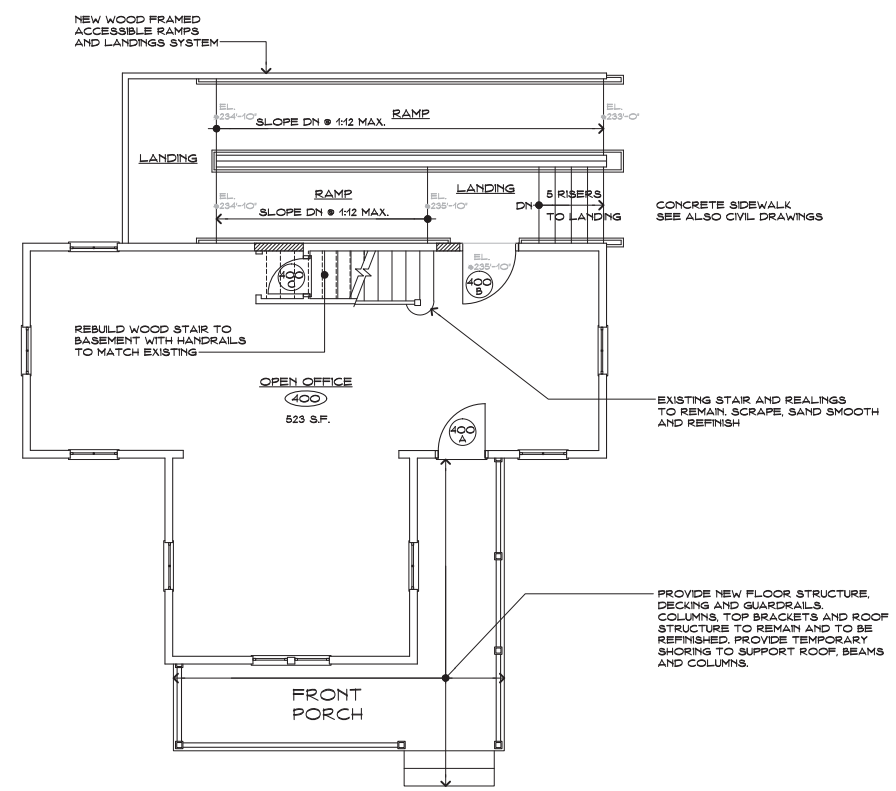
1. ALL NEW AND EXISTING FLOORS SHALL RECEIVE NEW PLYWOOD SUBFLOOR, NO FINISH FLOORS.
2. ALL EXTERIOR WALLS, FIRST FLOOR JOISTS AND ATTIC JOISTS SHALL BE INFILLED WITH BATT INSULATION.
3. ALL EXTERIOR WALLS AND SECOND FLOOR CEILING SHALL RECEIVE GYPSUM WALL BOARD, PRIMED. FIRST FLOOR JOISTS SHALL REMAIN EXPOSED.



BASEMENT FLOOR PLAN

SCALE: 1/4" = 1'-0"

1 / A12



FIRST FLOOR PLAN

SCALE: 1/4" = 1'-0"

2 / A12

NORTH

Project Title:
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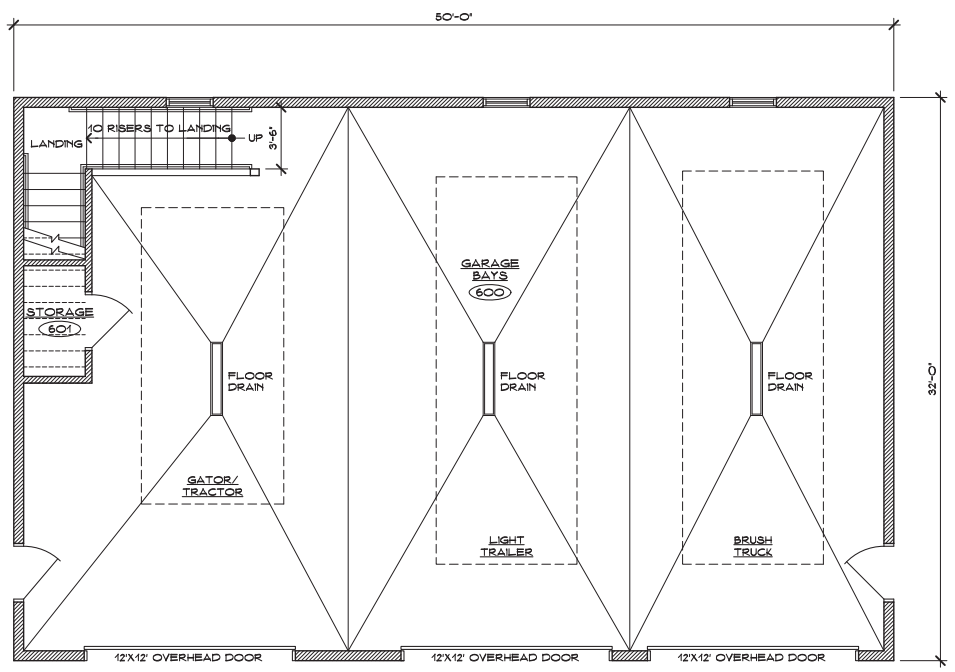
Revision:	Description:	Date:	Revised By:

Drawing Title:
DEMOLITION PLANS
51 MAIN STREET

Date: MARCH 23, 2015
Scale: 1/4" = 1'-0"
Drawn By: MUC
SPA Project Number: 14.131

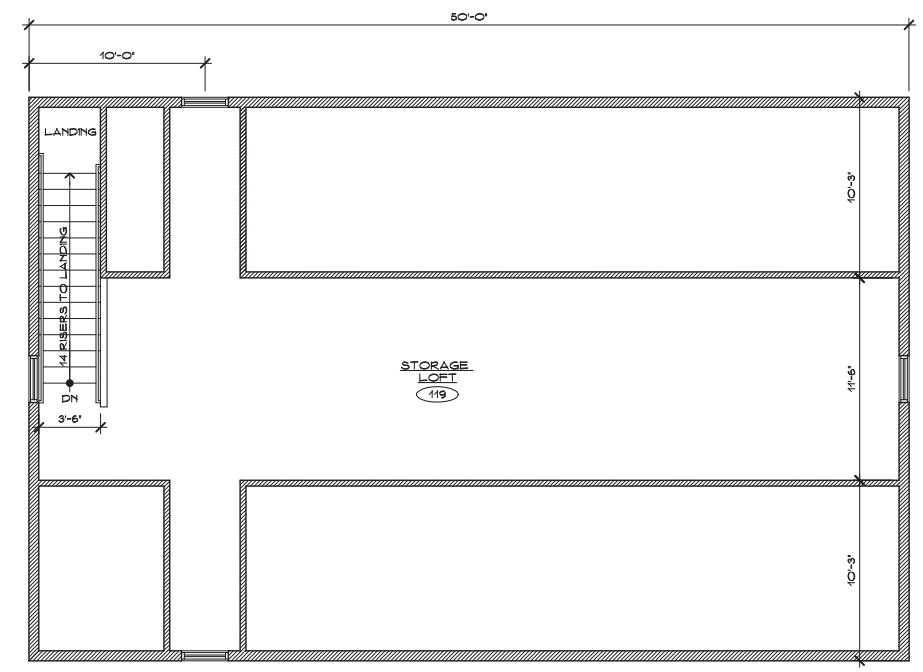
Drawing Number: A12



MAIN FLOOR PLAN

SCALE: 1/4" = 1'-0"

1 / A13



MEZZANINE FLOOR PLAN

SCALE: 1/4" = 1'-0"

2 / A13

NORTH

Project Title:

Renovation and Addition to

37 & 51 Main Street

Durham, Connecticut 06422

SILVER / PETRUCELLI + ASSOCIATES

Architects / Engineers / Interior Designers

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silverpetrucelli.com

Revision:	Description:	Date:	Revised By:

Drawing Title:

CARRIAGE HOUSE PLANS
51 MAIN STREET

Date: MARCH 23, 2015

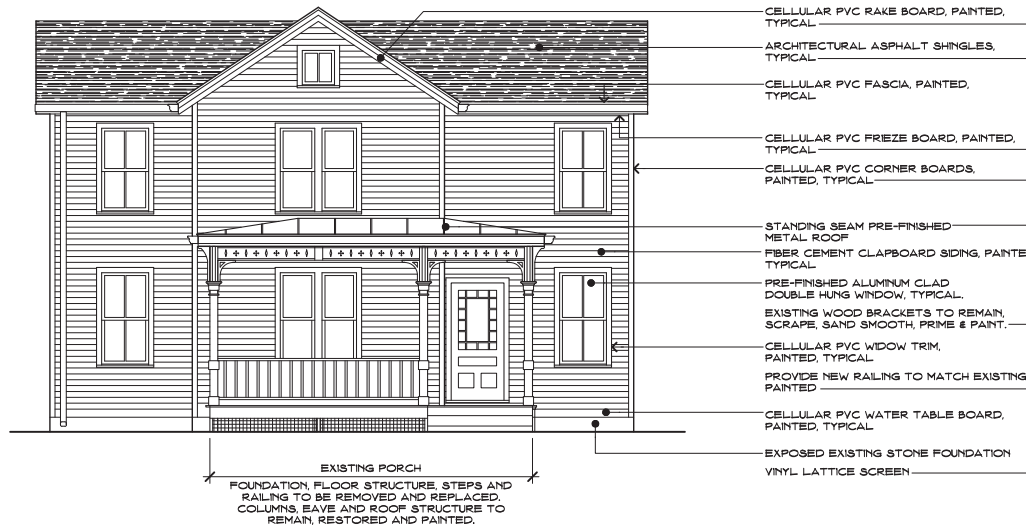
Scale: 1/4" = 1'-0"

Drawn By: MJC

SPA Project Number: 14.131

Drawing Number:

A13



WEST ELEVATION (FRONT) — 1 / A14

SCALE: 1/4" = 1'-0"

SOUTH ELEVATION — 2 / A14

SCALE: 1/4" = 1'-0"

EAST ELEVATION — 3 / A14

SCALE: 1/4" = 1'-0"

NORTH ELEVATION — 4 / A14

SCALE: 1/4" = 1'-0"

Project Title:

Renovation and Addition to

37 & 51 Main Street

Durham, Connecticut 06422

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Revision:	Description:	Date:	Revised By:

Drawing Title:

EXTERIOR ELEVATIONS

51 MAIN STREET

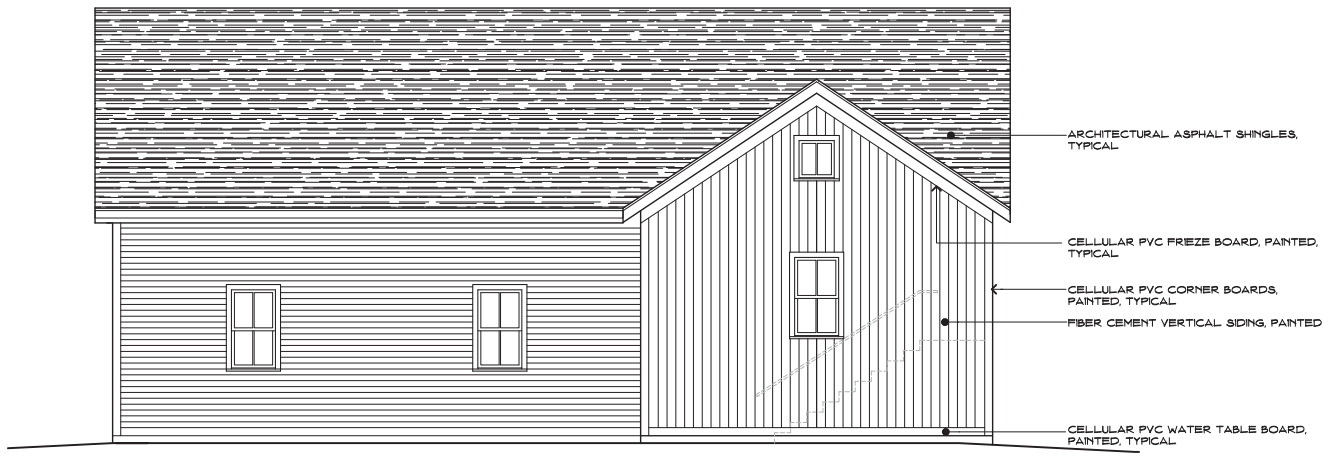
Date: MARCH 23, 2015

Scale: 1/4" = 1'-0"

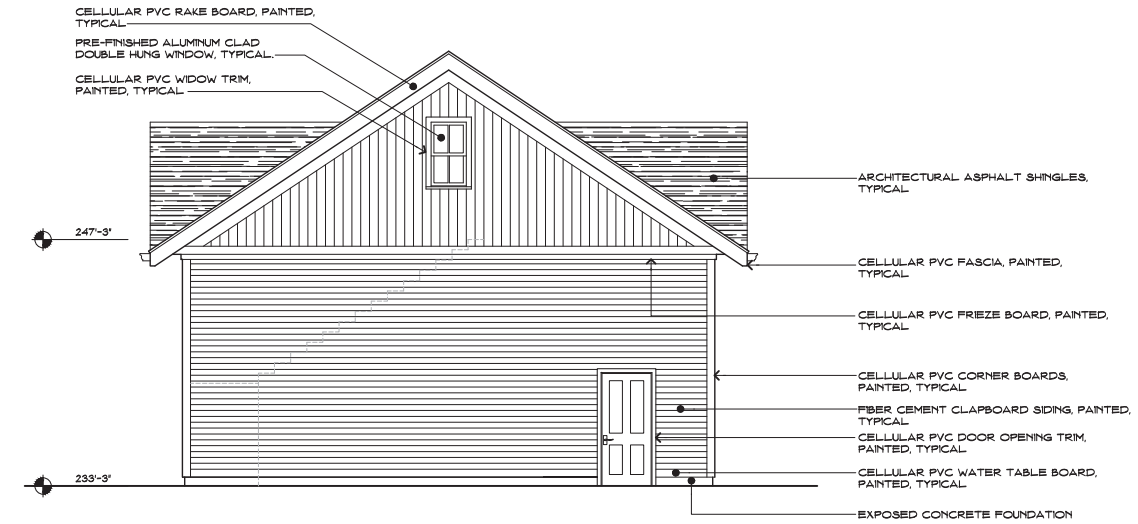
Drawn By: MJC

SPA Project Number: 14.131

Drawing Number: A14

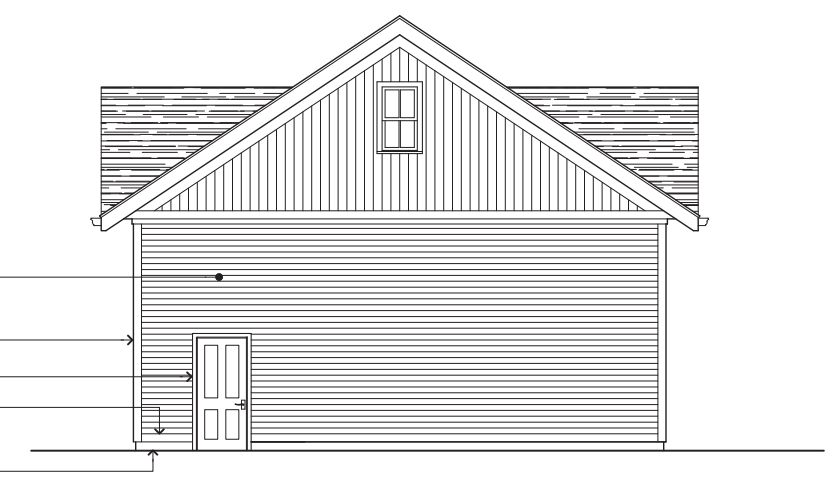


NORTH ELEVATION
SCALE: 1/4" = 1'-0"
3 / A15



WEST ELEVATION
SCALE: 1/4" = 1'-0"
2 / A15

SOUTH ELEVATION
SCALE: 1/4" = 1'-0"
1 / A15



EAST ELEVATION
SCALE: 1/4" = 1'-0"
2 / A15

Project Title:
Renovation and Addition to
37 & 51 Main Street
Durham, Connecticut 06422

SILVER / PETRUCELLI + ASSOCIATES
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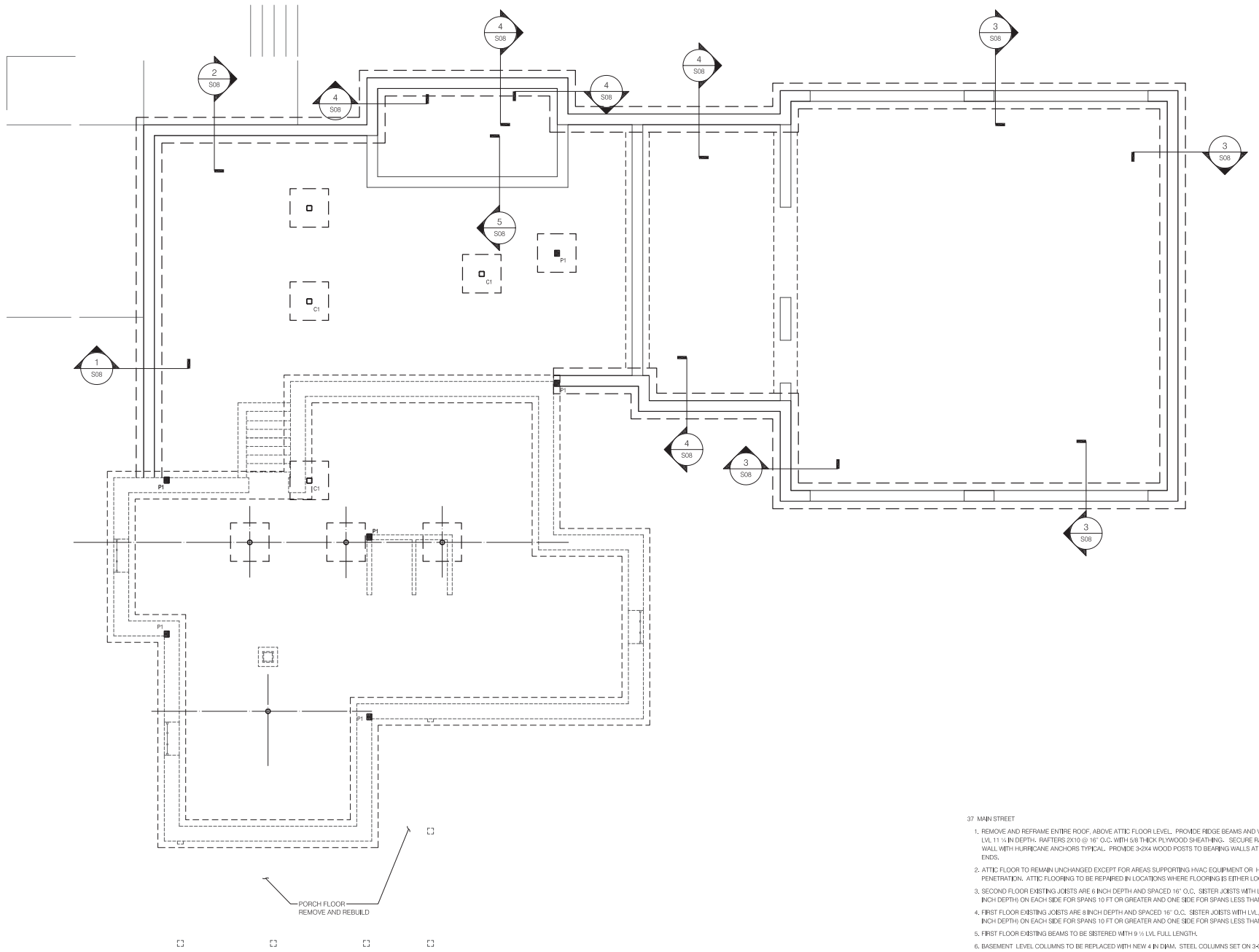
Revision:	Description:	Date:	Revised By:

Drawing Title:
CARRIAGE HOUSE
ELEVATIONS
51 MAIN STREET

Date: MARCH 23, 2015
Scale: 1/4" = 1'-0"
Drawn By: MJC
SPA Project Number: 14.131

Drawing Number: A15



BASEMENT/FOUNDATION FLOOR PLAN

1 S03

SCALE: 1/4" = 1'-0"

1 TOP OF FINISH FLOOR IN THE MAIN BUILDING UNLESS OTHEWISE SHOWN IS 0'-0"

2. TOP OF FINISH FLOOR IN APPARATUS BAY AND STORAGE AREA =-0'-6"

3. FLOOR CONSTRUCTION UNLESS OTHERWISE SHOWN:

S1 — 5" CONCRETE SLAB ON GRADE REINFORCED WITH 6X6-W2.9XW2.9 W.W.F. OVER A 15 MIL VAPOR RETARDER OVER A 4" MIN. 3/4" MINUS PROCESSES AGGREGATE BASE OVER 12" MIN. CONTROLLED COMPACTED GRAVEL FILL.

S2 — 8" NORMAL WEIGHT SLAB ON GRADE (PITCHED AS SHOWN ON PLAN) REINFORCED WITH #4@12"O.C. EACH WAY TOP & BOTTOM OVER A 15 MIL. VAPOR RETARDER. OVER A 4" MIN. 3/4" MINUS PROCESSES AGGREGATE BASE OVER 12" MIN. CONTROLLED COMPACTED GRAVEL FILL.

4. TOP OF FOOTING ELEVATION INDICATED THUS (X'-XX") ON PLAN REFERENCE FROM ELEVATION (0'-0"). FOOTINGS TO BEAR ON A MINIMUM 6" LAYER OF 3/8" CRUSHED STONE FILL ON A GEOTEXILE FABRIC.

5. "F40" INDICATES 4'-0"X4'-0"X1'-3" FOOTING REINFORCED WITH (5)-#5X3'-6"

37 MAIN STREET

1. REMOVE AND REFRAME ENTIRE ROOF, ABOVE ATTIC FLOOR LEVEL. PROVIDE RIDGE BEAMS AND VALLEY BEAMS 2-LVL 11 ¼ IN DEPTH. RAFTERS 2X10 @ 16" O.C. WITH 5/8 THICK PLYWOOD SHEATHING. SECURE RAFTERS TO TOP WALL WITH HURRICANE ANCHORS TYPICAL. PROVIDE 3-2X4 WOOD POSTS TO BEARING WALLS AT RIDGE BEAM ENDS.
2. ATTIC FLOOR TO REMAIN UNCHANGED EXCEPT FOR AREAS SUPPORTING HVAC EQUIPMENT OR HAVING DUCT PENETRATION. ATTIC FLOORING TO BE REPAIRED IN LOCATIONS WHERE FLOORING IS EITHER LOOSE OR MISSING.
3. SECOND FLOOR EXISTING JOISTS ARE 6 INCH DEPTH AND SPACED 16" O.C. SISTER JOISTS WITH LVL (RIPPED TO 6 INCH DEPTH) ON EACH SIDE FOR SPANS 10 FT OR GREATER AND ONE SIDE FOR SPANS LESS THAN 10 FT.
4. FIRST FLOOR EXISTING JOISTS ARE 8 INCH DEPTH AND SPACED 16" O.C. SISTER JOISTS WITH LVL. (RIPPED TO 8 INCH DEPTH) ON EACH SIDE FOR SPANS 10 FT OR GREATER AND ONE SIDE FOR SPANS LESS THAN 10 FT.
5. FIRST FLOOR EXISTING BEAMS TO BE SISTERED WITH 9 ½ LVL FULL LENGTH.
6. BASEMENT LEVEL COLUMNS TO BE REPLACED WITH NEW 4 IN DIAM. STEEL COLUMNS SET ON 3-0 SQ.CONCRETE FOOTINGS AND FITTED TO UNDERSIDE OF FLOOR BEAMS.
7. BASEMENT LEVEL TO BE CLEANED OF ALL DEBRIS. INSTALL 6 INCH THICK CONCRETE SLAB ON 6 INCH POROUS COMPACTED GRAVEL FILL. COORDINATE FINAL ELEVATION WITH THE DRAINAGE AND FLOODPROOFING PROVISIONS ON THE BUILDING EXTERIOR.
8. PORCH ROOF AND FLOOR FRAMING IS UNDERSIZED AND SHALL BE REMOVED AND RECONSTRUCTED USING 2X6 WOOD FRAMING. WOOD COLUMNS SHALL BE REPLACED WITH NEW SAWN WOOD COLUMNS SIZE TO MATCH EXISTING.

north

PROGRESS SET March 16, 2015

Project Title:
Renovation and Addition to
37 & 51 Main Street
Durham, Connecticut 06422

SILVER / PETRUCELLI + ASSOCIATES
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Revision:	Description:	Date:	Revised By:

MHAI
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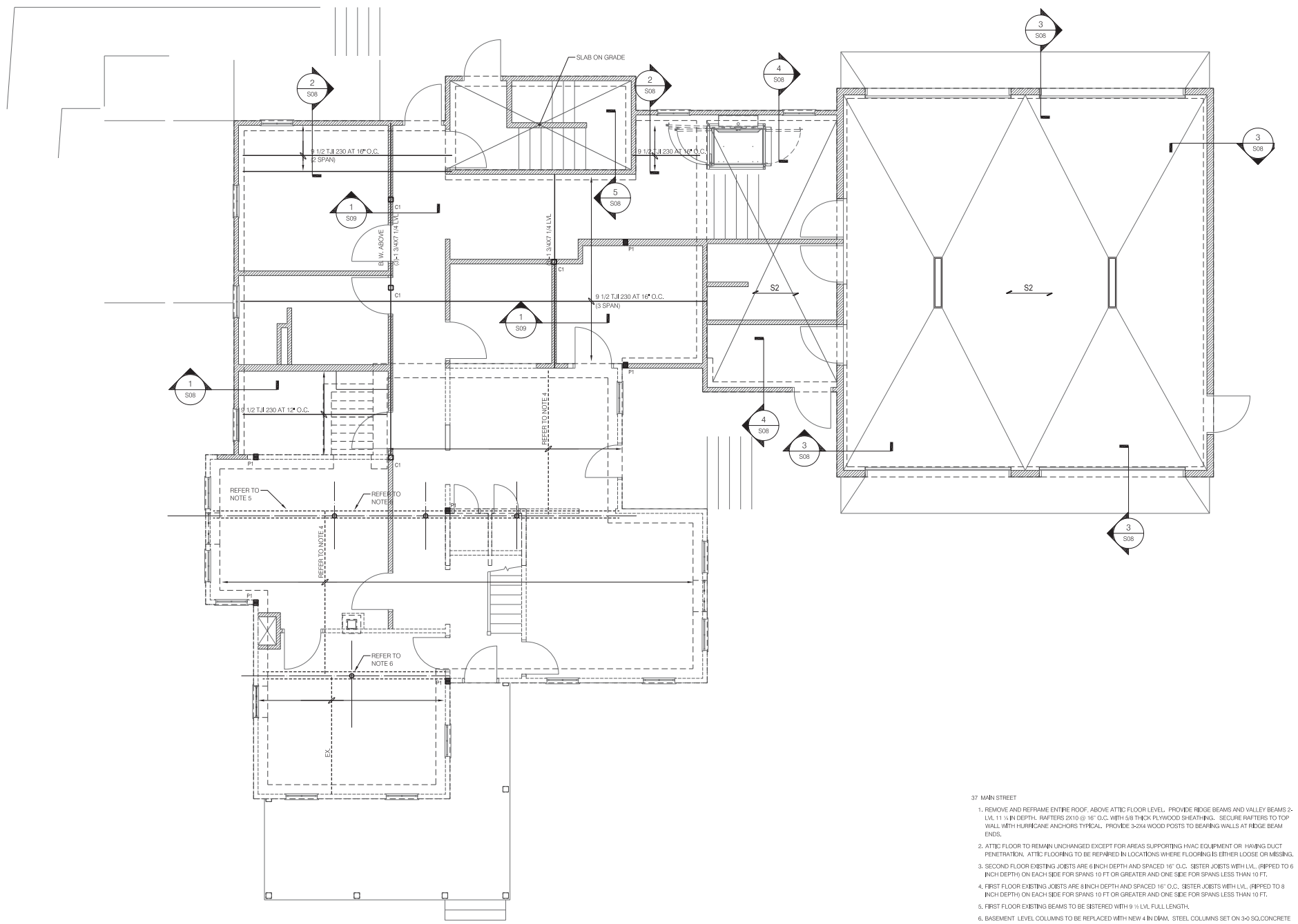
151 Meadow Street
Branford, Connecticut 06405
203-483-8600 mha-eng.com

Drawing Title:
BASEMENT/
FOUNDATION PLAN
37 MAIN STREET

Date: March 6, 2015
Scale: 1/4" = 1'-0"
Drawn By: AC
SPA Project Number: 14.131

Drawing Number:
S03



FIRST FLOOR PLAN

SCALE: 1/4" = 1'-0"

1 / S04

37 MAIN STREET

1. REMOVE AND REFRAME ENTIRE ROOF, ABOVE ATTIC FLOOR LEVEL. PROVIDE RIDGE BEAMS AND VALLEY BEAMS 2-LVL 11 ¼ IN DEPTH. RAFTERS 2X10 @ 16" O.C. WITH 5/8 THICK PLYWOOD SHEATHING. SECURE RAFTERS TO TOP WALL WITH HURRICANE ANCHORS TYPICAL. PROVIDE 3-2X4 WOOD POSTS TO BEARING WALLS AT RIDGE BEAM ENDS.
2. ATTIC FLOOR TO REMAIN UNCHANGED EXCEPT FOR AREAS SUPPORTING HVAC EQUIPMENT OR HAVING DUCT PENETRATION. ATTIC FLOORING TO BE REPAIRED IN LOCATIONS WHERE FLOORING IS EITHER LOOSE OR MISSING.
3. SECOND FLOOR EXISTING JOISTS ARE 6 INCH DEPTH AND SPACED 16" O.C. SISTER JOISTS WITH LVL, (RIPPED TO 6 INCH DEPTH) ON EACH SIDE FOR SPANS 10 FT OR GREATER AND ONE SIDE FOR SPANS LESS THAN 10 FT.
4. FIRST FLOOR EXISTING JOISTS ARE 8 INCH DEPTH AND SPACED 16" O.C. SISTER JOISTS WITH LVL, (RIPPED TO 8 INCH DEPTH) ON EACH SIDE FOR SPANS 10 FT OR GREATER AND ONE SIDE FOR SPANS LESS THAN 10 FT.
5. FIRST FLOOR EXISTING BEAMS TO BE SISTERED WITH 9 ½ LVL FULL LENGTH.
6. BASEMENT LEVEL COLUMNS TO BE REPLACED WITH NEW 4 IN DIAM. STEEL COLUMNS SET ON 3-0 SQ.CONCRETE FOOTINGS AND FITTED TO UNDERSIDE OF FLOOR BEAMS.
7. BASEMENT LEVEL TO BE CLEANED OF ALL DEBRIS. INSTALL 6 INCH THICK CONCRETE SLAB ON 6 INCH POROUS COMPACTED GRAVEL FILL. COORDINATE FINAL ELEVATION WITH THE DRAINAGE AND FLOODPROOFING PROVISIONS ON THE BUILDING EXTERIOR.
8. PORCH ROOF AND FLOOR FRAMING IS UNDERSIZED AND SHALL BE REMOVED AND RECONSTRUCTED USING 2X6 WOOD FRAMING. WOOD COLUMNS SHALL BE REPLACED WITH NEW SAWN WOOD COLUMNS SIZE TO MATCH EXISTING.

north

PROGRESS SET March 16, 2015

Project Title:
Renovation and Addition to
37 & 51 Main Street
Durham, Connecticut 06422

SILVER / PETRUCELLI + ASSOCIATES
Architects / Engineers / Interior Designers
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Revision:	Description:	Date:	Revised By:

MHAI
Michael Horton Associates Inc.
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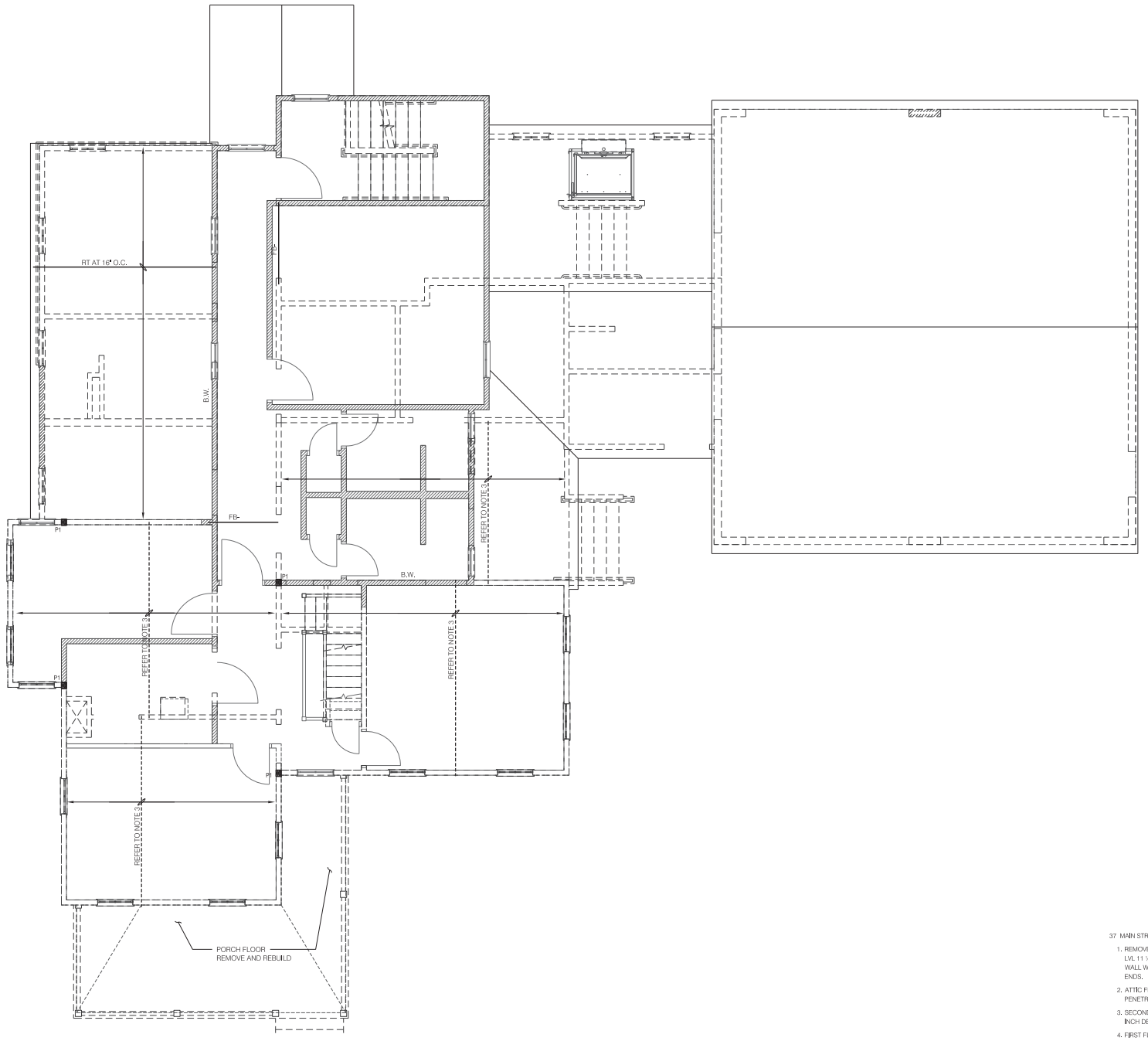
103 Meadow Street
Branford, Connecticut 06405
203-481-4800 mha-eng.com

Drawing Title:
1st FLOOR FRAMING PLAN
37 MAIN STREET

Date: March 6, 2015
1/4" = 1'-0"
Drawn By: AC
SPA Project Number: 14.131

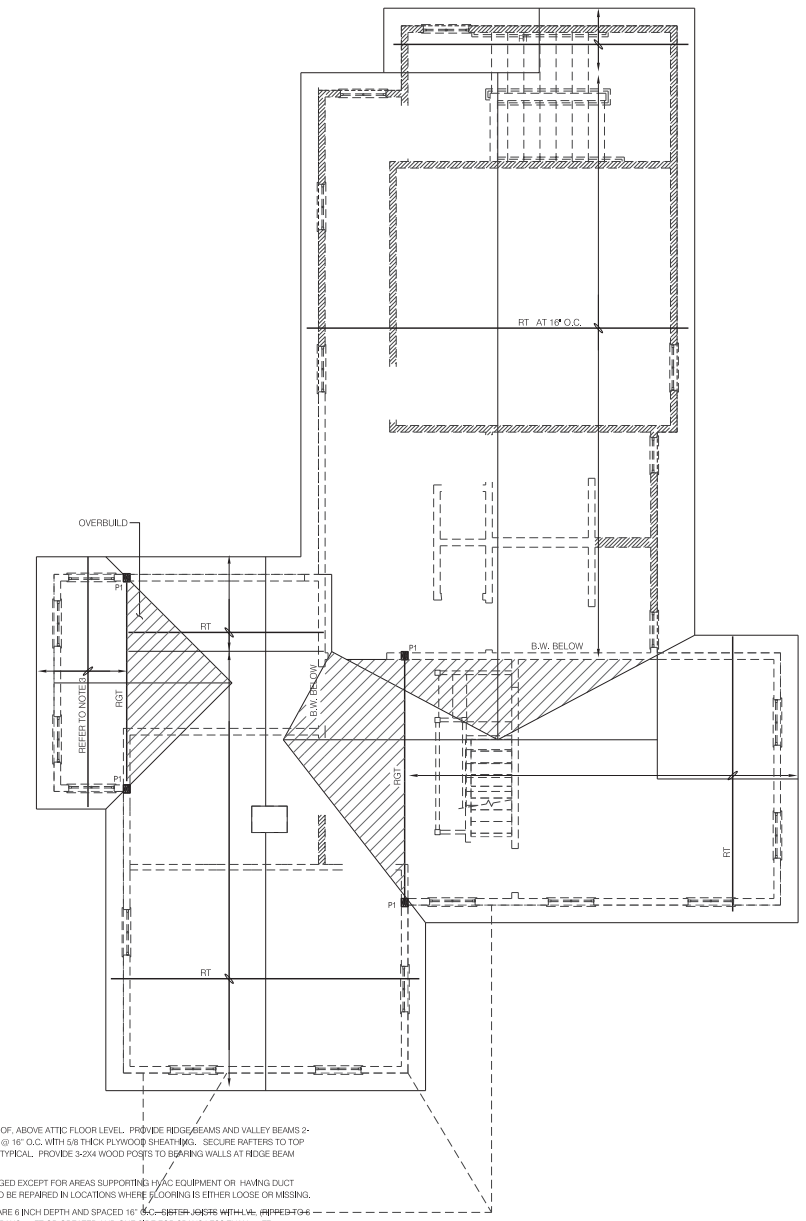
Drawing Number: S04



SECOND FLOOR FRAMING PLAN

SCALE: 1/4" = 1'-0"

1
S05



37 MAIN STREET

1. REMOVE AND REFRAME ENTIRE ROOF, ABOVE ATTIC FLOOR LEVEL. PROVIDE RIDGE BEAMS AND VALLEY BEAMS 2-LVL 11 ¼ IN DEPTH. RAFTERS 2X10 @ 16" O.C. WITH 5/8 THICK PLYWOOD SHEATHING. SECURE RAFTERS TO TOP WALL WITH HURRICANE ANCHORS TYPICAL. PROVIDE 3-2X4 WOOD POSTS TO BEARING WALLS AT RIDGE BEAM ENDS.
2. ATTIC FLOOR TO REMAIN UNCHANGED EXCEPT FOR AREAS SUPPORTING HVAC EQUIPMENT OR HAVING DUCT PENETRATION. ATTIC FLOORING TO BE REPAIRED IN LOCATIONS WHERE FLOORING IS EITHER LOOSE OR MISSING.
3. SECOND FLOOR EXISTING JOISTS ARE 6 INCH DEPTH AND SPACED 16" O.C. SISTER JOISTS WITH LVL (RIPPED TO 4 INCH DEPTH) ON EACH SIDE FOR SPANS 10 FT OR GREATER AND ONE SIDE FOR SPANS LESS THAN 10 FT.
4. FIRST FLOOR EXISTING JOISTS ARE 6 INCH DEPTH AND SPACED 16" O.C. SISTER JOISTS WITH LVL. (RIPPED TO 8 INCH DEPTH) ON EACH SIDE FOR SPANS 10 FT OR GREATER AND ONE SIDE FOR SPANS LESS THAN 10 FT.
5. FIRST FLOOR EXISTING BEAMS TO BE SISTERED WITH 9 ½ LVL FULL LENGTH.
6. BASEMENT LEVEL COLUMNS TO BE REPLACED WITH NEW 4 IN DIAM. STEEL COLUMNS SET ON 3-0 SQ.CONCRETE FOOTINGS AND FITTED TO UNDERSIDE OF FLOOR BEAMS.
7. BASEMENT LEVEL TO BE CLEANED OF ALL DEBRIS. INSTALL 6 INCH THICK CONCRETE SLAB ON 6 INCH THICK COMPACTED GRAVEL FILL. COORDINATE FINAL ELEVATION WITH FOOTINGS AND FOUNDATION PROTRUSIONS ON THE BUILDING EXTERIOR.
8. PORCH ROOF AND FLOOR FRAMING IS UNDERSIZED AND SHALL BE REMOVED AND RECONSTRUCTED USING 2X6 WOOD FRAMING. WOOD COLUMNS SHALL BE REPLACED WITH NEW SAWN WOOD COLUMNS SIZE TO MATCH EXISTING.

ROOF FRAMING PLAN

SCALE: 1/4" = 1'-0"

2
S05

north

PROGRESS SET March 16, 2015

Project Title:

Renovation and Addition to

37 & 51 Main Street

Durham, Connecticut 06422

SILVER / PETRUCELLI + ASSOCIATES

Architects / Engineers / Interior Designers

3190 Whitney Avenue, Hamden, CT 06518

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Revision:	*Description:*	*Date:*	*Revised By:*

MHAI

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101 Meadow Street

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Drawing Title:

2nd FLOOR AND ROOF PLANS 37 MAIN STREET

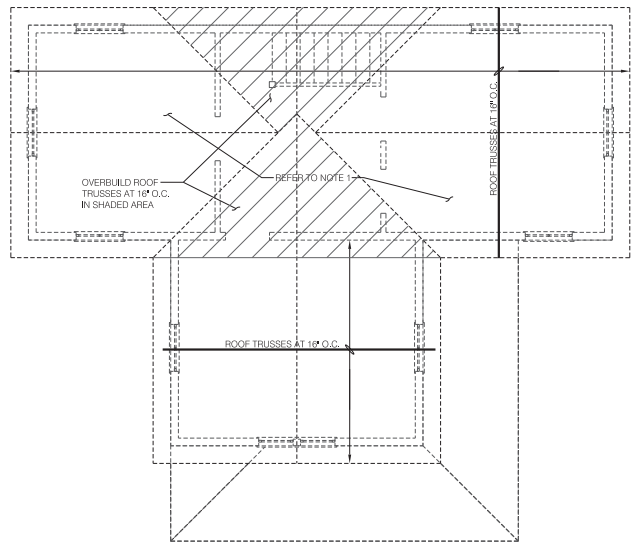
Date: March 6, 2015

Scale: 1/4" = 1'-0"

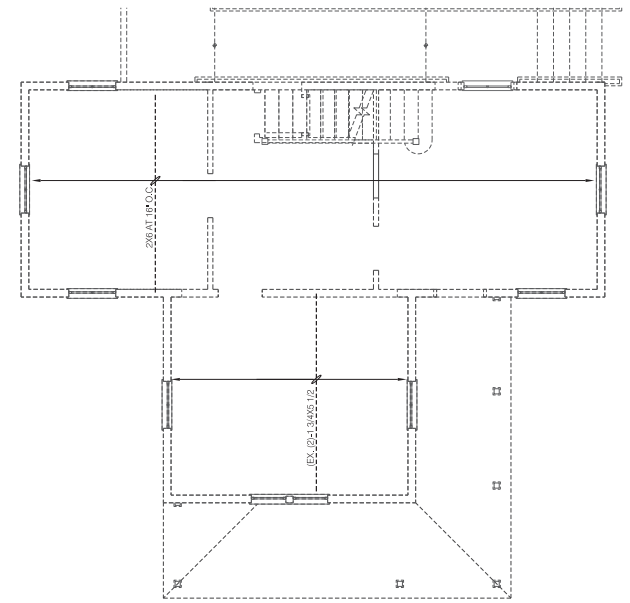
Drawn By: AC

SPA Project Number: 14.131

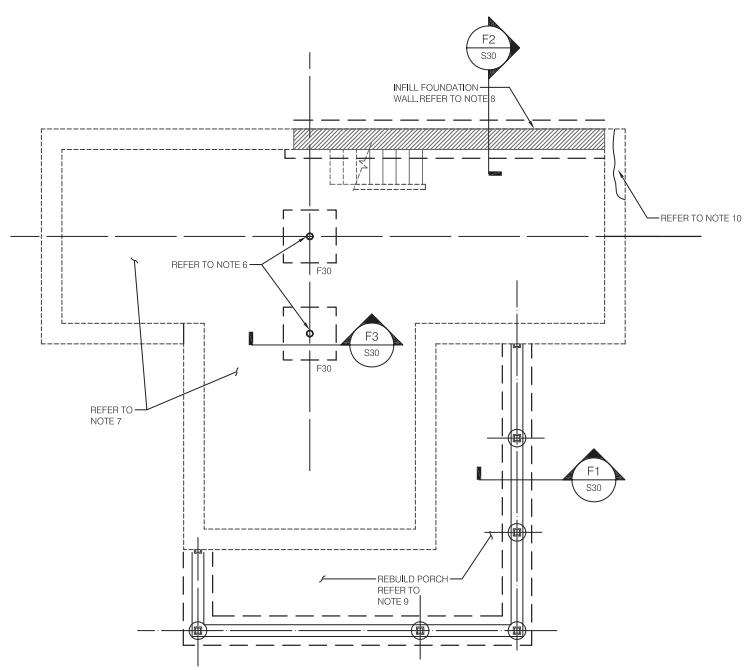
Drawing Number: S05



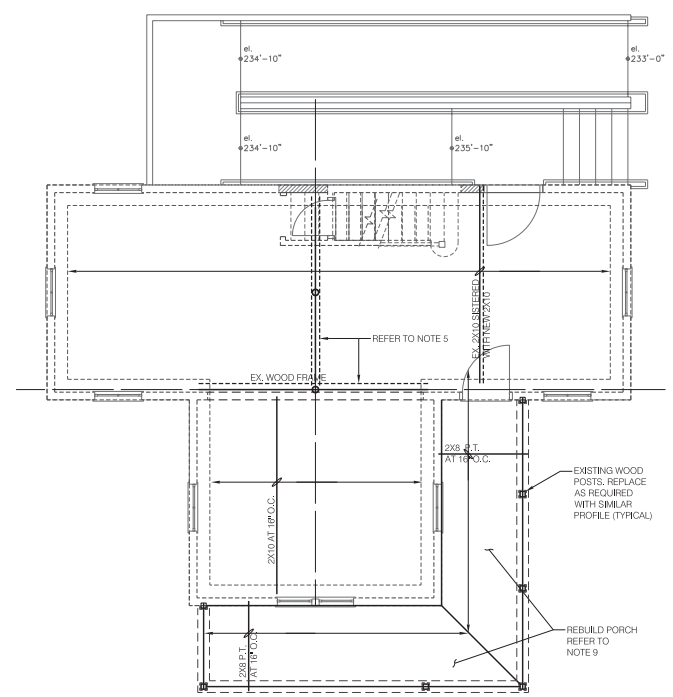
ROOF PLAN
SCALE: 1/4" = 1'-0"
4 / S12



SECOND FLOOR PLAN
SCALE: 1/4" = 1'-0"
3 / S12



BASEMENT FLOOR PLAN
SCALE: 1/4" = 1'-0"
1 / S12



FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"
2 / S12

51 Main Street

1. Remove and reframe entire roof, above attic floor level. Provide ridge beams 2-LVL 11 ¼ in depth. Rafters 2x10 @ 16" o.c. with 5/8 thick plywood sheathing. Secure Rafters to top wall with hurricane anchors typical. Provide 3-2x4 wood posts to bearing walls at ridge beam ends.
2. Attic floor to remain unchanged except for areas supporting HVAC equipment or having duct penetration. Attic flooring to be repaired in locations where flooring is either loose or missing.
3. Second Floor existing joists are 5 inch depth and spaced 16" o.c. Sister joists with LVL, (ripped to 6 inch depth) on each side for spans 9 ft or greater and one side for spans less than 9 ft.
4. First Floor existing joists are 8 inch depth and spaced 16" o.c. Sister joists with LVL, (ripped to 8 inch depth) on each side for spans 9 ft or greater and one side for spans less than 9 ft.
5. First Floor existing Beams to be sistered with 9 ¾ LVL full length.
6. Basement Level columns to be replaced with new 4 in diam. Steel columns set on 3-0 sq.concrete footings and fitted to underside of floor beams.
7. Basement level to be cleaned of all debris. Install 6 inch thick concrete slab on 6 inch porous compacted gravel fill. Coordinate final elevation with the drainage and floodproofing provisions on the building exterior.
8. Demolished portion of building will result in open section of exterior wall at basement level.

north

PROGRESS SET March 16, 2015

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Architects / Engineers / Interior Designers
3190 Whitney Avenue, Hamden, CT 06518
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Revision:	*Description:*	*Date:*	*Revised By:*

MHAI
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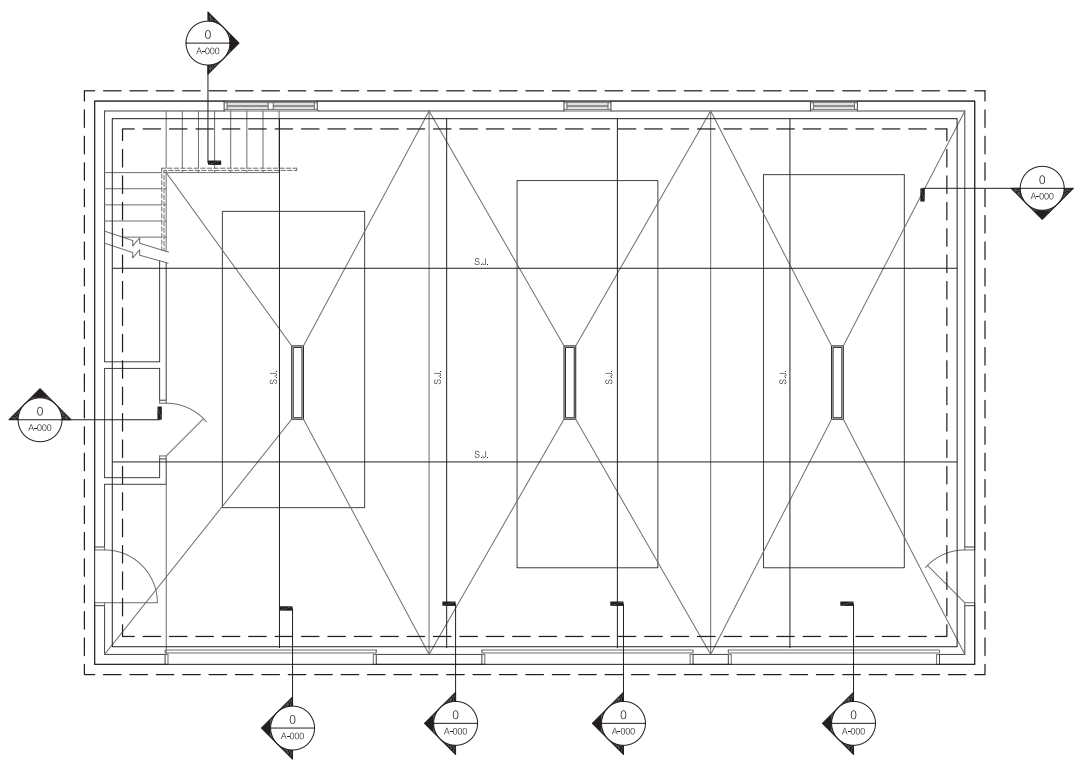
151 Meadow Street
Branford, Connecticut 06405
203-481-6600 mha-eng.com

Drawing Title:
FOUNDATION AND FRAMING PLANS
51 MAIN STREET

Date: March 6, 2015
Scale: 1/4" = 1'-0"
Drawn By: AC
SPA Project Number: 14.131

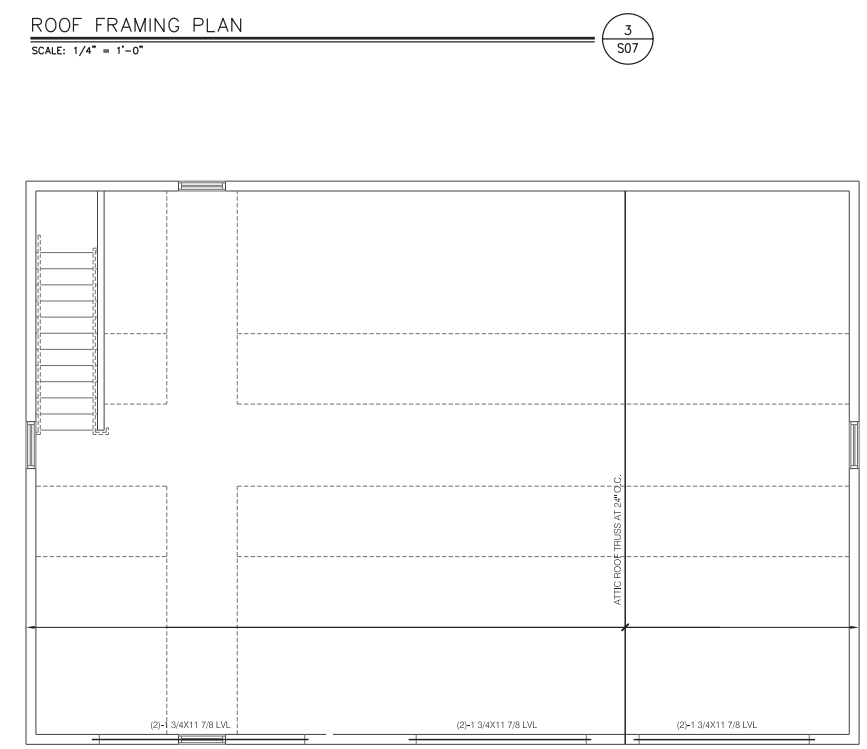
Drawing Number:
S06



MAIN FLOOR PLAN

SCALE: 1/4" = 1'-0"

1
S07



MEZZANINE FLOOR PLAN

SCALE: 1/4" = 1'-0"

2
S07

ROOF FRAMING PLAN

SCALE: 1/4" = 1'-0"

3
S07

1. TOP CONCRETE SLAB ELEVATION=
2. FLOOR CONSTRUCTION: 5" CONCRETE SLAB REINFORCED WITH 6X6-W2.9XW2.9 W.W.F. (CHAIRED), OVER A 15 MIL. VAPOR RETARDER REFER TO GEOTECHNICAL REPORT FOR SUBGRADE PREPARATION.
3. "S.J." INDICATES SLAB SAWCUT JOINT. REFER TO TYPICAL DETAILS

north

PROGRESS SET March 16, 2015

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Revision:	*Description:*	*Date:*	*Revised By:*

MHAI
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Branford, Connecticut 06405
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Drawing Title:

CARRIAGE HOUSE PLANS
51 MAIN STREET

Date: March 6, 2015

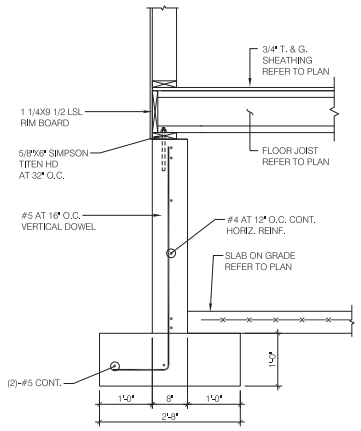
Scale: 1/4" = 1'-0"

Drawn By: MUC

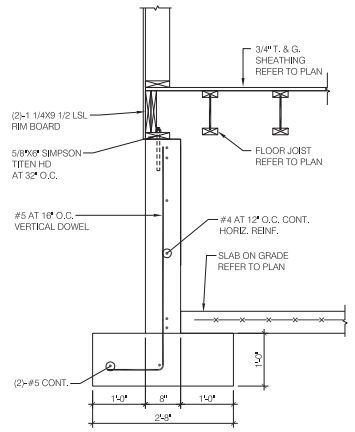
SPA Project Number: 14.131

Drawing Number:

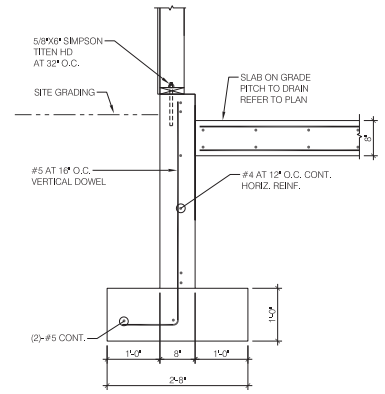
S07



SECTION 1
Scale: 3/4"=1'-0"



SECTION 2
Scale: 3/4"=1'-0"



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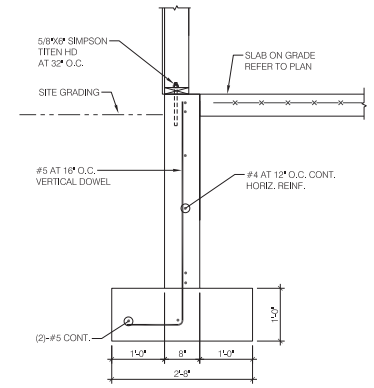
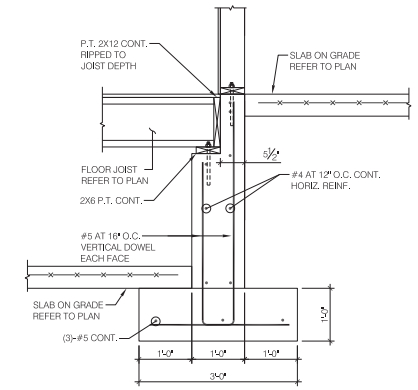


SECTION 4
Scale: 3/4"=1'-0"



SECTION 5
Scale: 3/4"=1'-0"

PROGRESS SET March 16, 2015

Project Title:
Renovation and Addition to
37 & 51 Main Street
Durham, Connecticut 06422

SILVER / PETRUCELLI + ASSOCIATES
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Revision:	*Description:*	*Date:*	*Revised By:*

MHAI
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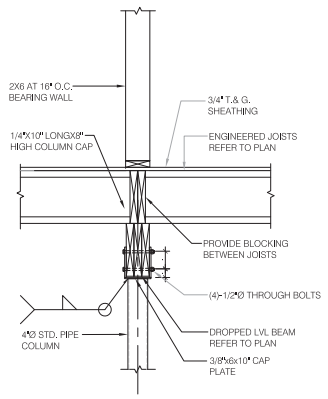
Drawing Title:
SECTIONS

Date: March 6, 2015
Scale: AS NOTED
Drawn By: AC
SPA Project Number: 14.131

Drawing Number:
S08



SECTION 1

Scale: 3/4"=1'-0"

PROGRESS SET March 16, 2015

Project Title:

Renovation and Addition to

37 & 51 Main Street

Durham, Connecticut 06422

SILVER / PETRUCELLI + ASSOCIATES

Architects / Engineers / Interior Designers

3190 Whitney Avenue, Hamden, CT 06518

Tel. 203 230 9007 Fax. 203 230 8247

silverpetrucelli.com

Revision:	*Description:*	*Date:*	*Revised By:*

MHAI

Michael Horton Associates Inc.

Consulting Structural Engineers

151 Meadow Street

Branford, Connecticut 06405

203-481-6600 mha-eng.com

Drawing Title:

SECTIONS

Date: March 6, 2015

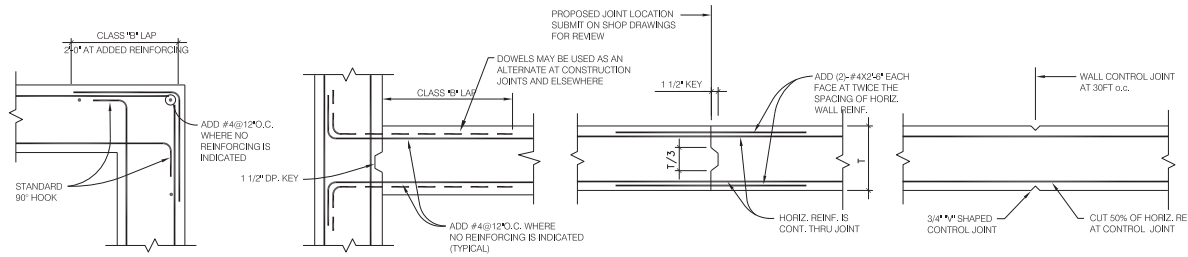
Scale: AS NOTED

Drawn By: AC

SPA Project Number: 14.131

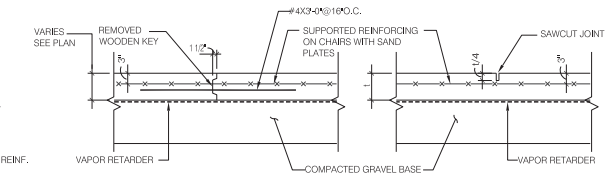
Drawing Number:

S09



CORNER INTERSECTION CONSTRUCTION JOINT CONTROL JOINT

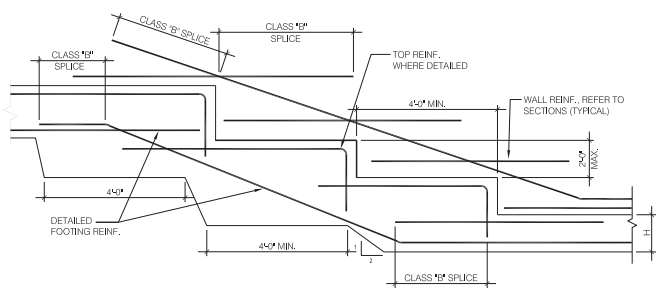
TYPICAL WALL REINFORCING DETAILS



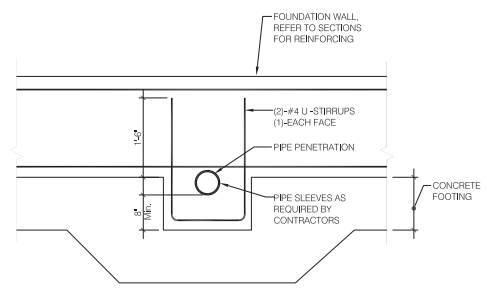
CONSTRUCTION JOINT SAWCUT SLAB JOINT

TYPICAL SLAB ON GRADE DETAILS

NOTE:
1. CONTRACTOR SHALL SUBMIT A PLAN INDICATING THE PROPOSED LOCATION OF CONTROL AND CONSTRUCTION JOINTS PRIOR TO PLACING CONCRETE FOR SLAB.
2. COMPACT EXISTING SUBGRADE PRIOR TO PLACING NEW FILL MATERIAL WITH A MINIMUM OF FOUR PASSES.

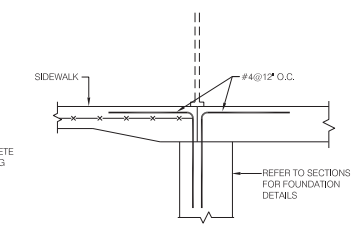


TYPICAL STEPPED FOOTING DETAIL

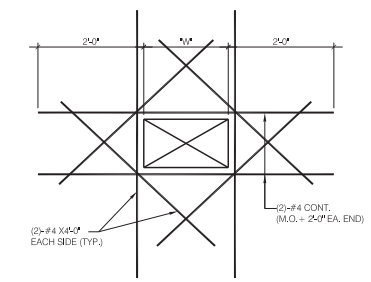


TYPICAL DETAIL OF PIPE PENETRATIONS THRU FOUNDATIONS WALLS

NOTE: DO NOT PLACE PENETRATIONS THROUGH COLUMNS PIERS OR FOOTINGS, REFER TO PLAN FOR LOCATIONS AND COORDINATE WITH SITE, MECHANICAL, PLUMBING, ELECTRICAL, AND FIRE PROTECTION DRAWINGS



TYPICAL FOUNDATION AT DOORS



NOTE:
COORDINATE QUANTITY AND LOCATIONS WITH MECHANICAL, ELECTRICAL AND PLUMBING TRADES.

TYPICAL WALL OPENING

PROGRESS SET March 16, 2015

Project Title:
Renovation and Addition to
37 & 51 Main Street
Durham, Connecticut 06422

SILVER / PETRUCELLI + ASSOCIATES
Architects / Engineers / Interior Designers
3190 Whitney Avenue, Hamden, CT 06518
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Revision:	Description:	Date:	Revised By:

MHAI
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Drawing Title:
TYPICAL DETAILS

Date: March 6, 2015
Scale: AS NOTED
Drawn By: AC
SPA Project Number: 14.131

Drawing Number:
S11

GENERAL NOTES

GENERAL

GOVERNING CODE: STATE BUILDING CODE, 2005 CONNECTICUT SUPPLEMENT WITH THE 2013 AMENDMENT (2003 INTERNATIONAL BUILDING CODE).

DESIGN LOADS: TOWN OF DURHAM

MINIMUM LIVE LOADS:

OFFICES:	50 PSF
CORRIDORS:	80 PSF
STAIRS:	100 PSF
PARTITIONS:	20 PSF

ROOF LOAD:

ROOF SNOW LOAD CRITERIA: PG = 30 PSF, CE = 0.9 AND IS = 1.0, CT= 1.0 WITH INCREASES FOR SNOW DRIFTING, UNBALANCES AND SLIDING PER SECTION 1608 (2003 IBC).

MINIMUM ROOF LIVE LOAD = 30 PSF

ROOF DEAD LOAD = 20 PSF

WIND LOAD CRITERIA: SECTION 1609 (2003 IBC) WITH BASIC WIND SPEED = 105 MPH, BUILDING CATEGORY II, IW = 1.0, EXPOSURE CLASSIFICATION "B".

MINIMUM WIND LOAD ON PRIMARY STRUCTURE = 15 PSF

WIND LOADS ON SECONDARY ELEMENTS SHALL CONFORM WITH ASCE 7-02.

TYPICAL WIND LOAD ON EXTERIOR WALLS	= PER ASCE 7-02
MAXIMUM WIND LOAD AT CORNERS	= PER ASCE 7-02
NET WIND UPLIFT ON STEEL JOIST ROOFS	= PER ASCE 7-02
NET WIND UPLIFT AT OVERHANGS	= PER ASCE 7-02

SEISMIC LOAD CRITERIA: AS PER SECTION 1616 (2003 IBC) WITH:
SEISMIC IMPORTANCE FACTOR, IE = 1.0
SEISMIC USE GROUP = I
SS = 0.235G, S1 = 0.062G
SOIL SITE CLASS = D
SPECTRAL RESPONSE COEFFICIENTS, SDS = 0.293G, SD1 = 0.136G
SEISMIC DESIGN CATEGORY, B
BASIC SEISMIC-FORCE-RESISTING SYSTEM: BEARING WALL, LIGHT FRAME WALLS WITH SHEAR PANELS
DESIGN BASE SHEAR, V = 0.054W
RESPONSE MODIFICATION FACTOR, R = 6.5
ANALYSIS PROCEDURE USED: SIMPLIFIED ANALYSIS

ASSUMED BEARING PRESSURE ON UNDISTURBED SOIL: 3000 PSF
ASSUMED BEARING PRESSURE ON COMPACTED FILL: 3000 PSF

1. SHOULD ANY OF THE DETAILED INSTRUCTIONS SHOWN ON THE PLANS CONFLICT WITH THE GENERAL STRUCTURAL NOTES, THE SPECIFICATIONS, OR WITH EACH OTHER, THE STRICTEST PROVISION SHALL GOVERN.

2. THE STRUCTURE IS DESIGNED TO BE SELF_SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND TO INSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, SHEETING, TEMPORARY BRACING, GUYS OR TIEDOWNS WHICH MIGHT BE NECESSARY. SUCH MATERIAL SHALL REMAIN THE CONTRACTOR'S PROPERTY AFTER COMPLETION OF THE PROJECT.

3. THE STRUCTURE UTILIZES SHEAR WALLS TO PROVIDE LATERAL STABILITY. THEREFORE, TEMPORARY BRACING, GUYS, ETC. MUST BE MAINTAINED UNTIL ALL MASONRY SHEAR WALLS HAVE BEEN ERECTED AND ATTACHED TO STEEL FRAMING.

4. LOADS, OPENINGS AND STRUCTURE IN ANY WAY RELATED TO REQUIREMENTS OF OTHER (NON-STRUCTURAL) DISCIPLINES ARE SHOWN FOR BIDDING PURPOSES ONLY. THE CONTRACTOR SHALL OBTAIN FROM THE HEATING AND VENTILATING, ELECTRICAL, PLUMBING AND OTHER SUBCONTRACTORS THE FINAL APPROVED SIZE AND LOCATION OF ALL OPENINGS AND WORK TO BE PROVIDED FOR THEIR TRADE IN ROOFS, FLOORS AND WALLS, WHETHER SHOWN OR NOT SHOWN ON STRUCTURAL DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR TRANSMISSION OF REQUIREMENTS, LOCATIONS AND DETAILS TO STRUCTURAL SUBCONTRACTORS. EXCESS COST RELATED TO VARIATION IN MECHANICAL REQUIREMENTS ARE NOT TO BE BORNE BY THE OWNER.

5. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.

6. SHOP DRAWINGS ARE TO BE CHECKED BY THE CONTRACTOR AND SUBCONTRACTOR AND BEAR CHECKER'S INITIALS BEFORE BEING SUBMITTED TO THE ARCHITECT FOR APPROVAL.

7. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES AND EXISTING CONDITIONS BEFORE PROCEEDING WITH ANY WORK.

8. ALL SECTIONS AND DETAILS SHALL BE CONSIDERED TYPICAL AND APPLY FOR THE SAME AND SIMILAR SITUATIONS THROUGHOUT THE BUILDING, UNLESS OTHERWISE SPECIFICALLY NOTED.

9. CONTRACTOR SHALL REVIEW ALL ARCHITECTURAL AND STRUCTURAL DRAWINGS PRIOR TO SUBMITTING THEIR BID FOR REFERENCE TO ALL NOTES ON ARCHITECTURAL DRAWINGS REFERRING TO SEE STRUCTURAL DRAWINGS. IF THE SIZE OF ELEMENTS AND DETAILING OF MEMBERS IS NOT INDICATED, THE CONTRACTOR SHALL CONTACT THE ARCHITECT TO REQUEST THE MISSING INFORMATION IN PREPARATION OF THEIR BID. THESE REFERENCED ITEMS SHALL BE PART OF THE BASE BID.

10. IN CASES OF DISCREPANCIES BETWEEN CONTRACT DOCUMENTS AND SUBMITTED SHOP DRAWINGS, THE CONTRACT DOCUMENTS SHALL GOVERN INSTALLATION OF MATERIALS.

FOUNDATIONS

1. BACKFILLING SHALL BE ACCOMPLISHED TO EQUAL HEIGHTS ON BOTH SIDES OF FOUNDATION WALLS TO PREVENT MOVEMENTS DUE TO UNBALANCED EARTH PRESSURE. WHERE EARTH IS ON ONE SIDE ONLY, BACKFILLING AND COMPACTION SHALL NOT START UNTIL FLOOR SLAB OR ADEQUATE BRACING IS PROVIDED FOR WALL SUPPORT (EXCEPT AT RETAINING WALLS).

2. ALL FOOTINGS ARE TO REST ON UNDISTURBED NATURAL SOIL, AS DEFINED IN THE SPECIFICATIONS, OR CONTROLLED COMPACTED FILL, REGARDLESS OF ELEVATIONS SHOWN ON DRAWINGS. FOOTING BOTTOM ELEVATIONS SHALL NOT BE HIGHER THAN INDICATED ON THE FOUNDATION PLAN, NOR LESS THAN 3'-6" BELOW FINISH GRADES.

3. IF FILL MATERIALS ARE ENCOUNTERED AT FOOTING BEARING ELEVATIONS, ALL FILL MATERIAL SHALL BE EXCAVATED AND DISPOSED OF LEGALLY OFF-SITE. THE OVER EXCAVATION SHALL BE BACKFILLED WITH CONTROLLED COMPACTED FILL TO THE BOTTOM OF FOOTING ELEVATION AS REQUIRED.

4. ALL CONTROLLED COMPACTED BACKFILL UNDER FOOTINGS AND WITHIN THE FOOTPRINT OF THE STRUCTURE SHALL BE COMPACTED TO 95% OF THE MODIFIED OPTIMUM DENSITY.

5. BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE AT LEAST 3'_6" BELOW FINISHED GRADE. PRIOR TO PROCEEDING WITH FOOTING EXCAVATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF FINISH GRADES AND BOTTOM OF EXTERIOR FOOTING ELEVATIONS TO MAINTAIN THE 3'-6" FROST PROTECTION.

6. ALL SOIL SURROUNDING AND UNDER ALL FOOTINGS SHALL BE PROTECTED FROM FREEZING AND FROST ACTION DURING THE COURSE OF CONSTRUCTION.

7. FOOTING BOTTOMS SHALL STEP AT THE RATE OF 1 UNIT VERTICAL TO 2 UNITS HORIZONTAL WITH A MAXIMUM VERTICAL STEP OF 1'_4".

8. WHERE SUBSURFACE PIPING PASSES THROUGH FOUNDATION WALLS, THE TOP OF THE FOOTINGS SHALL BE AT LEAST 8" BELOW THE INVERT ELEVATION OF THE PIPING AND CONDUITS. COORDINATE ALL INVERTS WITH MECHANICAL, PLUMBING, FIRE PROTECTION, ELECTRICAL, SITE AND SITE UTILITY DRAWINGS.

9. WHERE FOOTINGS ARE IN CLOSE PROXIMITY OF SUBSURFACE PIPING OR CONDUIT, BOTTOM OF FOOTINGS SHALL BE AT LEAST 8" BELOW INVERT ELEVATION OF PIPING OR CONDUITS.

1.

10. KEEP FOUNDATION EXCAVATIONS FREE OF WATER AT ALL TIMES.

11. USE LEAN CONCRETE (F'C=1500) OR CONTROLLED COMPACTED FILL FOR OVER_EXCAVATION OF FOOTINGS.

12. PLACEMENT OF ALL COMPACTED FILL MATERIALS MUST BE UNDER SUPERVISION OF AN APPROVED TESTING LABORATORY (SEE SPECIFICATIONS). CONCRETE FOUNDATIONS SHALL NOT BE PLACED UNTIL SUBGRADE HAS BEEN CHECKED IN PLACE AND APPROVED BY TESTING LABORATORY.

13. EXISTING ON-SITE EXCAVATED MATERIALS SHALL NOT BE ACCEPTABLE BACKFILL MATERIAL BELOW BUILDING FOUNDATIONS, SLABS ON GRADE, OR FOR BACKFILLING OF FOUNDATION WALLS , OR WITHIN 2 FEET OF PAVEMENT GRADES.

14. CONTROL JOINT SPACING IN FOUNDATION WALLS SHALL NOT EXCEED 30 FEET. 50% OF HORIZONTAL REINFORCEMENT SHALL EXTEND THROUGH JOINT AND HAVE A CLASS "B" SPLICE (PER ACI 318-95).

15. WHERE REQUIRED, CONSTRUCTION JOINTS SHALL BE KEYED AND OCCUR AT CONTROL JOINT INTERVALS. PROVIDE BENTONITE WATERSTOP FULL HEIGHT IN ALL WALL CONSTRUCTION JOINTS BELOW GRADE.

16. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF BRICK OR CONCRETE MASONRY BLOCK SHELF ELEVATIONS IN THE FOUNDATION WALLS.

17 THE LOCATION AND ELEVATION OF EXISTING FOOTINGS INFORMATION IS PROVIDED FOR BIDDING PURPOSES ONLY. EXISTING FOUNDATIONS MAY VARY FROM WHAT IS INDICATED, AND MUST BE VERIFIED IN FIELD PRIOR TO PREPARATION OF SHOP DRAWINGS. NOTIFY ARCHITECT IF EXISTING CONDITIONS PRECLUDE USE OF DETAILS AS SHOWN.

18. THE FOUNDATION DESIGN OF THE STRUCTURE HAS BEEN PREPARED BASED ON THE SOIL BORINGS, SOILS REPORT AND RECOMMENDATIONS PROVIDED BY THE GEOTECHNICAL ENGINEER, -----------------------, DATED -----------------------. IT IS THE CONTRACTORS RESPONSIBILITY TO REVIEW THE MATERIAL PRIOR TO PREPARING HIS BID TO ASSURE HE UNDERSTANDS THE SOIL CONDITIONS AND THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.

19. THE FOUNDATION DESIGN OF THE STRUCTURE HAS BEEN PREPARED BASED ON THE SITE GRADING PLAN PREPARED BY -------------------, DATED -------------------. IT IS THE C ONTRACTORS RESPONSIBILITY TO REVIEW THE DRAWING PRIOR TO PREPARING HIS BID TO ASSURE HE UNDERSTANDS THE SITE CONDITIONS AND THE REQUIREMENTS OF THE SITE ENGINEER.

20. FOUNDATION DESIGN SITE PREPARATION: THE FOUNDATION DESIGN AS INDICATED ON THE STRUCTURAL DRAWINGS HAS BEEN BASED ON THE FOLLOWING SITE PREPARATION. THE SITE HAS BEEN PREPARED BY THE EXCAVATION AND REMOVAL FROM THE SITE OF ALL EXISTING FILL AND CONTAMINATED SOILS. THE FOUNDATION DESIGN IS BASED ON THE CONTROLLED BACKFILLING OF THE SITE EXCAVATION WITH CONTROLLED FILL COMPACTED TO AT LEAST 95% OF THE MODIFIED OPTIMUM DENSITY IN ACCORDANCE WITH ASTM D1557.

21. PROVIDE CONTINUOUS BENTONITE WATERSTOPS BETWEEN THE TOP OF FOOTING AND BOTTOM OF ALL WALLS WHERE THE SLAB ON GRADE IS BELOW THE FINISH GRADE. PLACE THE WATERSTOP WITH A MINIMUM OF 2" CLEAR FROM THE FACE OF WALL, OR PER THE MANUFACTURERS WRITTEN INSTALLATION INSTRUCTIONS. ATTACH WATERSTOP TO THE CONCRETE PER THE MANUFACTURERS WRITTEN INSTALLATION INSTRUCTIONS.

SLAB ON GRADE

1. ALL SLABS ON GRADE SHALL BEAR ON A VAPOR RETARDER OVER A MINIMUM OF 4 INCHES OF 3/4" COMPACTED PROCESSED AGGREGATE FILL, OVER A MINIMUM OF 6 INCHES OF COMPACTED GRAVEL FILL. ALL JOINTS OF THE VAPOR RETARDER SHALL BE SEALED WITH TAPE.

2. IF FILL MATERIALS ARE ENCOUNTERED SLAB SUBGRADE ELEVATIONS, ALL FILL MATERIAL SHALL BE EXCAVATED AND DISPOSED OF LEGALLY OFF-SITE. THE OVER EXCAVATION SHALL BE BACKFILLED WITH CONTROLLED COMPACTED FILL TO THE BOTTOM OF THE SLAB SUBGRADE AS REQUIRED. ALL CONTROLLED COMPACTED BACKFILL UNDER SLABS WITHIN THE FOOTPRINT OF THE STRUCTURE SHALL BE COMPACTED TO 95% OF THE MODIFIED OPTIMUM DENSITY.

3. EXISTING ON-SITE EXCAVATED MATERIALS SHALL NOT BE ACCEPTABLE BACKFILL MATERIAL BELOW BUILDING SLABS ON GRADE.

4. CONTROL JOINTS ARE TO BE CREATED IN SLABS ON GRADE. JOINTS SHALL BE SAW CUT 1/8" WIDE AND TO A DEPTH EQUAL TO 1/4 OF THE SLAB THICKNESS. LOCATE JOINTS A MAXIMUM OF 15'_0" ON CENTER IN EACH DIRECTION, IN ADDITION TO THOSE LOCATIONS INDICATED ON PLAN.

5. CONSTRUCTION JOINTS AS REQUIRED SHALL BE KEYED AND DOWELED AND LOCATED AT INTERVALS OF A MAXIMUM OF 75 FEET ON CENTER.

6. SEE ARCHITECTURAL DRAWINGS FOR LOCATION AND SIZE OF DEPRESSED AREAS IN CONCRETE SLABS AND FOR CONCRETE PADS. MAINTAIN FULL SLAB THICKNESS IN DEPRESSED AREAS, UNLESS OTHERWISE SHOWN.

7. CONTRACTOR SHALL CONSOLIDATE ALL SLAB CONCRETE USING VIBRATIONAL METHODS IN CONFORMANCE WITH ACI 309, GUIDE FOR CONSOLIDATION OF CONCRETE.

CONCRETE

MATERIALS:

CONCRETE SHALL DEVELOP STRENGTH IN 28 DAYS AS FOLLOWS:

LOCATION	STRENGTH (PSI)
FOUNDATIONS	3000
WALLS	3000
SLABS ON GRADE	3500 (NOT TO EXCEED 4500 PSI)

1. ALL DETAILING, FABRICATION AND ERECTION OF REINFORCING BARS MUST FOLLOW THE LATEST ACI CODE AND THE LATEST ACI "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES".

2. REINFORCING STEEL SHALL BE 60,000 PSI YIELD.

3. NO TACK WELDING OF REINFORCING WILL BE PERMITTED.

4. UNLESS NOTED OTHERWISE, ALL LAP SPLICES SHALL BE CLASS B, IN ACCORDANCE WITH ACI 318-02.

5. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A_185.

6. WIRE MESH REINFORCEMENT MUST LAP ONE MESH SIZE AT SIDES AND ENDS AND BE WIRED TOGETHER.

1.

7. WELDED WIRE FABRIC SIDE LAPS SHALL BE STAGGERED TO AVOID FOUR MESH THICKNESS AT COINCIDING END LAP AND SIDE LAP LOCATION.

8. NO CALCIUM CHLORIDE OR ADMIXTURES CONTAINING MORE THAN 0.1% CHLORIDE BY WEIGHT OF ADMIXTURE SHALL BE USED IN THE CONCRETE.

9. BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE AT LEAST 3'_6" BELOW FINISHED GRADE. PRIOR TO PROCEEDING WITH FOOTING FORMWORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF BOTTOM OF EXTERIOR FOOTING ELEVATIONS WITH THE FINISH GRADES AND MAINTAINING THE 3'-6" FROST PROTECTION. WHERE SUBSURFACE PIPING PASSES THROUGH FOUNDATION WALLS, THE TOP OF FOOTINGS SHALL BE AT LEAST 8" BELOW THE INVERT ELEVATION OF THE PIPING AND CONDUITS. COORDINATE ALL INVERTS WITH MECHANICAL, PLUMBING, FIRE PROTECTION, ELECTRICAL, SITE AND SITE UTILITY DRAWINGS. PIPING OR CONDUITS SHALL NOT PASS THROUGH COLUMNS OR PIERS.

10. ALL HORIZONTAL STEEL SHOWN IN SECTIONS AND DETAILS SHALL BE CONTINUOUS, UNLESS OTHERWISE NOTED. ALL LAPS SHALL BE CLASS B SPLICES IN ACCORDANCE WITH ACI 318.

11. AT INTERSECTIONS OF REINFORCED CONCRETE WALLS, PROVIDE CORNER DOWELS OF SAME SIZE AND AT THE SAME SPACING AS THE SMALLER HORIZONTAL REINFORCING. DOWELS SHALL HAVE A CLASS B LAP WITH HORIZONTAL REINFORCING IN EACH DIRECTION.

12. PROVIDE DRILLED AND EPOXIED DOWELS OF SAME SIZE TO MATCH NEW REINFORCING WHERE NEW CONSTRUCTION ABUTS EXISTING CONCRETE CONSTRUCTION. LENGTH SHALL BE THE REQUIRED EMBEDMENT DEPTH PER THE ANCHOR BOLT/EPOXY MANUFACTURER PLUS A CLASS B LAP SPLICE FOR THE SIZE OF BAR.

13. PROVIDE CORROSION RESISTANT ACCESSORIES IN ALL EXPOSED CONSTRUCTION.

14. ALL KEYS IN CONCRETE WALLS SHALL BE 2 X 4 UNLESS NOTED OTHERWISE.

15. SEE ARCHITECTURAL, MECHANICAL, PLUMBING, FIRE PROTECTION, ELECTRICAL, SITE, SITE UTILITY AND EQUIPMENT DRAWINGS FOR CONCRETE PADS, SLEEVES, OPENINGS, RECESSES, AND BUILT-IN WORK IN CONCRETE ELEMENTS.

16. THE CONTRACTOR SHALL FURNISH, LOCATE AND INSTALL ALL ACCESSORIES FOR PROPER ANCHORAGE OF WOOD AND METAL FRAMING, WOOD BLOCKING, BRICK WORK AND MASONRY UNITS. HE SHALL BE SOLELY RESPONSIBLE FOR FURNISHING, LOCATING AND ENSURING PROPER QUANTITY OF ALL FASTENING DEVICES.

17. ALL CONCRETE TO REMAIN EXPOSED TO VIEW SHALL RECEIVE A SMOOTH RUBBED FINISH (SEE SPECIFICATIONS).

18. ALL CONCRETE CORNERS WITH BOTH SIDES EXPOSED TO VIEW SHALL BE SQUARE UNLESS OTHERWISE SHOWN OR NOTED. THE EDGE SHALL BE RUBBED, PRODUCING A SMOOTH, DENSE SURFACE WITHOUT PITS OR IRREGULARITIES.

19. PROVIDE CLEARANCE FROM EDGE OF REINFORCING TO EDGE OF CONCRETE AS FOLLOWS:

FOOTINGS (AGAINST EARTH)	3"
WALLS, INTERIOR FACE	3/4"
WALLS, EXTERIOR FACE (#5 AND SMALLER)	1 1/2"
WALLS, EXTERIOR FACE (#6 AND LARGER)	2"
SLABS (INTERIOR)	3/4"
SLABS (EXTERIOR)	1 1/2"
SLABS ON GRADE (W.W.F.)	1/3 X THK. FROM TOP SURFACE

20. PROVIDE THE FOLLOWING AT OPENINGS IN ALL CONCRETE WALLS, UNLESS OTHERWISE INDICATED:

1-#5 AT EACH FACE ON EACH SIDE OF OPENING, EXTENDING 2'-0" BEYOND OPENING.
1-#5 X 4'-0" LONG AT EACH FACE DIAGONALLY AT EACH CORNER.

21. SHOP DRAWINGS SHALL INDICATE LOCATIONS OF ALL WALL CONTROL AND CONSTRUCTION JOINTS.

STRUCTURAL STEEL

MATERIALS:

STRUCTURAL STEEL TUBING	ASTM A500, GRADE B
STRUCTURAL STEEL PIPE	ASTM A53, GRADE B
BOLTS	ASTM A325
ANCHOR BOLTS	ASTM F1554
WELDING ELECTRODE	ASTM E 70

1. DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO CURRENT AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATION.

2. WELDING SHALL CONFORM TO THE CODE FOR "ARC AND GAS WELDING IN BUILDING CONSTRUCTION" OF THE AMERICAN WELDING SOCIETY.

3. ALL WELDING SHALL BE DONE BY A CERTIFIED WELDER IN ACCORDANCE WITH A.W.S. STANDARDS.

4. PROVIDE LEVELING NUTS FOR ALL COLUMN BASE PLATES WITH FOUR (4) ANCHOR BOLTS AND PROVIDE 1 1/2" MINIMUM NON-SHRINK GROUT. PROVIDE 1/4" LEVELING PLATES ON 3/4" MINIMUM NON-SHRINK GROUT AT ALL OTHER LOCATIONS, UNLESS OTHERWISE NOTED.

WOOD FRAMING

1. LUMBER FOR WOOD JOISTS, RAFTERS AND BEAMS SHALL BE DOUG-FIR, NUMBER 2 GRADE, WITH 19% MAXIMUM MOISTURE CONTENT AND MINIMUM SAFE STRENGTH CAPACITY OF:

FB = 875 PSI FOR BENDING
FC (PERP.) = 625 PSI FOR COMPRESSION PERP. TO GRAIN
FC (PAR.) = 1300 PSI FOR COMPRESSION PARALLEL TO GRAIN
FV = 95 PSI FOR HORIZONTAL SHEAR
E = 1,600,000 PSI MODULUS OF ELASTICITY

2. LUMBER FOR WOOD STUDS SHALL BE DOUG-FIR, NUMBER 2 GRADE, WITH 19% MAXIMUM MOISTURE CONTENT AND MINIMUM SAFE CAPACITY OF:

FB = 875 PSI FOR BENDING
FC (PERP.) = 625 PSI FOR COMPRESSION PERP. TO GRAIN
FC (PAR.) = 1300 PSI FOR COMPRESSION PARALLEL TO GRAIN
FV = 95 PSI FOR HORIZONTAL SHEAR
E = 1,600,000 PSI MODULUS OF ELASTICITY

3. ALL LUMBER IN CONTACT WITH MASONRY, CONCRETE, OR WITHIN 8" OF GRADE SHALL BE PRESSURE TREATED LUMBER.

4. ROUGH PLYWOOD: CONFORM TO THE REQUIREMENTS OF U.S. PRODUCT STANDARD PS 1 AND THE AMERICAN PLYWOOD ASSOCIATION. PRODUCTS CONFORMING TO EQUIVALENT GRADING BY TECO OR PITTSBURGH TESTING LABORATORY IS ALSO APPROVED. DO NOT USE PARTICLE PANEL PRODUCTS OR OTHER FABRICATED WOOD PRODUCTS.

FLOOR SHEATHING SHALL BE 3/4" STURD-I-FLOOR TONGUE AND GROOVE PLYWOOD.

5. CORNER POSTS SHALL BE THE EQUIVALENT OF NOT LESS THAN THREE PIECES OF 2" X 6" STUDS AT 6" STUD WALLS AND 2" X 4" STUDS AT 4" STUD WALLS, BRACED BY APPROVED SHEATHING APPLIED VERTICALLY IN PANELS NOT LESS THAN 4'-0" X 8'-0".

6. PROVIDE WOOD POSTS BELOW BEAMS, MULTIPLE WIDTH WOOD MEMBERS, AND GIRDER TRUSSES THAT SHALL MATCH THE WIDTH OF THE MEMBER TO BE SUPPORTED.

7. FLOOR JOIST BRIDGING:

PROVIDE 1" X 3" DIAGONAL BRIDGING (OR EQUIVALENT) AT 8'-0" MAXIMUM ON CENTER.

USE ONE LINE OF SOLID BLOCKING NEXT TO EXTERIOR WALLS AND AT CENTERLINE OF INTERIOR STUD WALLS.

8. CUTTING AND NOTCHING: IN BEAMS, JOISTS AND RAFTERS, CUTS SHALL NOT BE DEEPER THAN SHOWN ON DRAWINGS, AND IN NO CASE DEEPER THAN 1/6 THE DEPTH OF THE BEAM, JOIST OR RAFTER.

9. CONNECTIONS AND FASTENINGS: ALL MEMBERS SHALL BE FASTENED AT THEIR JUNCTIONS WITH APPROVED CONNECTORS, SPIKES, NAILS, STRAPS, OR OTHER DEVICES. ALL CONNECTORS AND FASTENERS FOR USE WITH PRESSURE TREATED WOOD SHALL BE STAINLESS STEEL. ALL BOLTS IN CONTACT WITH PRESSURE TREATED LUMBER SHALL BE HOT DIPPED GALVANIZED OR STAINLESS STEEL.

10. NAILING SHALL BE IN ACCORDANCE WITH THE "FASTENING SCHEDULE", IN CHAPTER 23 OF THE 2003 IBC CODE PER THE STATE OF CONNECTICUT BUILDING CODE.

11. DOUBLE UP JOISTS AND RAFTER UNDER ALL HVAC UNITS, UNDER ALL PARTITIONS, AND ELSEWHERE AS INDICATED ON THE DRAWINGS.

12. ALL OPENINGS SHALL BE FRAMED WITH DOUBLE POSTS, DOUBLE JOISTS OR DOUBLE RAFTERS AND HEADERS ON END (UPRIGHT), UNLESS OTHERWISE INDICATED.

13. CONNECT ALL WOOD SILL PLATES TO CONCRETE OR MASONRY WITH A MINIMUM OF (1)-5/8" DIAMETER ANCHOR BOLT WITH WASHERS AT 4'-0" ON CENTER MAXIMUM AND A MINIMUM OF 8" EMBEDMENT INTO CONCRETE OR MASONRY, AND BOLTS A MAXIMUM OF 6" FROM EACH END OF INDIVIDUAL WOOD PLATES AND ADJACENT TO PLATE LAPS, UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

14. CONNECT RAFTERS, JOISTS AND HEADERS FRAMING INTO THE SIDES OF OTHER WOOD MEMBERS WITH FORMED "SADDLE" TYPE JOIST HANGERS, MADE FROM 18 GA. GALVANIZED STEEL PER ASTM A93. INSTALL IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

15. ALL PREFABRICATED STEEL CONNECTORS INDICATED ON THE DRAWINGS SHALL BE AS MANUFACTURED BY SIMPSON STRONG-TIE OR APPROVED EQUAL. ALL SUBSTITUTIONS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO PLACEMENT ON THE PROJECT. CONTRACTOR SHALL ANTICIPATE THE LEAD TIMES REQUIRED FOR OBTAINING THE CONNECTORS INDICATED ON THE DRAWINGS AND ALLOW SUFFICIENT TIME TO ORDER AND OBTAIN IN ORDER AS TO NOT DELAY THE WORK.

16. SIZE, SPACING AND DETAIL OF WOOD STUDS SHALL BE AS INDICATED ON THE ARCHITECTURAL DRAWINGS.

17. MEMBERS INDICATED THUS: "LVL" SHALL BE LAMINATED VENEER LUMBER, OR EQUIVALENT PSL PARALLEL STRAND LUMBER "PARALLAM" SECTIONS WITH THE FOLLOWING MINIMUM MATERIAL PROPERTIES:

FB = 2600 PSI
FC (PERP.) = 750 PSI
FC (PAR.) = 2510 PSI
FV = 285 PSI
E = 1,900,000 PSI

18. BEAM MEMBERS INDICATED THUS: "PSL" SHALL BE PARALLEL STRAND LUMBER "PARALLAM" SECTIONS WITH THE FOLLOWING MINIMUM MATERIAL PROPERTIES:

FB = 2900 PSI
FC (PERP.) = 750 PSI
FC (PAR.) = 2900 PSI
FV = 290 PSI
E = 2,000,000 PSI

19. COLUMN MEMBERS INDICATED THUS: "PSL" SHALL BE PARALLEL STRAND LUMBER "PARALLAM" SECTIONS WITH THE FOLLOWING MINIMUM MATERIAL PROPERTIES:

FB = 2500 PSI
FC (PERP.) = 600 PSI
FC (PAR.) = 2500 PSI
FV = 230 PSI
E = 1,800,000 PSI

20. STUD MEMBERS INDICATED THUS: "LSL" SHALL BE LAMINATED STRAND LUMBER "TIMBERSTRAND" SECTIONS WITH THE FOLLOWING MINIMUM MATERIAL PROPERTIES:

FT = 1075 PSI
FC (PAR.) = 1400 PSI
E = 1,300,000 PSI

21. PRE-ENGINEERED I-JOISTS SHALL BE I-LEVEL TJI SERIES COMPOSITE JOISTS AS MANUFACTURED BY WEYERHAEUSER OR EQUIVALENT. FLOOR JOISTS SHALL BE DESIGNED BY THE SUPPLIER TO SUPPORT THE LOADS ABOVE WITH DEFLECTIONS NOT TO EXCEED L/360 UNDER COMBINED DEAD LOAD + LIVE LOAD NOR L/480 UNDER LIVE LOAD ALONE. FLANGES FOR THE I-JOISTS SHALL BE LAMINATED VENEER LUMBER. FLANGES COMPRISED OF SAWN LUMBER SHALL NOT BE ACCEPTED.

WOOD TRUSSES

1. DESIGN FLOOR TRUSSES FOR THE FOLLOWING LOAD:

LIVE LOAD	50 PSF
DEAD LOAD	15 PSF
PARTITION LOAD	20 PSF

2. DESIGN ROOF TRUSSES FOR THE FOLLOWING LOAD:

LIVE LOAD	30 PSF
DEAD LOAD - TOP CHORD	15 PSF
DEAD LOAD - BOTTOM CHORD	5 PSF

PLUS WEIGHTS OF ALL MECHANICAL UNITS HUNG FROM TRUSSES, COORDINATE WITH MECHANICAL CONTRACTOR PRIOR TO DESIGNING TRUSSES.

3. FLOOR TRUSSES SHALL BE DESIGNED BY THE TRUSS FABRICATOR TO SUPPORT THE LOADS ABOVE WITH DEFLECTIONS NOT TO EXCEED L/360 UNDER COMBINED DEAD LOAD + LIVE LOAD NOR L/480 UNDER LIVE LOAD ALONE. TRUSS DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF CONNECTICUT.

4. ROOF TRUSSES SHALL BE DESIGNED BY THE TRUSS FABRICATOR TO SUPPORT THE LOADS ABOVE WITH DEFLECTIONS NOT TO EXCEED L/360 UNDER COMBINED DEAD LOAD + LIVE LOAD NOR L/360 UNDER LIVE LOAD ALONE. TRUSS DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF CONNECTICUT.

5. TRUSS LUMBER SHALL BE ANY SOFTWOOD SPECIES OF SPECIFIED GRADE, CONFORMING TO STRENGTH AND MODULUS REQUIREMENTS OF PS 20 "AMERICAN SOFTWOOD LUMBER STANDARD."

MOISTURE CONTENT: SEASONED, WITH 19% MAXIMUM MOISTURE CONTENT AT TIME OF INSTALLATION.
GRADE FOR CHORD MEMBERS: NO. 2 MINIMUM
GRADE FOR WEB MEMBERS: NO. 3 MINIMUM

6. TRUSS JOINT CONNECTIONS SHALL BE MADE USING LIGHT GAGE METAL PLATES WITH EXTENDED TEETH PRESSED INTO WOOD OVER BOTH SIDES OF THE JOINT TO TRANSFER LOAD.

7. TRUSS BRACING: VERTICAL TRUSS BRACING SHALL CONSIST OF 1"X4" MEMBER SLOPING AT ABOUT 45 DEGREES, EXTENDING FROM THE TOP CHORD TO BOTTOM CHORD ELEVATION AND NAILED TO EACH TRUSS WEB MEMBER THAT IT PASSES. ANCHOR ENDS OF CONTINUOUS 1"X4" DIAGONAL BRACE TO FRAMING PERPENDICULAR TO TRUSSES.

8. STRUTS SHALL BE INSTALLED BETWEEN BOTTOM CHORDS AT THE SAME TRUSS PANELS AS THE VERTICAL SWAY BRACING, AND SHALL EXTEND CONTINUOUSLY FROM END WALL TO END WALL.

9. FABRICATOR SHALL SUBMIT SHOP DRAWINGS INDICATING ALL ELEMENT CONNECTIONS, SPLICES AND DETAILS, WITH CRITERIA SHOWN FOR CONNECTION DESIGN. FABRICATOR SHALL CERTIFY THAT CONNECTIONS ARE DESIGNED FOR TRUSS FORCES SHOWN ON THE SHOP DRAWINGS.

10. CUT ALL MEMBERS TO FIT AND BUTT TIGHT.

11. FLOOR TRUSS SPACING SHALL NOT EXCEED 1'-4" CENTER TO CENTER.

12. ROOF TRUSS SPACING SHALL NOT EXCEED 2'-0" CENTER TO CENTER.

13. FABRICATOR SHALL PROVIDE ALL STEEL CONNECTORS TO CONNECT TRUSSES TO THE SUPPORTING STRUCTURE ADEQUATE FOR ALL GRAVITY AND UPLIFT LOADS AS INDICATED ON THE SIGNED AND SEALED TRUSS SHOP DRAWINGS. FABRICATOR SHALL CERTIFY THAT CONNECTORS ARE DESIGNED FOR TRUSS FORCES SHOWN ON THE SHOP DRAWINGS. CONNECTORS SHALL BE BY SIMPSON STRONG-TIE OR ACCEPTED EQUAL.

north

PROGRESS SET March 16, 2015

Project Title:
Renovation and Addition to
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Durham, Connecticut 06422

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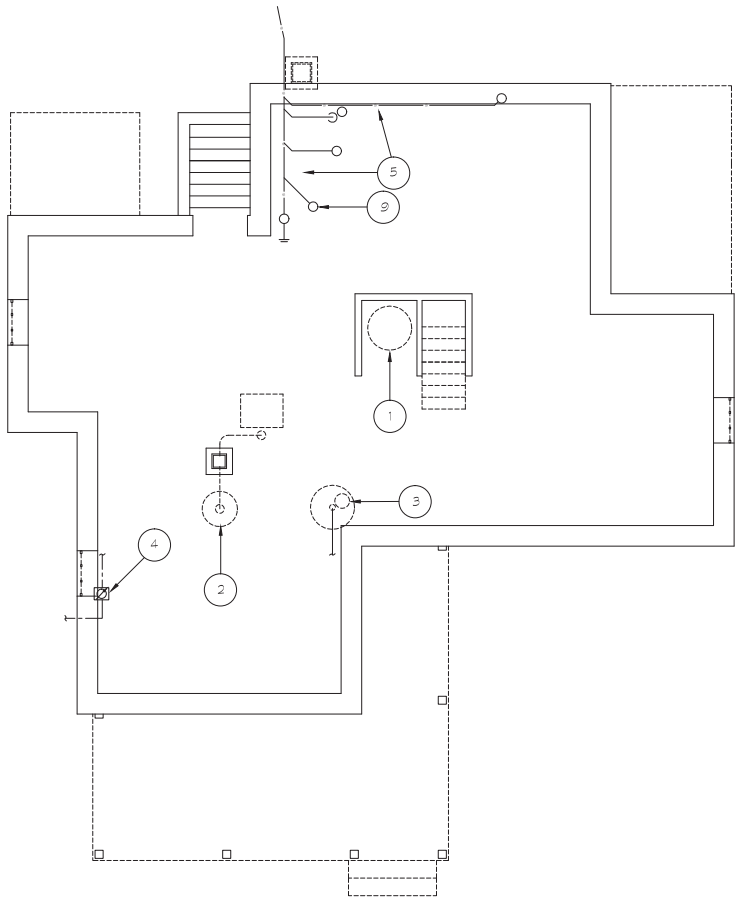
Revision:	Description:	Date:	Revised By:

MHAI
Michael Horton Associates Inc.
Consulting Structural Engineers
151 Meadow Street
Branford, Connecticut 06405
203-481-8600 mha-eng.com

Drawing Title:
GENERAL NOTES

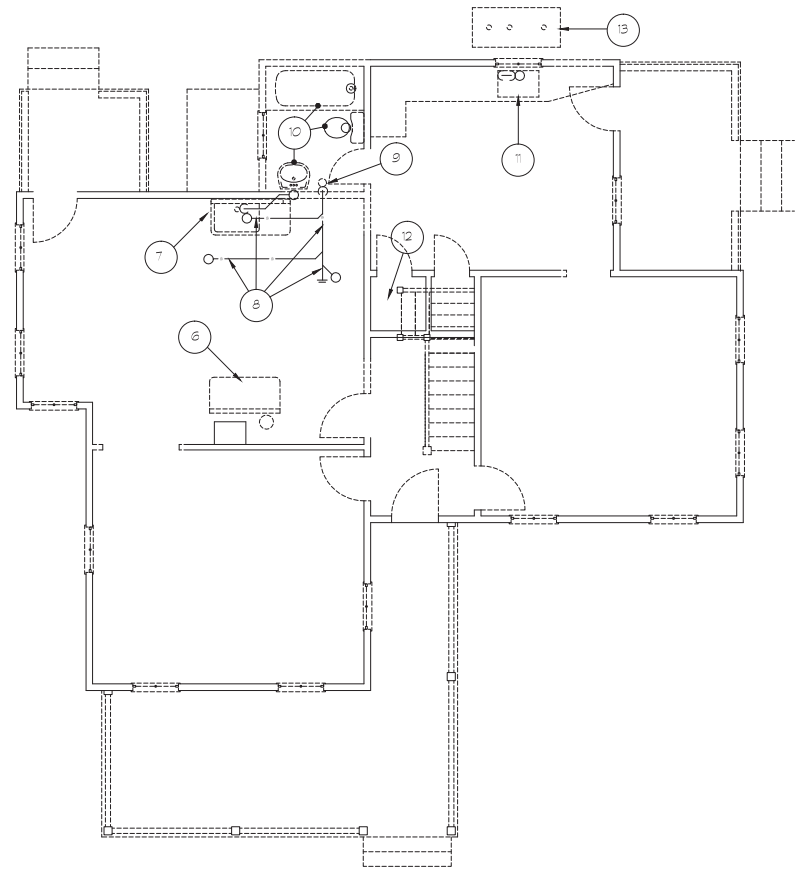
Date: March 6, 2015
Scale: 1/4" = 1'-0"
Drawn By: AC
SPA Project Number: 14.131

Drawing Number: S12



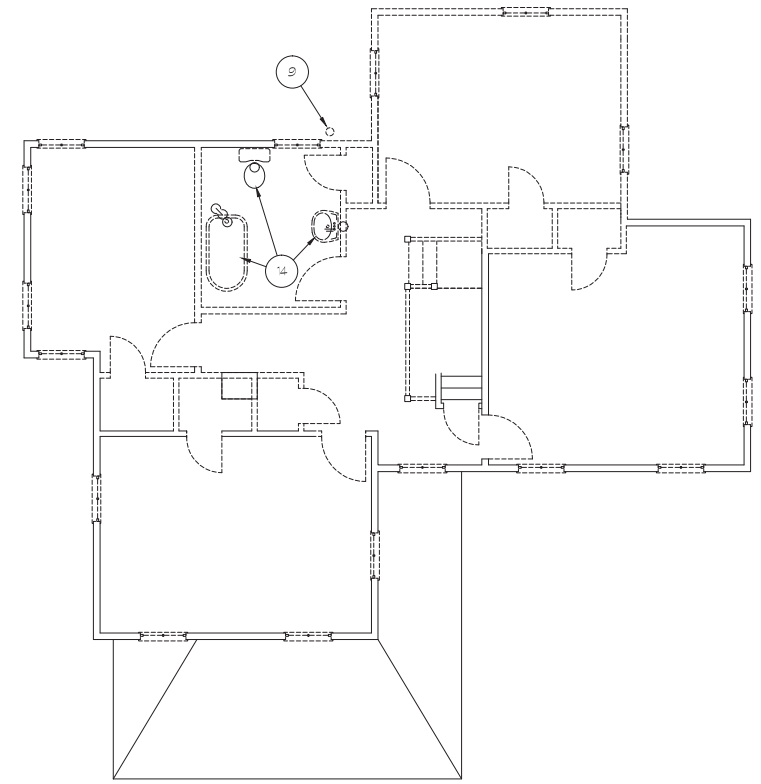
BASEMENT PLUMBING DEMOLITION PLAN (1 / P01)

SCALE: 1/14" = 1'-0"



FIRST FLOOR PLUMBING DEMOLITION PLAN (2 / P01)

SCALE: 1/14" = 1'-0"



SECOND FLOOR PLUMBING DEMOLITION PLAN (3 / P01)

SCALE: 1/14" = 1'-0"

PLUMBING DEMOLITION NOTES

ALL EXISTING PLUMBING SYSTEM EQUIPMENT, FIXTURES, PIPING ETC. WITHIN THE BUILDING SHALL BE REMOVED UNLESS SPECIFICALLY NOTED OTHERWISE, AND SHALL BE DISPOSED OF, TURNED OVER TO THE OWNER, OR SALVAGED AS DIRECTED BY THE OWNER.

REMOVE ALL EXISTING DOMESTIC HOT & COLD WATER, SANITARY, WASTE & VENT DISTRIBUTION THROUGHOUT THE BUILDING, WHETHER OR NOT SHOWN.

IT IS NOT THE INTENT TO LEAVE ANY ABANDONED PIPING IN PLACE. HOWEVER, IF VERY LIMITED PORTIONS REMAIN WITHIN WALLS OR OTHER STRUCTURES INDICATED TO REMAIN, PIPING TO REMAIN SHALL BE PROPERLY PLUGGED, VALVED, CAPPED SUCH THAT UPON COMPLETION OF WORK ALL ABANDONED SYSTEMS ARE PROPERLY CONCEALED.

NO DEAD ENDS SHALL BE LEFT ON ANY PIPING SYSTEMS UPON COMPLETION OF WORK.

COORDINATE ALL EXISTING SITE AND BUILDING UTILITY DEMOLITION AND OR ABANDONMENT WITH THE UTILITY COMPANY (AND SYSTEM OPERATOR, IF SEPARATE ENTITY).

NUMBERED PLUMBING DEMOLITION NOTES

1. REMOVE ELECTRIC DOMESTIC STORAGE WATER HEATER , WITH RELATED CONTROLS, ACCESSORIES, PIPING, ETC.
2. REMOVE OIL-FIRED DOMESTIC WATER HEATER, WITH RELATED VENTING, BURNER, FUEL AND WATER PIPING, CONTROLS, ACCESSORIES, ETC.
3. REMOVE SUMP PUMP WITH RELATED CONTROLS, ACCESSORIES AND PIPING. REMOVE SUMP BASIN AND COVER.
4. REMOVE WATER METER, VERIFY OWNERSHIP (PROPERTY OWNER OR WATER UTILITY) AND RETURN TO OWNER. REMOVE BUILDING DOMESTIC WATER PIPING BACK TO FOUNDATION WALL AND CAP. NOTIFY OF SERVICE ABANDONMENT, AND COORDINATE DISCONNECTION OF EXISTING SERVICE FROM STREET WATER MAIN WITH THE WATER UTILITY.
5. REMOVE ALL BUILDING SANITARY, WASTE AND VENT PIPING, INCLUDING VENTS THRU ROOF. REMOVE SANITARY TO FROM WALL. ADDITIONAL SITE SANITARY PIPING TO BE REMOVED AS REQUIRED TO AVOID CONFLICT WITH BUILDING ADDITION (REFER TO SITE DWGS)
6. REMOVE OIL- OR PROPANE-FIRED RANGE/OVEN WITH RELATED VENTING , BURNER, CONTROLS, ACCESSORIES, FUEL PIPING, ETC.
7. REMOVE WALL-MOUNTED ENAMELED CAST IRON OR STEEL SINK UNIT, WITH ALL PIPING SERVICES AND SUPPORTS.
8. REMOVE PIPING OVERHEAD SERVING 2ND FLOOR FIXTURES.
9. REMOVE 4" SANITARY VENT STACK.
10. REMOVE BATHROOM FIXTURES WITH ALL PIPING SERVICES, CONTROLS, SUPPORTS, ACCESSORIES, ETC. TUB-SHOWER, FLOOR-MOUNTED WATER CLOSET, WALL-MOUNTED LAVATORY
11. REMOVE ENAMELED STEEL OR CAST IRON KITCHEN SINK TOP WITH ALL PIPING SERVICES, CONTROLS, ACCESSORIES, ETC.
12. REMOVE MISCELLANEOUS PIPING ROUGHS IN CLOSET.
13. REMOVE STEEL FUEL OIL STORAGE TANK, APPROXIMATELY 275 GALLON CAPACITY, WITH ALL RELATED PIPING
14. REMOVE BATHROOM FIXTURES WITH ALL PIPING SERVICES, CONTROLS, SUPPORTS, ACCESSORIES, ETC. BATHTUB WITH FEET, FLOOR-MOUNTED WATER CLOSET, WALL-MOUNTED LAVATORY

NORTH

Project Title:

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Durham, Connecticut 06422

SILVER / PETRUCELLI + ASSOCIATES

Architects / Engineers / Interior Designers

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Revision:	Description:	Date:	Revised By:

Drawing Title:

PLUMBING DEMOLITION PLANS 37 MAIN STREET

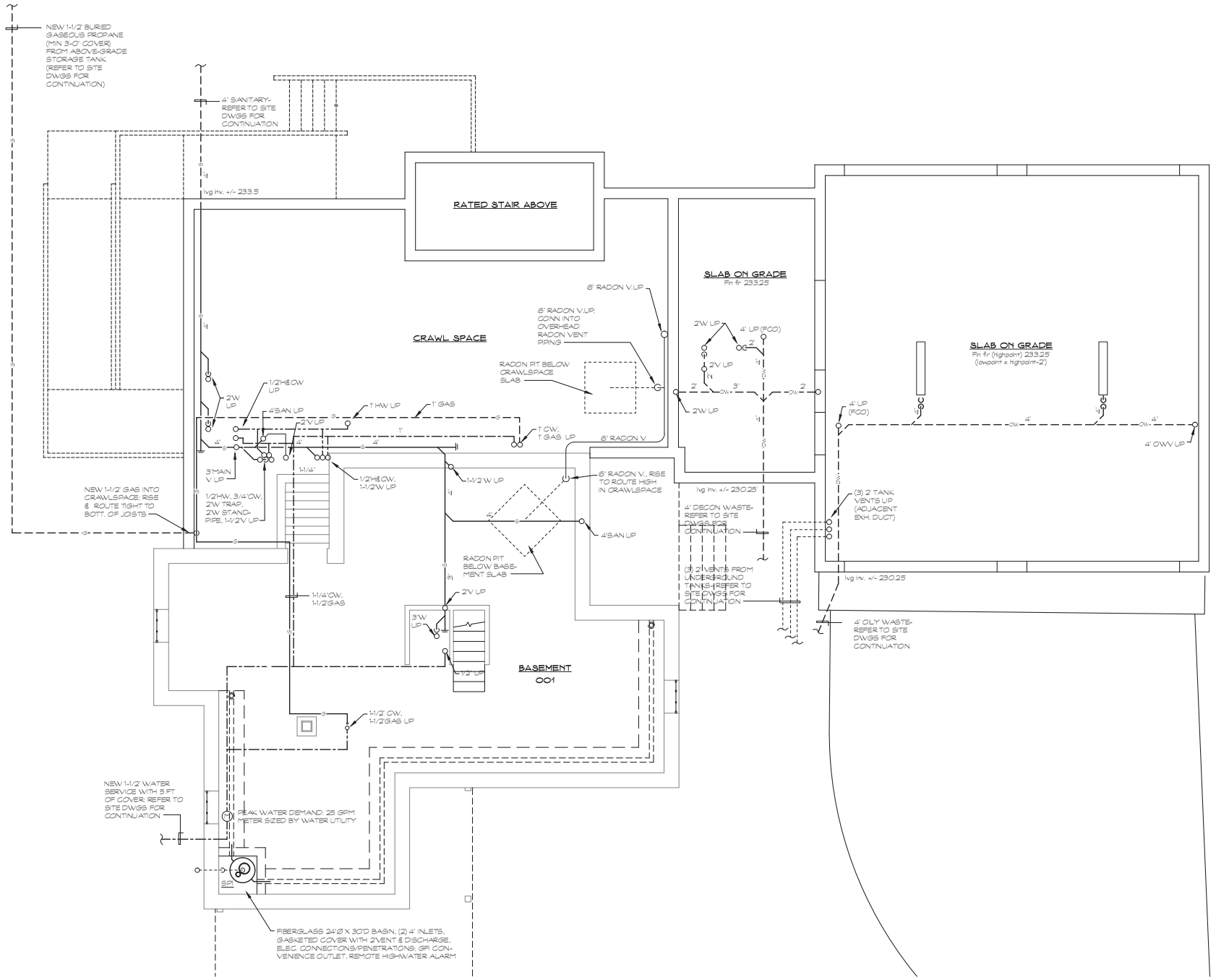
Date: MARCH 23, 2015

Scale: 1/4" = 1'-0"

Drawn By: MBQ

SPA Project Number: 14.131

Drawing Number: P01



BASEMENT PLUMBING PLAN

SCALE: 1/4" = 1'-0"

1 / P02

NORTH

Project Title:
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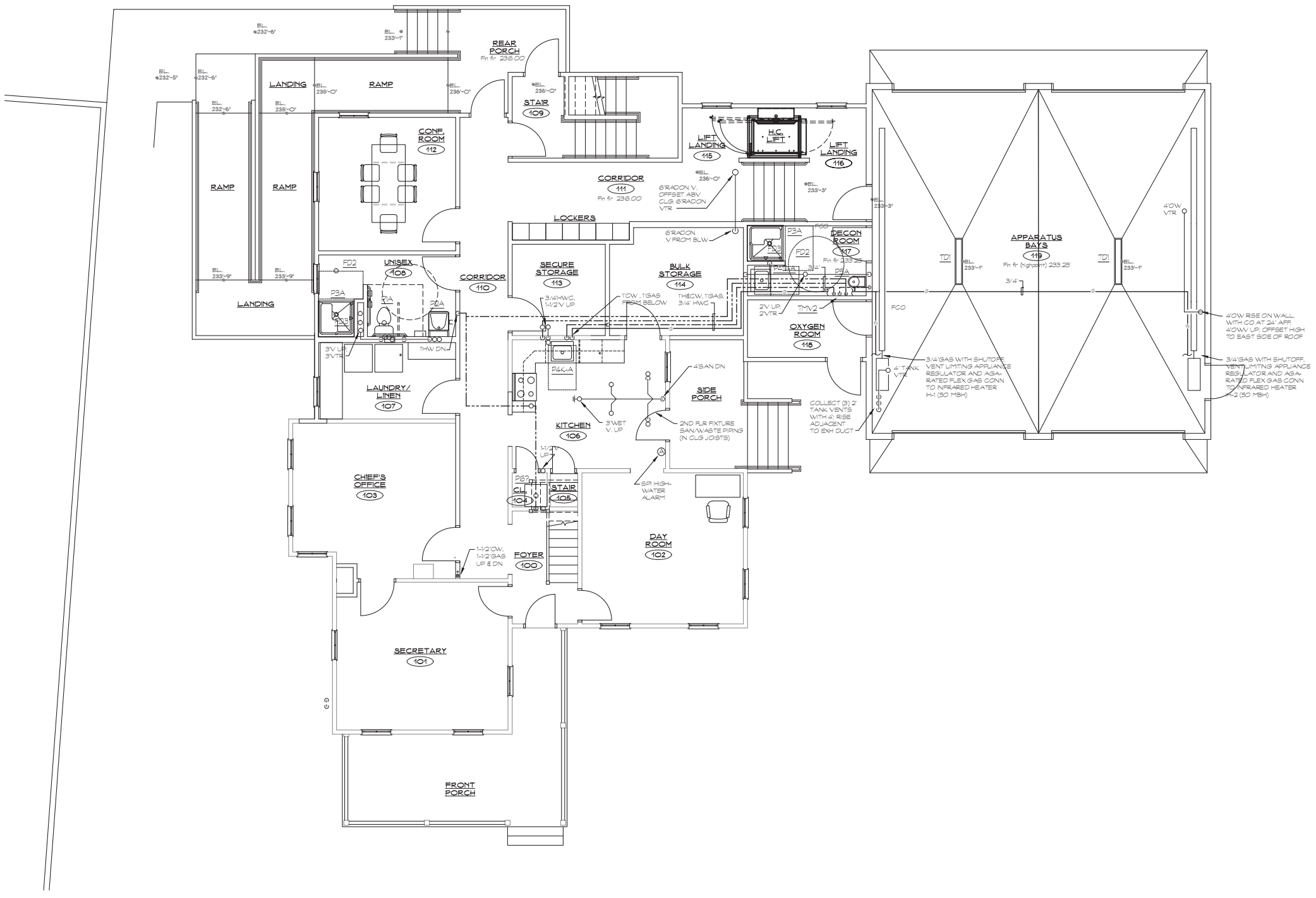
Revision:	Description:	Date:	Revised By:

Drawing Title:
BASEMENT LEVEL PLUMBING PLAN
37 MAIN STREET

Date: MARCH 23, 2015
Scale: 1/4" = 1'-0"
Drawn By: MBQ
SPA Project Number: 14.131

Drawing Number: P02



FIRST FLOOR PLUMBING PLAN

SCALE: 1/4" = 1'-0"

1 / P03

NORTH

Project Title:
Renovation and Addition to
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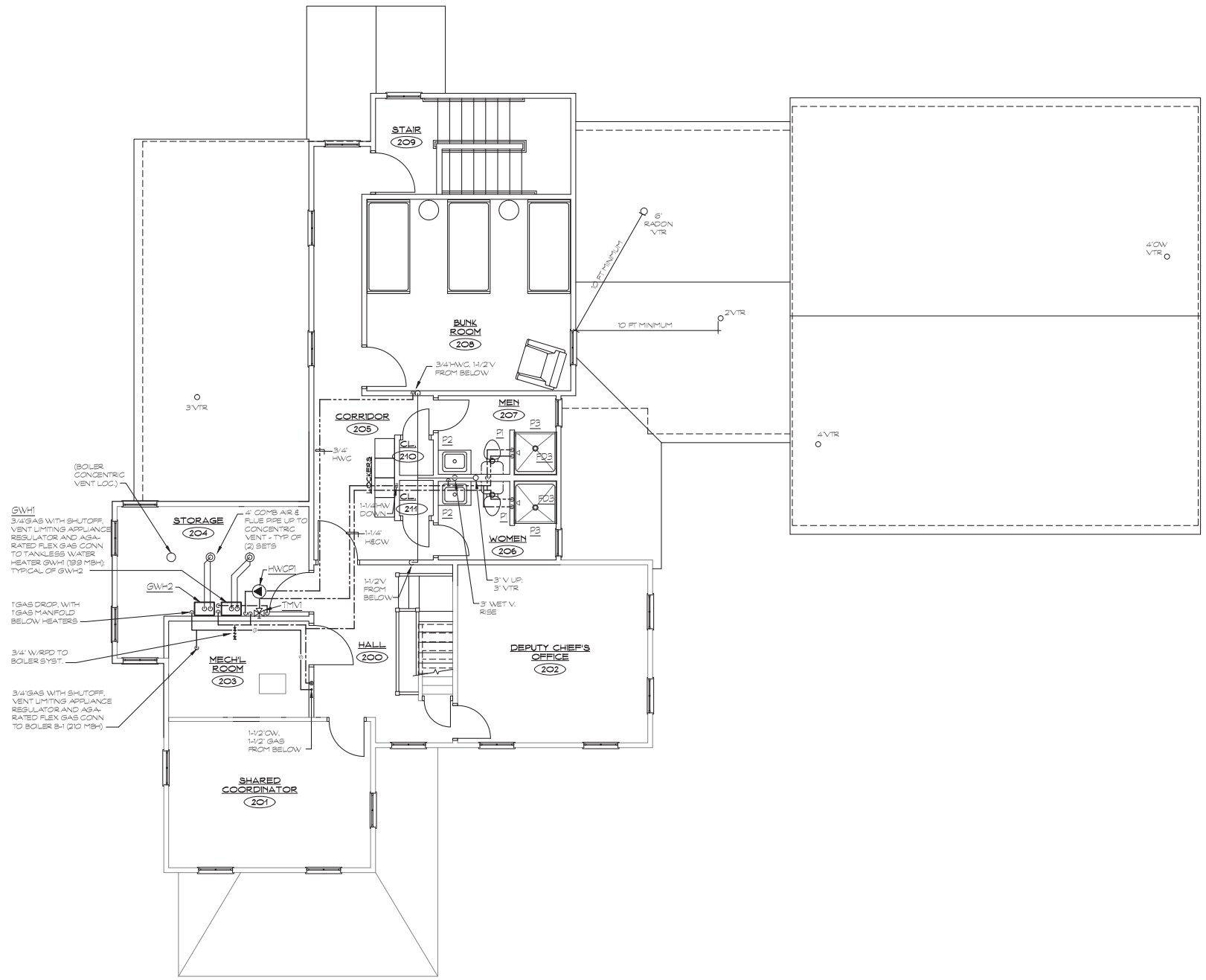
Revision:	Description:	Date:	Revised By:

Drawing Title:
1ST FLOOR
PLUMBING PLAN
37 MAIN STREET

Date: MARCH 23, 2015
Scale: 1/4" = 1'-0"
Drawn By: MBQ
SPA Project Number: 14.131

Drawing Number: P03



SECOND FLOOR PLUMBING PLAN

SCALE: 1/4" = 1'-0"

1 / P04

NORTH

Project Title:
Renovation and Addition to
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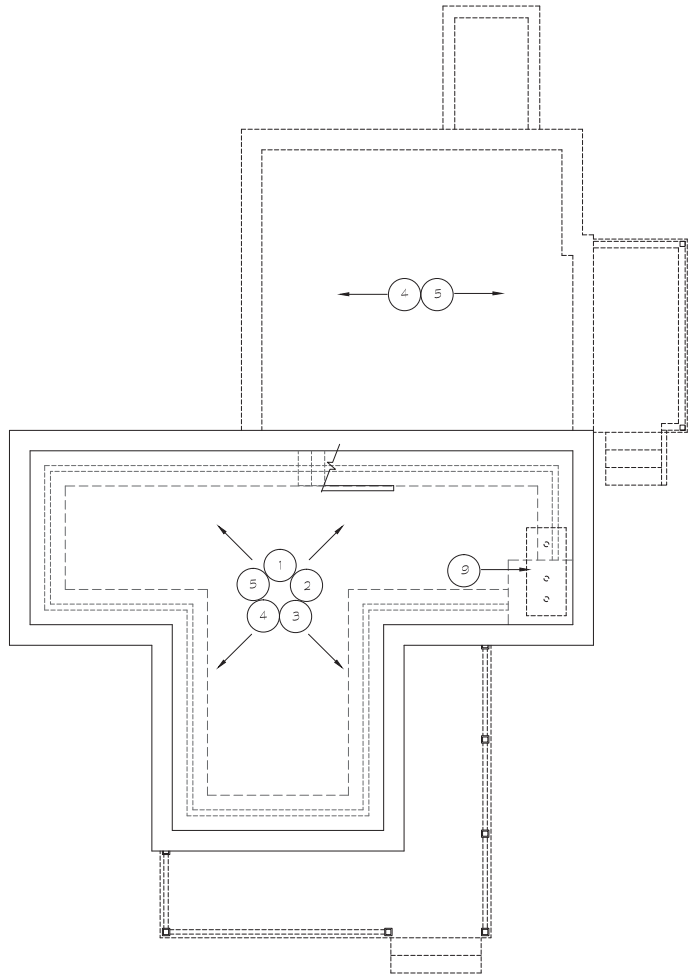
Revision:	Description:	Date:	Revised By:

Drawing Title:
2nd FLOOR PLUMBING PLAN
37 MAIN STREET

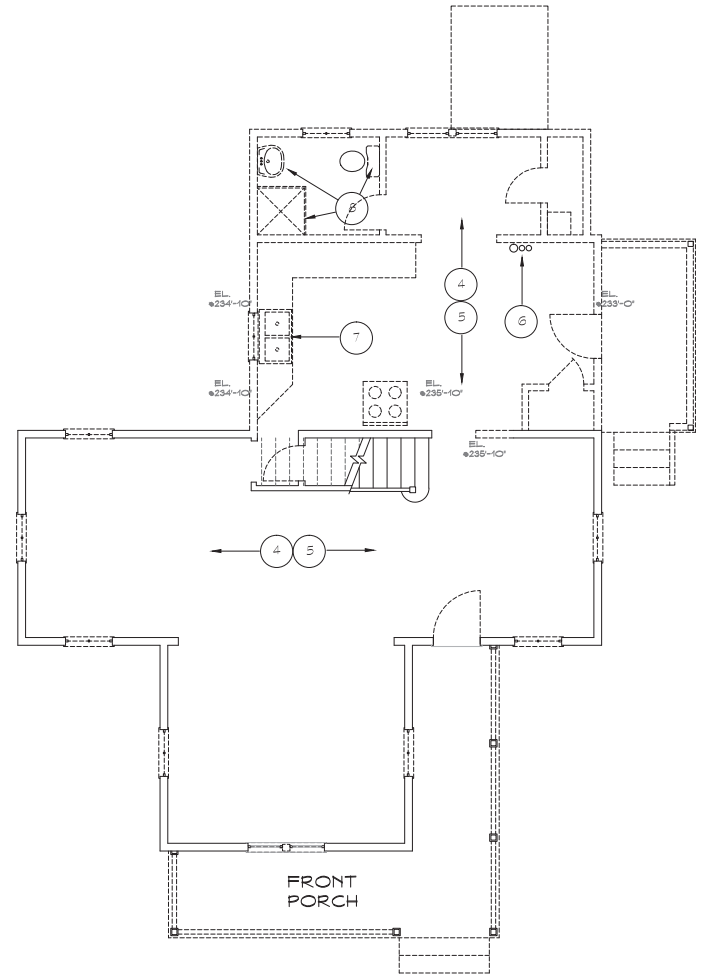
Date: MARCH 23, 2015
Scale: 1/4" = 1'-0"
Drawn By: MBQ
SPA Project Number: 14.131

Drawing Number: P04



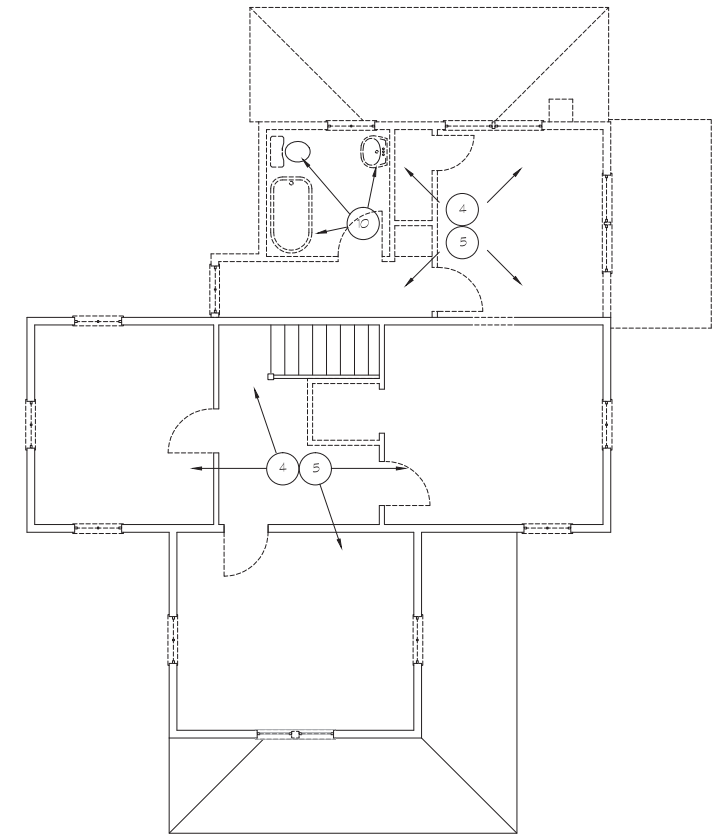
BASEMENT PLUMBING DEMOLITION PLAN (1 / P11)

SCALE: 1/14" = 1'-0"



FIRST FLOOR PLUMBING DEMOLITION PLAN (2 / P11)

SCALE: 1/14" = 1'-0"



SECOND FLOOR PLUMBING DEMOLITION PLAN (3 / P11)

SCALE: 1/14" = 1'-0"

PLUMBING DEMOLITION NOTES

ALL EXISTING PLUMBING SYSTEM EQUIPMENT, FIXTURES, PIPING ETC. WITHIN THE BUILDING SHALL BE REMOVED UNLESS SPECIFICALLY NOTED OTHERWISE, AND SHALL BE DISPOSED OF, TURNED OVER TO THE OWNER, OR SALVAGED AS DIRECTED BY THE OWNER.

REMOVE ALL EXISTING DOMESTIC HOT & COLD WATER, SANITARY, WASTE & VENT DISTRIBUTION THROUGHOUT THE BUILDING, WHETHER OR NOT SHOWN.

IT IS NOT THE INTENT TO LEAVE ANY ABANDONED PIPING IN PLACE. HOWEVER, IF VERY LIMITED PORTIONS REMAIN WITHIN WALLS OR OTHER STRUCTURES INDICATED TO REMAIN, PIPING TO REMAIN SHALL BE PROPERLY PLUGGED, VALVED, CAPPED SUCH THAT UPON COMPLETION OF WORK ALL ABANDONED SYSTEMS ARE PROPERLY CONCEALED.

NO DEAD ENDS SHALL BE LEFT ON ANY PIPING SYSTEMS UPON COMPLETION OF WORK.

COORDINATE ALL EXISTING SITE AND BUILDING UTILITY DEMOLITION AND OR ABANDONMENT WITH THE UTILITY COMPANY (AND SYSTEM OPERATOR, IF SEPARATE ENTITY).

NUMBERED PLUMBING DEMOLITION NOTES - THIS SHEET

1. REMOVE ALL DOMESTIC WATER HEATING EQUIPMENT WITH RELATED VENTING, BURNER, FUEL AND WATER PIPING, CONTROLS, ACCESSORIES, ETC.
2. REMOVE ALL PLUMBING PUMPS AND RELATED SUMPS, CONTROLS, ACCESSORIES AND PIPING.
3. DISCONNECT & REMOVE DOMESTIC WATER SERVICE INSTALLATIONS FROM WATER SOURCE, WITH PIPING, EQUIPMENT, TANKS AND CONTROLS. VERIFY OWNERSHIP (PROPERTY OWNER OR WATER UTILITY) OF INSTALLATIONS, AND RETURN TO OR DISPOSE OF AS DIRECTED BY THE OWNER. IF SERVED BY A WATER UTILITY, NOTIFY UTILITY OF SERVICE ABANDONMENT, AND COORDINATE DISCONNECTION OF EXISTING SERVICE FROM WATER SOURCE WITH SAME.
4. REMOVE BUILDING DOMESTIC WATER PIPING BACK TO FOUNDATION WALL AND CAP. IF SERVED BY A WATER UTILITY, NOTIFY UTILITY OF SERVICE ABANDONMENT, AND COORDINATE DISCONNECTION OF EXISTING SERVICE FROM STREET WATER MAIN WITH SAME.
5. REMOVE ALL BUILDING SANITARY, WASTE AND VENT PIPING, INCLUDING VENTS THRU ROOF. REMOVE SANITARY TO FROM WALL. ADDITIONAL SITE SANITARY PIPING TO BE REMOVED AS REQUIRED TO AVOID CONFLICT WITH CARRIAGE HOUSE ADDITION (REFER TO SITE DWGS).
6. REMOVE SUPPLIES AND WASTE STANDPIPE (FOR PREVIOUSLY REMOVED CLOTHES WASHER)
7. REMOVE KITCHEN SINK, WITH ALL PIPING SERVICES, CONTROLS, ACCESSORIES, ETC.
8. REMOVE BATHROOM FIXTURES WITH ALL PIPING SERVICES, CONTROLS, SUPPORTS, ACCESSORIES, ETC. SHOWER, FLOOR-MOUNTED WATER CLOSET, VANITY BASE-MOUNTED LAVATORY
9. REMOVE FUEL OIL STORAGE TANK, APPROXIMATELY 275 GALLON CAPACITY, WITH ALL RELATED PIPING
10. REMOVE BATHROOM FIXTURES WITH ALL PIPING SERVICES, CONTROLS, SUPPORTS, ACCESSORIES, ETC. TUB/SHOWER WITH FEET, FLOOR-MOUNTED WATER CLOSET, VANITY BASE-MOUNTED LAVATORY

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Revision:	Description:	Date:	Revised By:

Drawing Title:

PLUMBING DEMOLITION PLANS 51 MAIN STREET

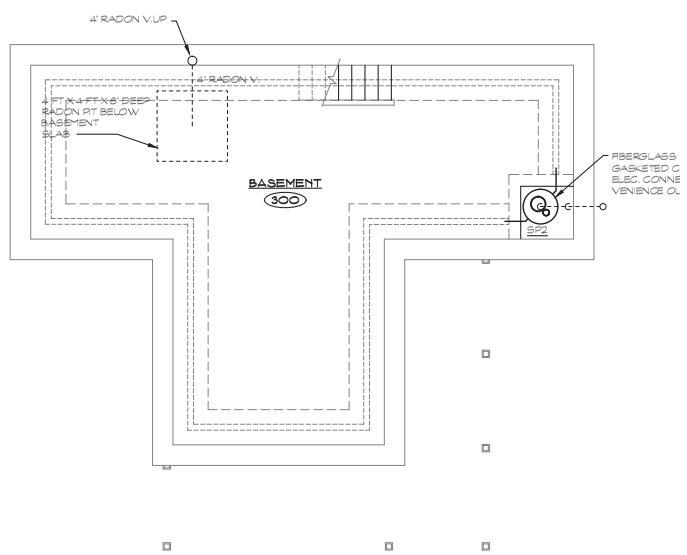
Date: MARCH 23, 2015

Scale: 1/4" = 1'-0"

Drawn By: MBQ

SPA Project Number: 14.131

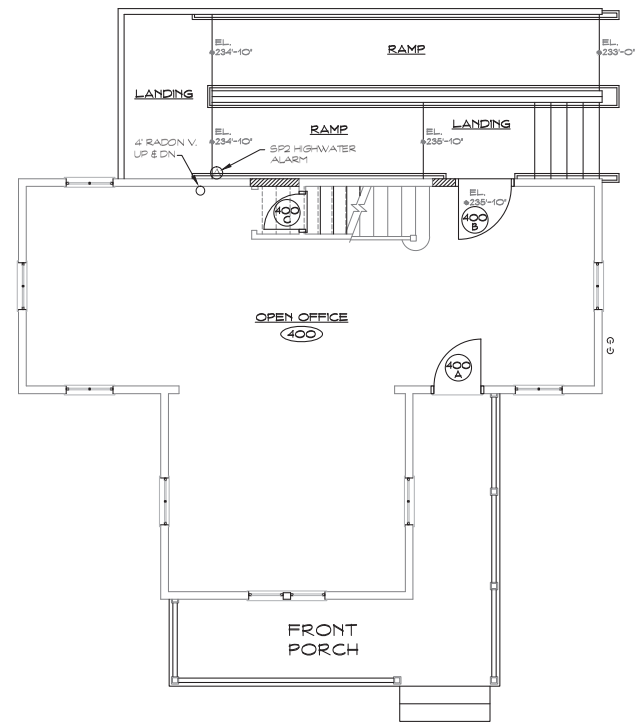
Drawing Number: P11



BASEMENT PLUMBING PLAN

SCALE: 1/14" = 1'-0"

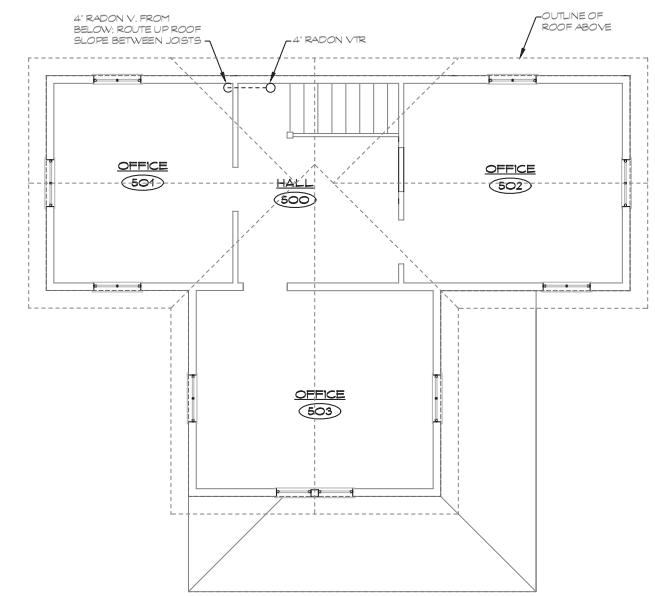
1
P12



FIRST FLOOR PLUMBING PLAN

SCALE: 1/14" = 1'-0"

2
P12



SECOND FLOOR PLUMBING PLAN

SCALE: 1/14" = 1'-0"

3
P12

NORTH

Project Title:

Renovation and Addition to

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Revision:	Description:	Date:	Revised By:

Drawing Title:

PLUMBING PLANS -
51 MAIN STREET

Date: MARCH 23, 2015

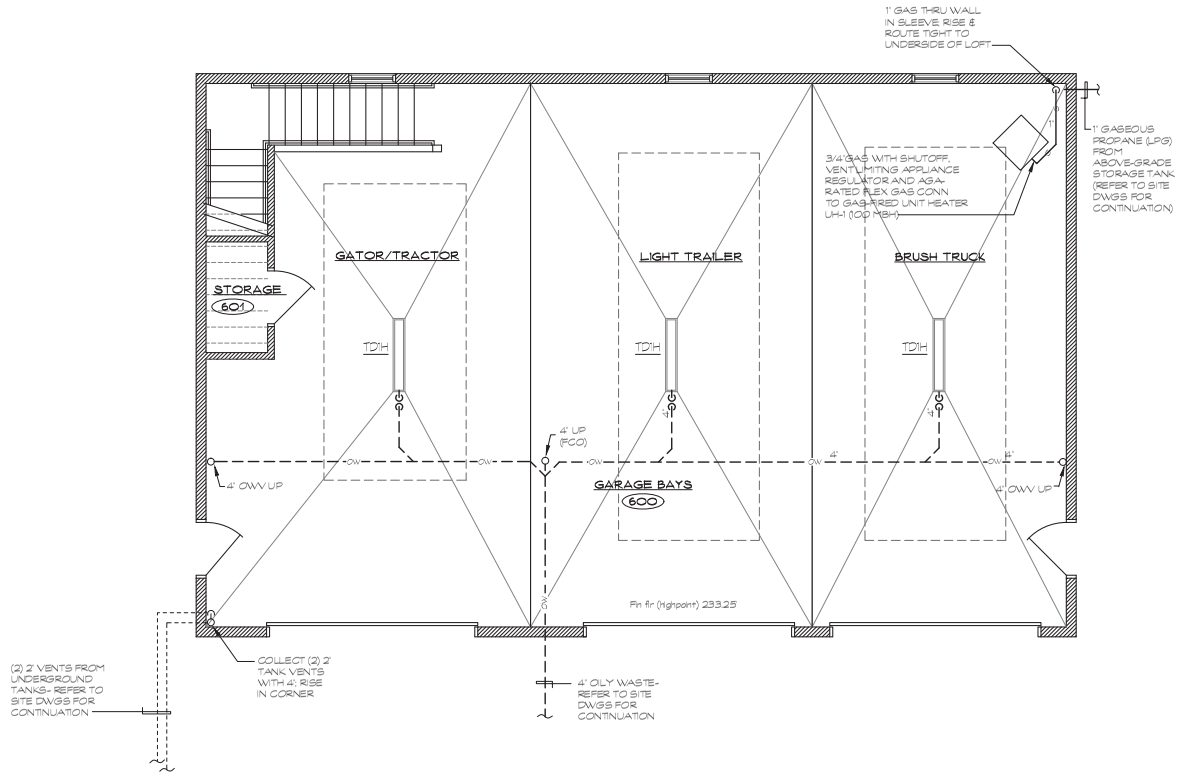
Scale: 1/4" = 1'-0"

Drawn By: MBQ

SPA Project Number: 14.131

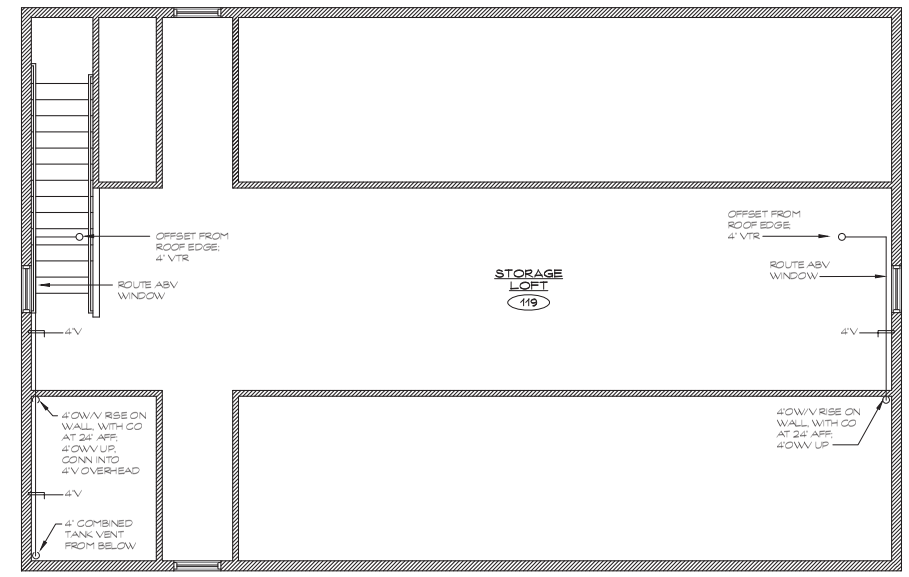
Drawing Number:

P12



CARRIAGE HOUSE MAIN FLOOR PLUMBING PLAN (1 / P13)

SCALE: 1/14" = 1'-0"



CARRIAGE HOUSE LOFT PLUMBING PLAN (2 / P13)

SCALE: 1/14" = 1'-0"

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Revision:	Description:	Date:	Revised By:

Drawing Title:
PLUMBING PLANS - CARRIAGE HOUSE
51 MAIN STREET

Date: MARCH 23, 2015
Scale: 1/4" = 1'-0"
Drawn By: MBQ
SPA Project Number: 14.131

Drawing Number: P13

PLUMBING SYMBOL LEGEND

SYMBOL	DESCRIPTION
	AIR ADMITTING VALVE
	BALANCING VALVE
	BALL VALVE
	VALVE IN UNDERGROUND BOX
	BACKWATER VALVE
	CHECK VALVE
	GAS VALVE
	PRESSURE RELIEF VALVE
	THERMOSTATIC MIXING VALVE
	GATE VALVE
	SUPPLY VALVE
	METER
	REDUCED PRESSURE BACKFLOW PREVENTER
	CLOTHES WASHER CONNECTION
	FLOOR CLEANOUT
	WALL CLEANOUT
	YARD CLEANOUT
	FLOOR DRAIN
	FLOOR DRAIN WITH FUNNEL
	FLOOR SINK WITH FULL GRATE
	FLOOR SINK WITH HALF GRATE
	FLOOR SINK WITH THREE-QUARTER GRATE
	HUB DRAIN
	ROOF DRAIN
	ROOF OVERFLOW DRAIN
	TRENCH DRAIN
HB	HOSE BIBB
	POINT OF NEW CONNECTION
	POINT OF DISCONNECTION
	VENT THROUGH ROOF
	RECIRCULATION PUMP
	WATER HAMMER ARRESTOR
TP	TRAP PRIMER
	'P' TRAP
WH	WALL HYDRANT
	PIPE DOWN
	PIPE UP
	CAPPED PIPE
	CLEANOUT PLUG
	UNION
	DIRECTION OF FLOW
	PIPE OR EQUIPMENT TO BE DEMOLISHED
XXX	PLUMBING FIXTURE
XXX-A	ADA COMPLIANT PLUMBING FIXTURE

PLUMBING PIPING SYSTEM LEGEND

EXISTING	NEW	DESCRIPTION
		DOMESTIC COLD WATER
		DOMESTIC HOT WATER SUPPLY
140°	140°	DOMESTIC 140°F HOT WATER SUPPLY
		DOMESTIC HOT WATER RETURN
S	S	SANITARY WASTE
S	S	SANITARY WASTE BELOW SLAB
V	V	SANITARY VENT
ST	ST	STORM DRAIN
ST	ST	STORM DRAIN BELOW SLAB
OS	OS	OVERFLOW STORM
G	G	NATURAL GAS
G	G	NATURAL GAS BELOW SLAB
RV	RV	RADON VENT
CA	CA	COMPRESSED AIR
CD	CD	CONDENSATE DRAIN
FM	FM	FORCE MAIN
FM	FM	FORCE MAIN BELOW SLAB
IW	IW	INDIRECT WASTE
GW	GW	GREASE WASTE
GW	GW	GREASE WASTE BELOW SLAB
AW	AW	ACID WASTE
AW	AW	ACID WASTE BELOW SLAB
AV	AV	ACID VENT
OW	OW	OIL WASTE
OW	OW	OIL WASTE BELOW SLAB

PLUMBING ABBREVIATIONS

ABBREVIATION	DESCRIPTION
ADA	AMERICAN DISABILITIES ACT
A.F.F.	ABOVE FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE
B.F.F.	BELOW FINISHED FLOOR
BFP	BACKFLOW PREVENTER
BIV	BUTTERFLY INDICATING VALVE
BLDG	BUILDING
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR
C.E.	CIVIL ENGINEER
CONT	CONTINUED
COP	CLEANOUT PLUG
CPVC	CHLORINATED POLYVINYL CHLORIDE
CV	CHECK VALVE
CW	COLD WATER
D.F.U.	DRAINAGE FIXTURE UNITS
DIA	DIAMETER
DN	DOWN
DWG	DRAWING
EA	EACH
E.C.	ELECTRICAL CONTRACTOR
EWH	ELECTRIC WATER HEATER
EX.	EXISTING
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDF	FLOOR DRAIN WITH FUNNEL
FDF-R	FLOOR DRAIN WITH ROUND FUNNEL
F.F.	FINISHED FLOOR
F.F.E.	FINISHED FLOOR ELEVATION
FLR.	FLOOR
F.P.C.	FIRE PROTECTION CONTRACTOR
FS	FLOOR SINK
FSB	FLOOR SINK WITH SEDIMENT BUCKET
FSH	FLOOR SINK WITH HALF GRATE
FSQ	FLOOR SINK WITH THREE-QUARTER GRATE
FT	FEET
F.U.	FIXTURE UNITS
GAL	GALLONS
G.C.	GENERAL CONTRACTOR
GPF	GALLONS PER FLUSH
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GWH	GAS WATER HEATER
HD	HUB DRAIN
HP	HORSEPOWER
HR	HOUR
HW	HOT WATER
HWR	HOT WATER RECIRCULATION
KW	KILOWATTS
MAX.	MAXIMUM
MBTUH	THOUSANDS OF BTU PER HOUR
M.C.	MECHANICAL CONTRACTOR
MIN.	MINIMUM
MISC.	MISCELANEOUS
NC	NORMALLY CLOSED
N.I.C.	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
P.C.	PLUMBING CONTRACTOR
P.R.A.	PROJECTED ROOF AREA
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
RAD.	RADIUS
RD	ROOF DRAIN
RO	ROOF OVERFLOW
RPBFP	REDUCED PRESSURE BACKFLOW PREVENTER
RL	RAINWATER LEADER
S.C.	SITE CONTRACTOR
SF	SQUARE FEET
SS	SANITARY SEWER STACK
TB	THRUST BLOCK
TD	TRENCH DRAIN
TP	TRAP PRIMER
TYP.	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
V	VENT
VB	VACUUM BREAKER
V.I.F.	VERIFY IN FIELD
VS	VENT STACK
VTR	VENT THROUGH ROOF
WCO	WALL CLEANOUT
WH	WALL HYDRANT
WS	WASTE STACK
YCO	YARD CLEANOUT
Ø	DIAMETER

PLUMBING FIXTURE/EQUIPMENT SCHEDULE

MARK	FIXTURE, MODEL NUMBER AND DESCRIPTION	ROUGH-IN WASTE/ SANITARY	VENT	CW	HW
P1, P1A (TANK OPTION)	WATER CLOSET, ADA-COMPLIANT, TANK TYPE, DUAL FLUSH, FLOOR-MOUNT AND FLOOR-OUTLET, KOHLER HIGHLINE 'CLASSIC FIVE' MODEL K-3989, VITREOUS CHINA ELONGATED BOWL, 1.1GPF/1.6 GPF DUAL FLUSH, 12 INCH ROUGH-IN, WITH CHROME-PLATED METAL SUPPLY & ANGLE STOP, CHURCH 295CT OPEN FRONT SEAT. PROVIDE ALL ITEMS REQUIRED FOR COMPLETE INSTALLATION.	3" OR 4" (2ND FLR), 4" (1ST FLR)	2"	1/2"	--
P1, P1A (PRESSURE-ASSIST FL. VA-TANK OPTION)	WATER CLOSET, ADA-COMPLIANT, TANK TYPE, DUAL FLUSH, FLOOR-MOUNT AND FLOOR-OUTLET, GERBER MODEL DF-21-318, VITREOUS CHINA ELONGATED BOWL, 1.1 GPF/1.6 GPF DUAL FLUSH USING SLOAN ULTRA DUAL-FLUSH FLUSHOMETER-TANK SYSTEM, 12 INCH ROUGH-IN, WITH CHROME-PLATED METAL SUPPLY & ANGLE STOP, CHURCH 295CT OPEN FRONT SEAT. PROVIDE ALL ITEMS REQUIRED FOR COMPLETE INSTALLATION.	3" OR 4" (2ND FLR), 4" (1ST FLR)	2"	1/2"	--
P2, P2A	LAVATORY, ADA-COMPLIANT, WALL-MOUNT, KOHLER KINGSTON MODEL K-2005, VITREOUS CHINA LAVATORY, WITH MFR'S WALL HANGER, PROVIDE SYMMONS 'SCOT' S-20-2-G-FR-W SINGLE EXTRA LONG LEVER FAUCET WITH GRID STRAINER DRAIN, 0.5 GPM FLOW RESTRICTOR; PROVIDE 1-1/2" CHROME PLATED CAST BRASS P-TRAP, SUPPLIES, CHROME-PLATED BRASS ANGLE STOPS WITH LOOSE KEY OPERATION, ETC. FOR COMPLETE INSTALLATION. COORDINATE MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION. PROVIDE TRUEBRO LAVSHIELD ENCLOSURE FOR P2H TYPES, TO CONCEAL PIPING BELOW LAV	1-1/2"	**1-1/2"**	1/2"	1/2"
P3	SHOWER ASSEMBLY, SHOWER ENCLOSURE: AQUATIC '3636TCM, 36"X36" ONE PIECE SHOWER UNIT WITH DRAIN FITTING, SOAP DISH, CURTAIN ROD. SHOWER VALVE: 4-500 SERIES, PRESSURE BALANCING SHOWER VALVE WITH LEVER HANDLE, INTEGRAL CHECK STOPS & VOLUME CONTROL, CHROME PLATED. SHOWER HEAD: BRICOR B100, 1.0 GPM MAX SHOWER HEAD (MIN. 15PSI); PROVIDE TYPE FD-3 SHOWER DRAIN	2"	2"	1/2"	1/2"
P3A	SHOWER ASSEMBLY, ADA COMPLIANT, SHOWER ENCLOSURE: AQUATIC '3636FS, 36"X36" ONE PIECE SHOWER UNIT WITH DRAIN FITTING, SOAP DISH, CURTAIN ROD, ADA L-SHAPED GRAB BAR, L-SHAPED FOLD-UP SEAT. SHOWER VALVE/CONTROLS: SYMMONS MODEL 1-117-FSB-X-1.5, LEVER HANDLE PRESSURE BALANCING MIXING VALVE WITH INTEGRAL CHECK STOPS, CHROMEPLATED; HAND-HELD 1.5 GPM SHOWER ASSEMBLY WITH 30" SLIDE BAR AND 60" HOSE. PROVIDE TYPE FD-3 SHOWER DRAIN.	2"	2"	1/2"	1/2"
P4K-A	ADA COMPLIANT COUNTER-MOUNT 18 GA. TYPE 304 SELF-RIMMING STAINLESS STEEL SINK, ELKAY MODEL LRA2521-5-1/2, 4 HOLES ON 4" CENTERS, WITH REAR OFFSET DRAIN LOCATION. PROVIDE ELKAY MODEL LK-1001CR SINGLE LEVER SWING SPOUT KITCHEN FAUCET WITH HOSE SPRAY, PROVIDE LKAD-35 STRAINER DRAIN WITH OFFSET TAILPIECE. PROVIDE 1.0 GPM FLOW RESTRICTOR ON FAUCET, 1-1/2" CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT, CHROME-PLATED BRASS SUPPLIES WITH ANGLE STOPS, ETC. FOR COMPLETE INSTALLATION. COORDINATE COUNTER HEIGHT WITH ARCHITECT PRIOR TO INSTALLATION. PROVIDE TRUEBRO IPS SOFTGUARD PLUS ASTM E84 PIPE INSULATION KIT FOR EXPOSED PIPING BELOW SINK.	1-1/2"	1-1/2"	1/2"	1/2"
P4D-A	ADA COMPLIANT COUNTER-MOUNT 18 GA. TYPE 304 SELF-RIMMING STAINLESS STEEL SINK, ELKAY MODEL LRA2521-5-1/2, 3 HOLES ON 4" CENTERS, WITH REAR OFFSET DRAIN LOCATION. PROVIDE ELKAY MODEL LK-810GN08T6 GOOSENECK FAUCET (WITH SWING RESTRICTION PIN), 8" CENTERSET WITH 6" WRIST BLADE HANDLES AND 8" SPOUT REACH, PROVIDE LKAD-35 STRAINER DRAIN WITH OFFSET TAILPIECE. INSTALL 1.5 GPM INSERT FACTRY FURNISHED WITH FAUCET. PROVIDE 1-1/2" CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT, CHROME-PLATED BRASS SUPPLIES WITH ANGLE STOPS, ETC. FOR COMPLETE INSTALLATION. COORDINATE COUNTER HEIGHT WITH ARCHITECT PRIOR TO INSTALLATION. PROVIDE TRUEBRO IPS SOFTGUARD PLUS ASTM E84 PIPE INSULATION KIT FOR EXPOSED PIPING BELOW SINK.	1-1/2"	1-1/2"	1/2"	1/2"
P5A	EMERGENCY EYE/FACEWASH FIXTURE, BRADLEY MODEL S19-210BF, GALVANIZED STEEL PIPE BODY PAINTED WITH CORROSION-RESISTANT COATING, CHROME-PLATED CIRCULAR SPRAY RING FOR FULL FACE SPRAY, STAINLESS STEEL EYEWASH BOWL, STAY-OPEN BALL VALVE. PROVIDE EMERGENCY FIXTURE THERMOSTATIC MIXING VALVE (TMV2 - REFER TO TMV SCHEDULE)	1-1/2"	1-1/2"	3/4"HECW OVERHEAD; 1/2"HECW DROPS TO TMV2; 1/2" TEPID (80F) WATER FROM TMV2 TO INLET OF P5H	
P6	MOP SINK, FIAT MSB2424, MOLDED STONE, 24x24x12, SERVICE FAUCET #830-AA, HOSE AND HOSE BRACKET #832-AA, BUMPER GUARD #E-77-AA, SS MOP HANGER #889-CC, MOP SINK DRAIN GASKET #QDC3XH, WALL GUARDS #MSG24, WITH INTEGRAL DRAIN, PROVIDE TRAP, SUPPLIES, STOPS, ETC FOR COMPLETE INSTALLATION.	3"	2"	3/4"	3/4"
HB	HOSE BIBB (UNFINISHED AREAS), WOODFORD MODEL 24, BRONZE BODY, REMOVABLE VALVE SEAT & STEM ASSEMBLY, THREADED END, INTEGRAL VACUUM BREAKER	--	--	3/4"	--
FPHB	FREEZE PROOF HOSE BIBB, WOODFORD MODEL MB67, CAST BRONZE NON-FREEZE WALL HYDRANT WITH STAINLESS STEEL HINGED LOCKING COVER, 3/4"HPT OUTLEST, INTERGRAL DOUBLE CHECK BACKFLOW PREVENTER PRESSURE RELIEF VALVE, AND 3/4" FEMALE & 1" MALE NPT INLER CONNECTION	--	--	3/4"	--
SA	WATER HAMMER ARRESTOR, PRECISION PLUMBING PRODUCTS (PPP) SC SERIES, 1/2"-1", SIZE PER MANUFACTURE RECOMMENDATIONS AND REQUIREMENTS	--	--	1/2"-1"	--
TP	ELECTRIC TRAP PRIMER, PRECISION PLUMBING PRODUCTS (PPP) MP-500 SERIES, CONSISTING OF CIRCUIT BREAKER (MIN. 2 AMP), SWITCH TIMER, SOLENOID VALVE, ANTI-SIPHON ATMOSPHERIC VACUUM BREAKER, 120V, SINGLE PHASE, SURFACE OR RECESSED CABINET BASED ON WALL CONDITIONS (REFER TO DWGS.) COORDINATE ACCESS PANEL FINISH WITH ARCHITECT. COORDINATE NUMBER OF OUTLETS AS REQUIRED BY QUANTITY OF DRAINS. INSTALL PER MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS	--	--	1/2"	--

NOTES:
1. LAVATORY & WATER COOLER SUPPLIES SHALL BE BRASS W/ BRASS ANGLE STOPS FOR 1/2" WATER SUPPLY LINES, W/ LOOSE KEY (W/CAP), AND WALL FLANGE. ALL COMPONENTS SHALL BE POLISHED CHROME FINISH. MANUFACTURER: BRASS CRAFT OR APPROVED EQUAL.

2. CAST BODY 'P' TRAP 1-1/2" x 1-1/2" WITH HEAVY CAST J-BEND & FLAT CLEANOUT PLUG, SLIP NUTS AND WALL FLANGE. ALL COMPONENTS SHALL BE POLISHED CHROME FINISH. MANUFACTURER: BRASS CRAFT OR APPROVED EQUAL.

3. STRAINERS SHALL BE FURNISHED WITH FIXTURES AS REQUIRED. FOR H/C LAVATORY OR SINKS PROVIDE OFFSET TAILPIECE.

4. PROVIDE TRUEBRO LAVSHIELD ENCLOSURE FOR ALL ADA-COMPLIANT LAVATORY INSTALLATIONS. PROVIDE TRUEBRO IPS SOFTGUARD PLUS ASTM E 84 PIPIE INSULATION KIT FOR EXPOSED PIPING BELOW FIXTURE, ALL ADA COUNTERSET SINK INSTALLATIONS.

5. THE PLUMBING FIXTURES VENDOR SHALL COORDINATE WITH THE PLUMBING AND GENERAL CONTRACTOR ALL PLUMBING FIXTURES ROUGH IN DIMENSIONS BEFORE CONSTRUCTION BEGIN.

6. UNLESS SHOWN ABOVE, PLUMBING FIXTURES MANUFACTURER, TRIM COLOR AND FINISH SHALL BE FURNISHED AS DIRECTED BY OWNER/ARCHITECT.

7. REFER TO ARCHITECTURAL DRAWINGS FOR STANDARD AND A.D.A. ADULT AND CHILD MOUNTING HEIGHTS. REFER TO ARCHITECTURAL FOR LOCATION OF A.D.A COMPLIANT SHOWER SEAT AND SHOWER BARS

8. CONTRACTOR TO PROVIDE AN EXTRA 10% OF BATTERIES, AERATORS, CARTRIDGES, ETC.

DRAIN SCHEDULE

MARK	FIXTURE, MODEL NUMBER AND DESCRIPTION	ROUGH-IN TRAP	WASTE	VENT
FD1	FLOOR DRAIN (MECHANICAL ROOM), WATTS FD-320-Y, HEAVY DUTY CAST IRON BODY, BOTTOM OUTLET, 9" DIAMETER CAST IRON TOP, TRAP PRIMER CONNECTION, SEEPAGE PAN AND COMBINATION MEMBRANE FLASHING CLAMP	AS NOTED ON DRWGS.	AS NOTED ON DRWGS.	AS NOTED ON DRWGS.
FD2	FLOOR DRAIN (TOILET ROOM), WATTS FD-100-A5, HEAVY DUTY CAST IRON BODY, BOTTOM OUTLET, 6"X6" SQUARE NICKEL BRONZE TOP, TRAP PRIMER CONNECTION, SEEPAGE PAN AND COMBINATION MEMBRANE FLASHING CLAMP	AS NOTED ON DRWGS.	AS NOTED ON DRWGS.	AS NOTED ON DRWGS.
FD3	SHOWER DRAIN (SHOWER ENCLOSURE), WATTS FD-100-A5-7, HEAVY DUTY CAST IRON BODY, BOTTOM OUTLET, 5" DIAMETER NICKELBRONZE TOP, TRAP PRIMER CONNECTION, SEEPAGE PAN AND COMBINATION MEMBRANE FLASHING CLAMP	AS NOTED ON DRWGS.	AS NOTED ON DRWGS.	AS NOTED ON DRWGS.
TD1	PRE-SLOPED (0.7%) 6" WIDE TRENCH DRAIN, WATTS DEAD LEVEL 'D' SERIES, UV STABILIZED, CHEMICAL RESISTANT INJECTED MOLDED POLYPROPYLENE TRENCH DRAIN WITH DUCTILE IRON FRAME AND 'DI-ADA' DUCTILE IRON ADA COMPLIANT GRATE, LOAD CLASS 'F'. CONSISTS OF (1) 4-FT LONG SLOPED SECTION (DHA) WITH END CAPS, OILY WASTE PIPING SHALL CONNECT TO THE LOW END OF THE SECTION. MFR SHALL FURNISH COMPLETE WITH MOLDED CONSTRUCTION COVERS. CONTRACTOR SHALL COORDINATE THE LOCATION, PROVISION AND INSTALLATION OF ALL CONCRETE CONTROL JOINTS AT ALL TRENCH DRAINS WITH MFR'S BEST RECOMMENDATIONS AND STRUCTURAL ENGINEER'S REQUIREMENTS.	AS NOTED ON THE DRWGS.	AS NOTED ON THE DRWGS.	CDV SYSTEM; REFER TO DRWGS.

NOTES:
1. PROVIDE TRAP PRIMERS FOR ALL DRAINS. DRAINS INCORPORATING A CONSTANT AND REGULAR WASTE ARE NOT REQUIRED TO INTERGRATE TRAP PRIMERS (I.E. SHOWER DRAINS, KITCHEN DRAINS, ETC).

2.TRANSITION COUPLINGS AND NO-HUB PIPE SHALL NOT BE INSTALLED BELOW SLAB OR IN ANY BURIED CONDITIONS IN CONTACT WITH EARTH

THERMOSTATIC MIXING VALVE SCHEDULE

MARK	EQUIPMENT BEING SERVED (I.E. WATER HEATER, ETC...)	AREA SERVED	FLOW RATE @ 10PSI DIFFERENTIAL	MINIMUM FLOW RATE GPM	INLET TEMP.	OUTLET TEMP.	INLET SIZE	OUTLET SIZE	MANUFACTURER MODEL	REMARKS
TMV1	DOM HW SYSTEM	BUILDING	17.00000	1.50000	140F	120F	0'-0 3/4"	0'-1"	BRADLEY CORP. S59-3045	ASSE 1017
TMV2	EMERGENCY EYE/FACEWASH	DECON - P5H	4.50000	1.50000	120F	80F	0'-0 1/2"	0'-0 1/2"	BRADLEY CORP. S19-2000	ASSE 1071

NOTES:
1. MAXIMUM PRESSURE DIFFERENTIAL SHALL BE 10PSI FOR MIXING VALVE

2. WITH DIAL THERMOMETER, ADJUSTABLE SET POINT, INTEGRAL STRAINER CHECKSTOPS ON INLETS, PROVIDE SHUTOFFS/UNIONS AT ALL CONNECTIONS

3. MINIMUM LOW RATE WHEN VALVE IS INSTALLED AT OR NEAR HOT WATER SOURCE WITH RECIRCULATED TEMPERED WATER AND CONTINUOUSLY OPERATING CIRCULATION PUMP.

PUMP SCHEDULE

MARK	LOCATION	SERVICE	PUMP TYPE	FLUID	GPM	HEAD (FT. OF WATER)	ELECTRICAL HP	VOLTAGE	PHASE	RPM	MANUFACTURER MODEL	REMARKS
HWC1	#37 MAIN-2ND FLR	DOM. HW RECIRCULATION	CLOSE COUPLED IN-LINE	DOMESTIC HW	4	12	FRACT.	115V AC	1	3000	BELL & GOSSETT NBF-8S	NSF 372 COMPLIANT BRONZE OR STAINLESS STEEL
SP1 & SP2	#37 BASEMENT #51 BASEMENT	DEWATERING	SUBMERSIBLE EFFLUENT	GROUND WATER	12	22	5/16	115V AC	1	1550	HYDROMATIC V-A1	1/2" SOLIDS, 10 FT POWER CORD; PROVIDE WITH HIGH WATER ALARM AT: #37: KITCHEN #51: EXTERIOR WALL AT EAST DOOR

GAS WATER HEATER SCHEDULE

MARK	MAKE & MODEL	TYPE	STORAGE	RECOVERY @ TEMP. RISE	MIXING VALVE	GAS INLET PRESS.	GAS INPUT (MBH)	REMARKS
GWH1	STATE GTS-540-PH	CONDENSING	TANKLESS		TMV1	8-14 IN. W.C.	199	5.5 GPM AT 70°F RISE
GWH2	STATE GTS-540-PH	CONDENSING	TANKLESS			8-14 IN. W.C.	199	5.5 GPM AT 70°F RISE

NOTES:
1. INSTALL EACH WATER HEATER IN ACCORDANCE WITH BUILDING CODE - PLUMBING & MECHANICAL (WITH LATEST AMENDMENTS) CODES, ENERGY CODE, AND APPLICABLE STANDARDS AND MANUFACTURERS RECOMMENDATIONS.
2. FOR EACH WATER HEATER, PROVIDE BRASS DRAIN VALVE, CPVC FLUE AND PVC VENT PIPING, MANUFACTURER'S CONCENTRIC ROOF TERMINAL, POWER CORD AND CONDENSATE NEUTRALIZER KIT, & ALL REQUIRED OPTIONS TO COMPLETE THE INSTALLATION.
3. PROVIDE MANUFACTURER'S 'EASY-LINK' TO INTERLOCK MULTIPLE HEATER CONTROLS.

Project Title:
Renovation and Addition to
37 & 51 Main Street
Durham, Connecticut 06422

SILVER / PETRUCELLI + ASSOCIATES
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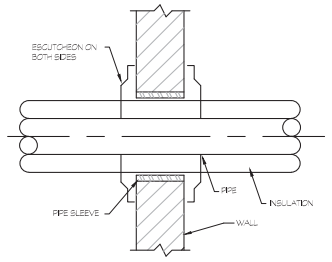
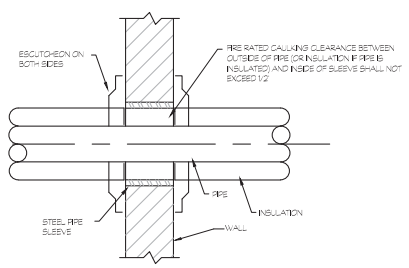
Revision:	Description:	Date:	Revised By:

Drawing Title:
PLUMBING LEGENDS, SCHEDULES AND NOTES

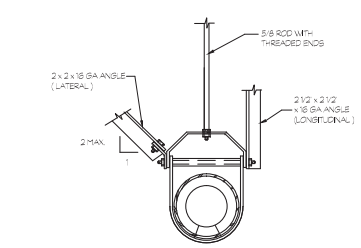
Date: MARCH 23, 2015
Scale: NOT TO SCALE
Drawn By: MBQ
SPA Project Number: 14.131
Drawing Number: P21



8 PIPE PENETRATION DETAIL NON-RATED WALL
NONE



7 PIPE PENETRATION DETAIL -FIRE RATED WALL
NONE



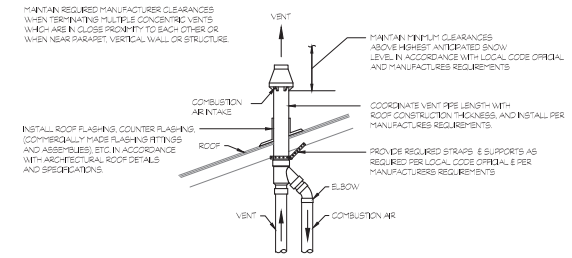
NOTES:

1. PROVIDE LONGITUDINAL AND LATERAL BRACING ON PIPING 2 1/2" AND GREATER (GAS PIPING 1 1/2" AND GREATER AND PIPING IN BOILER AND MECHANICAL ROOMS) 1 1/4" AND GREATER WHERE SUSPENDED 12" OR MORE FROM SUPPORTING STRUCTURE.

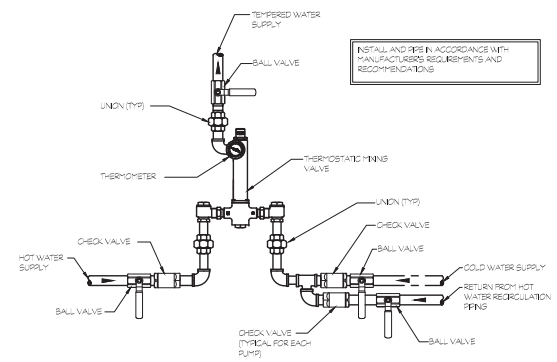
2. PROVIDE SIMILAR BRACING ON ALL DUCTWORK WITH CROSS-SECTIONAL AREA OF 6 SF OR GREATER OR DIAMETER OF 28 IN. OR GREATER WHERE SUSPENDED 12" OR MORE FROM SUPPORTING STRUCTURE.

3. MAKE END CONNECTIONS TO EXISTING STRUCTURAL STEEL WITH 1/2" BOLTS OR TO CONCRETE DECK PER CONNECTION TO CONCRETE DETAIL ABOVE.

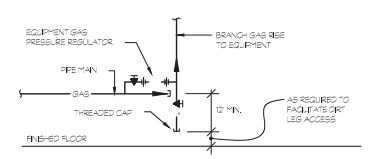
6 PIPE SUPPORT DETAIL
NONE



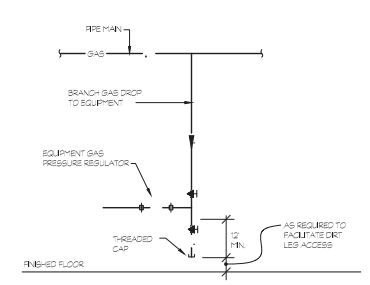
5 CONCENTRIC VENT VERTICAL TERMINATION DETAIL
NONE



4 THERMOSTATIC MIXING VALVE (TMV1) DETAIL
NONE



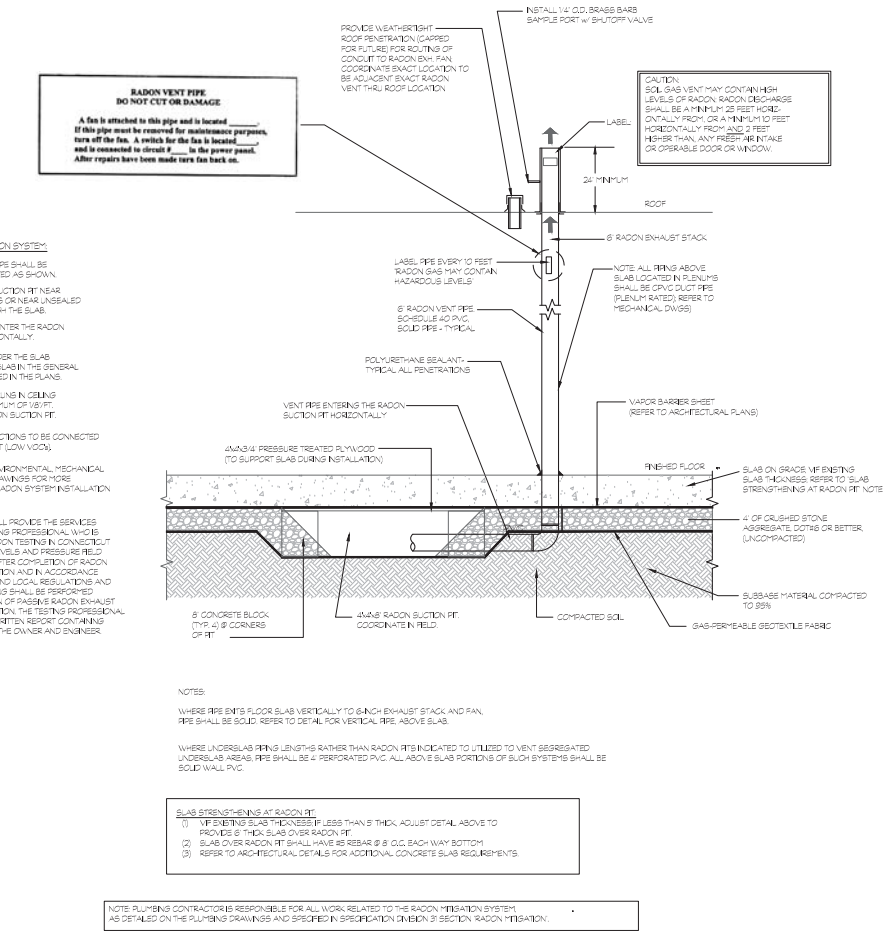
UP FEED TO EQUIPMENT



DOWN FEED TO EQUIPMENT

NOTE: DO NOT LOCATE DIRT LEGS WHERE SUBJECT TO FREEZING. WHERE RISING TO SERVE EQUIPMENT ON ROOF OR OTHER AREA EXPOSED TO FREEZING, LOCATE BASE OF GAS MAIN IN HEATED AREA AND PROVIDE DIRT LEG AT THAT LOCATION.

3 TYPICAL DIRT LEG DETAILS
NONE



GENERAL NOTES RADON SYSTEM:

1. RADON SUCTION PIPE SHALL BE CENTRALLY LOCATED AS SHOWN.
2. DO NOT LOCATE SUCTION PIT NEAR SUBSLAB BARRIERS OR NEAR UNSEALED OPENINGS THROUGH THE SLAB.
3. VENT PIPE SHALL ENTER THE RADON SUCTION PIT HORIZONTALLY.
4. RUN VENT PIPE UNDER THE SLAB AND EXIT THE SUBSLAB IN THE GENERAL LOCATION INDICATED IN THE PLANS.
5. HORIZONTAL PIPE RUNS IN CEILING MUST PITCH A MINIMUM OF 1/8" PIT BACK TO THE RADON SUCTION PIT.
6. ALL PVC PIPING SECTIONS TO BE CONNECTED USING PVC CEMENT (LOW VOCN).
7. REFER TO CIVIL, ENVIRONMENTAL, MECHANICAL AND PLUMBING DRAWINGS FOR MORE INFORMATION ON RADON SYSTEM INSTALLATION REQUIREMENTS.
8. CONTRACTOR SHALL PROVIDE THE SERVICES OF A RADON TESTING PROFESSIONAL WHO IS QUALIFIED FOR RADON TESTING IN CONNECTICUT TO TEST RADON LEVELS AND PRESSURE FIELD EXTENSION (PFE) AFTER COMPLETION OF RADON SYSTEM INSTALLATION AND IN ACCORDANCE WITH EPA, STATE AND LOCAL REGULATIONS AND GUIDELINES. TESTING SHALL BE PERFORMED AFTER COMPLETION OF PASSIVE RADON EXHAUST SYSTEM INSTALLATION. THE TESTING PROFESSIONAL SHALL SUBMIT A WRITTEN REPORT CONTAINING TEST RESULTS TO THE OWNER AND ENGINEER.

NOTES:

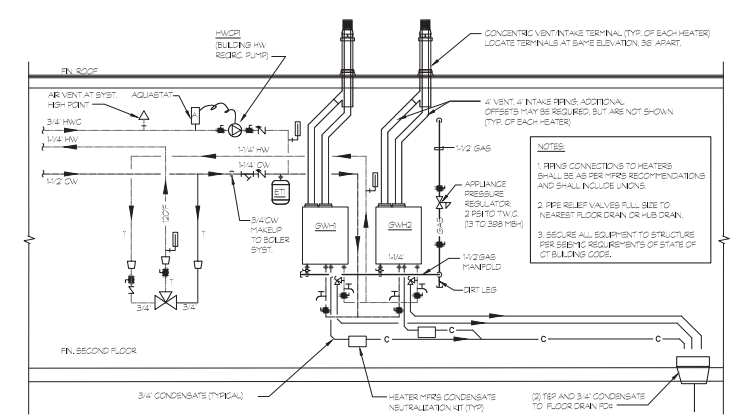
WHERE PIPE EXITS FLOOR SLAB VERTICALLY TO 6 INCH EXHAUST STACK AND FAN, PIPE SHALL BE SOLID. REFER TO DETAIL FOR VERTICAL PIPE ABOVE SLAB.

WHERE UNDERSLAB PIPING LENGTHS RATHER THAN RADON PITS INDICATED TO UTILIZED TO VENT SEGREGATED UNDERSLAB AREAS, PIPE SHALL BE 4" PERFORATED PVC. ALL ABOVE SLAB PORTIONS OF SUCH SYSTEMS SHALL BE SOLID WALL PVC.

SLAB STRENGTHENING AT RADON PIT:
(1) VIF EXISTING SLAB THICKNESS IS LESS THAN 5" THICK, ADJUST DETAIL ABOVE TO PROVIDE 5" THICK SLAB OVER RADON PIT.
(2) SLAB OVER RADON PIT SHALL HAVE #5 REBAR @ 6" O.C. EACH WAY BOTTOM.
(3) REFER TO ARCHITECTURAL DETAILS FOR ADDITIONAL CONCRETE SLAB REQUIREMENTS.

NOTE: PLUMBING CONTRACTOR IS RESPONSIBLE FOR ALL WORK RELATED TO THE RADON MITIGATION SYSTEM AS DETAILED ON THE PLUMBING DRAWINGS AND SPECIFIED IN SPECIFICATION DIVISION 31 SECTION "RADON MITIGATION".

2 RADON SUB-SLAB DEPRESSURIZATION DETAIL
NONE



NOTES:

1. PIPING CONNECTIONS TO HEATERS SHALL BE AS PER HPRS RECOMMENDATIONS AND SHALL INCLUDE UNIONS.
2. PIPE RELIEF VALVES FULL SIZE TO NEAREST FLOOR DRAIN, OR HUB DRAIN.
3. SECURE ALL EQUIPMENT TO STRUCTURE PER SEISMIC REQUIREMENTS OF STATE OF CT BUILDING CODE.

1 DOMESTIC GAS FIRED HOT WATER GENERATION SYSTEM SCHEMATIC DETAIL (GWH1 & GWH2 SYSTEM)
NONE

Project Title:
Renovation and Addition to
37 & 51 Main Street
Durham, Connecticut 06422

SILVER / PETRUCELLI + ASSOCIATES
Architects / Engineers / Interior Designers
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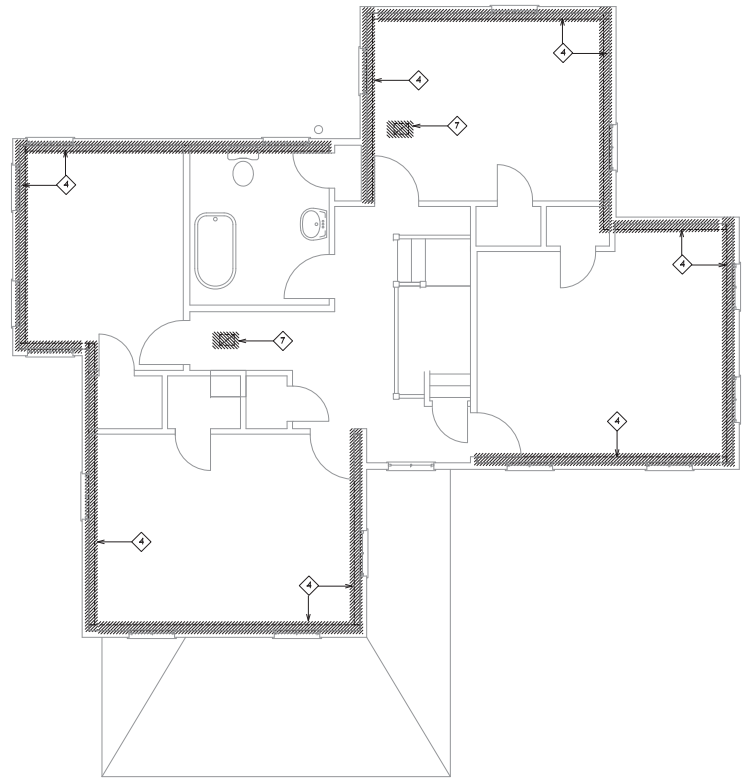
Revision:	Description:	Date:	Revised By:

Drawing Title:
PLUMBING DETAILS

Date: MARCH 23, 2015
Scale: NOT TO SCALE
Drawn By: MBQ
SPA Project Number: 14.131

Drawing Number:
P22



SECOND FLOOR MECHANICAL DEMOLITION PLAN (3 / M01)

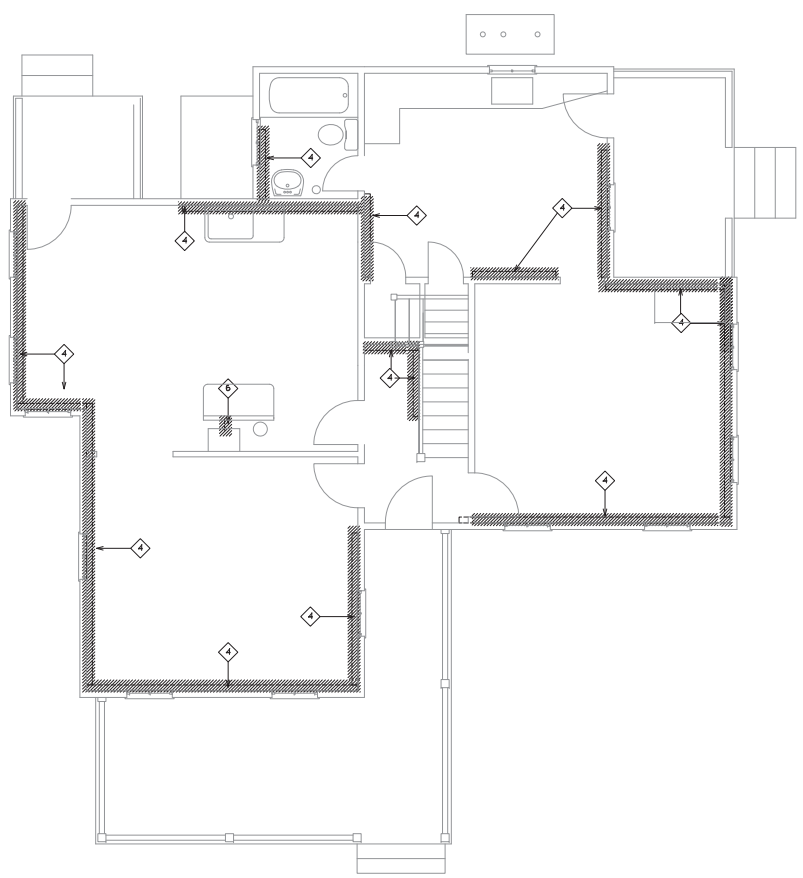
SCALE: 1/4" = 1'-0"

LEGEND

SYMBOL	DESCRIPTION
	EXISTING PIPING, DUCTWORK OR EQUIPMENT TO BE REMOVED
OR	
	EXISTING GRILLE, REGISTER/DIFFUSER TO REMAIN
	EXISTING DUCTWORK, PIPING OR EQUIPMENT TO REMAIN
MD	MOTORIZED DAMPER
FD/AD	FIRE DAMPER W/ ACCESS DOOR
	SUPPLY OR OUTSIDE AIR DUCT UP OR SUPPLY AIR DIFFUSER
	SUPPLY OR OUTSIDE AIR DUCT DOWN
	RETURN OR EXHAUST DUCT UP OR CEILING GRILLE
	RETURN OR EXHAUST DUCT DOWN
	POINT OF CONNECTION
NIC	NOT IN CONTRACT

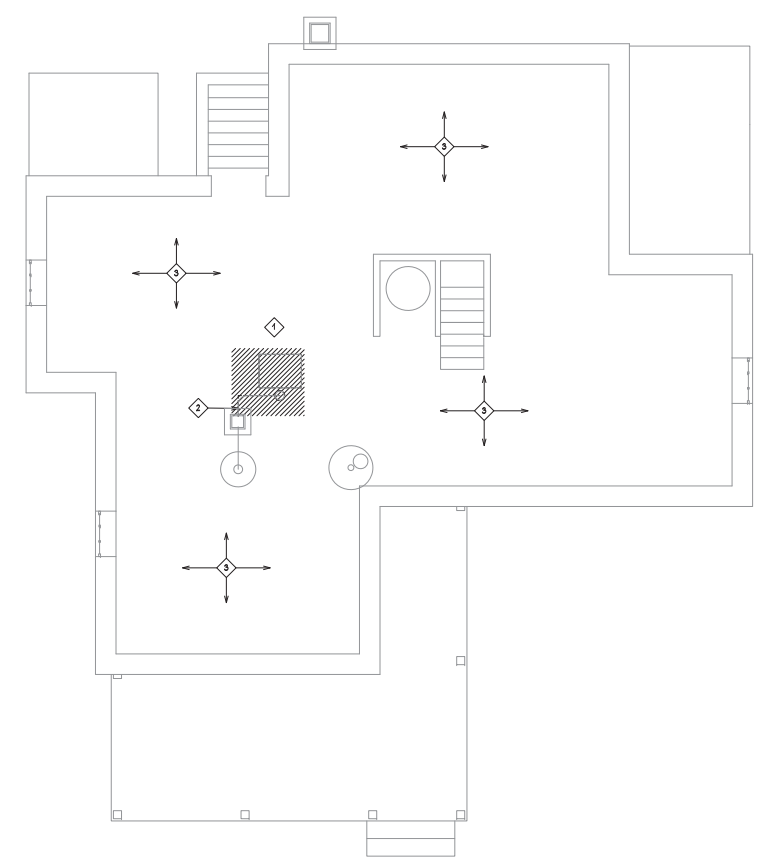
DEMOLITION NOTES

1. REMOVE AND DISPOSE EXISTING OIL FIRED BOILER AND ALL ASSOCIATED OIL PIPING, HOT WATER PIPING, INSULATION AND HANGERS.
2. DISCONNECT FLUE PIPING CONNECTION TO EXISTING CHIMNEY
3. REMOVE AND DISPOSE OF ALL EXISTING HOT WATER SUPPLY AND RETURN PIPING AND ALL ASSOCIATED HANGERS AND INSULATION IN THE BASEMENT FEEDING THE FIRST FLOOR AND SECOND FINNED TUBE RADIATION
4. REMOVE AND DISPOSE OF ALL EXISTING FINNED TUBE RADIATIONELEMENTS, ENCLOSURE/COVER AND ASSOCIATED BRACKETS, VALVES AND CONTROLS
5. EXISTING EXHAUST DUCTWORK AND ASSOCIATED EXHAUST FAN
6. DISCONNECT AND REMOVE EXISTING STOVE FLUE PIPING CONNECTN TO CHIMNEY. PATCH OPENING TO MATCH EXISTING MATERIAL.
7. REMOVE EXISTING FLOOR TRANSFER GRILLE. PATCH OPENING TO MATCH EXISTING FLOORING MATERIAL.



FIRST FLOOR MECHANICAL DEMOLITION PLAN (2 / M01)

SCALE: 1/4" = 1'-0"



FIRST FLOOR MECHANICAL DEMOLITION PLAN (2 / M01)

SCALE: 1/4" = 1'-0"

NORTH

Project Title:

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Revision:	Description:	Date:	Revised By:

Drawing Title: MECHANICAL DEMOLITION PLANS

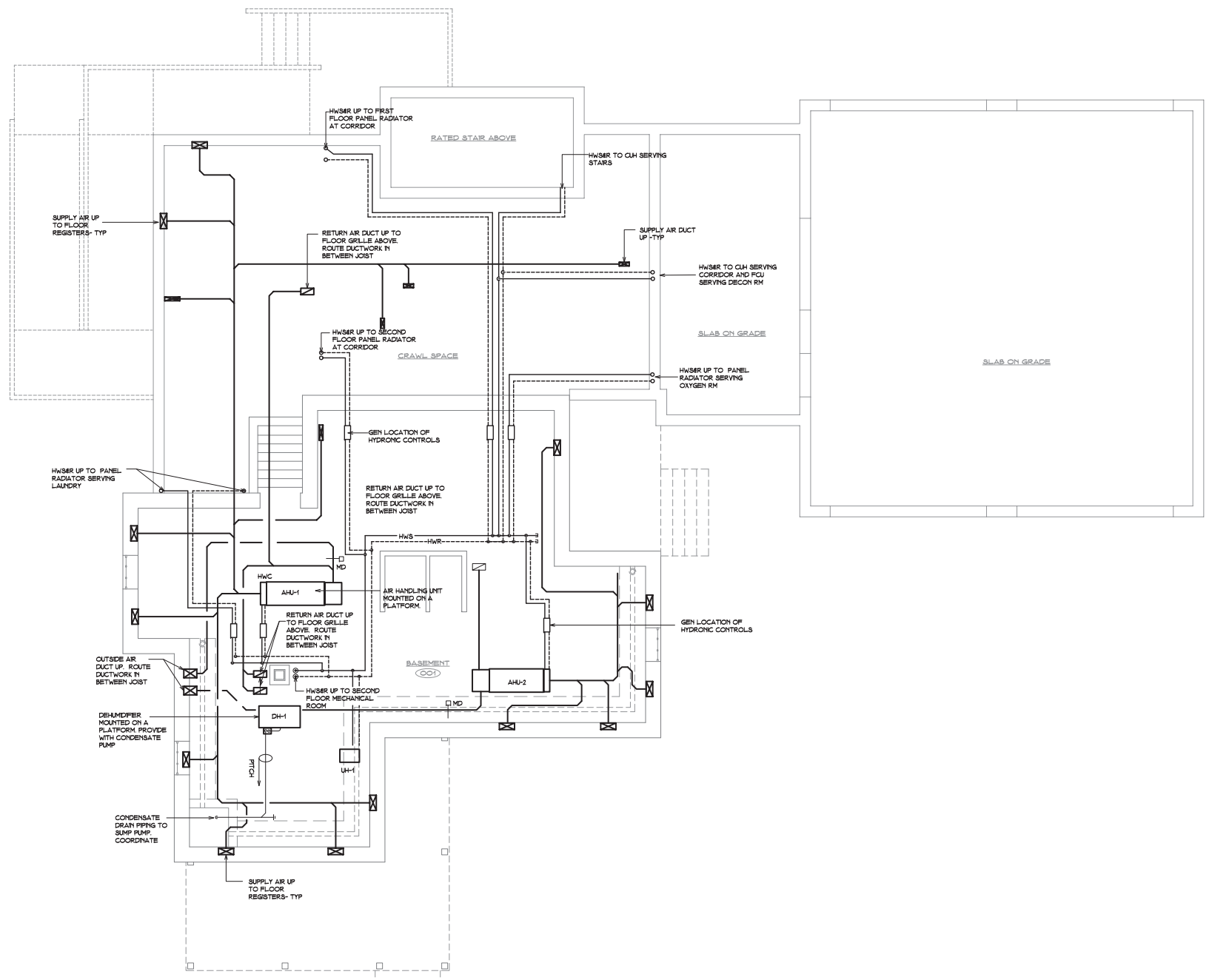
Date: MARCH 23, 2015

Scale: 1/4" = 1'-0"

Drawn By: AMG

SPA Project Number: 14.131

Drawing Number: M01



BASEMENT MECHANICAL PLAN

SCALE: 1/4" = 1'-0"

1
M02

NORTH

Project Title:

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Revision:	Description:	Date:	Revised By:

Drawing Title:

BASEMENT MECHANICAL PLAN
37 MAIN STREET

Date: MARCH 23, 2015

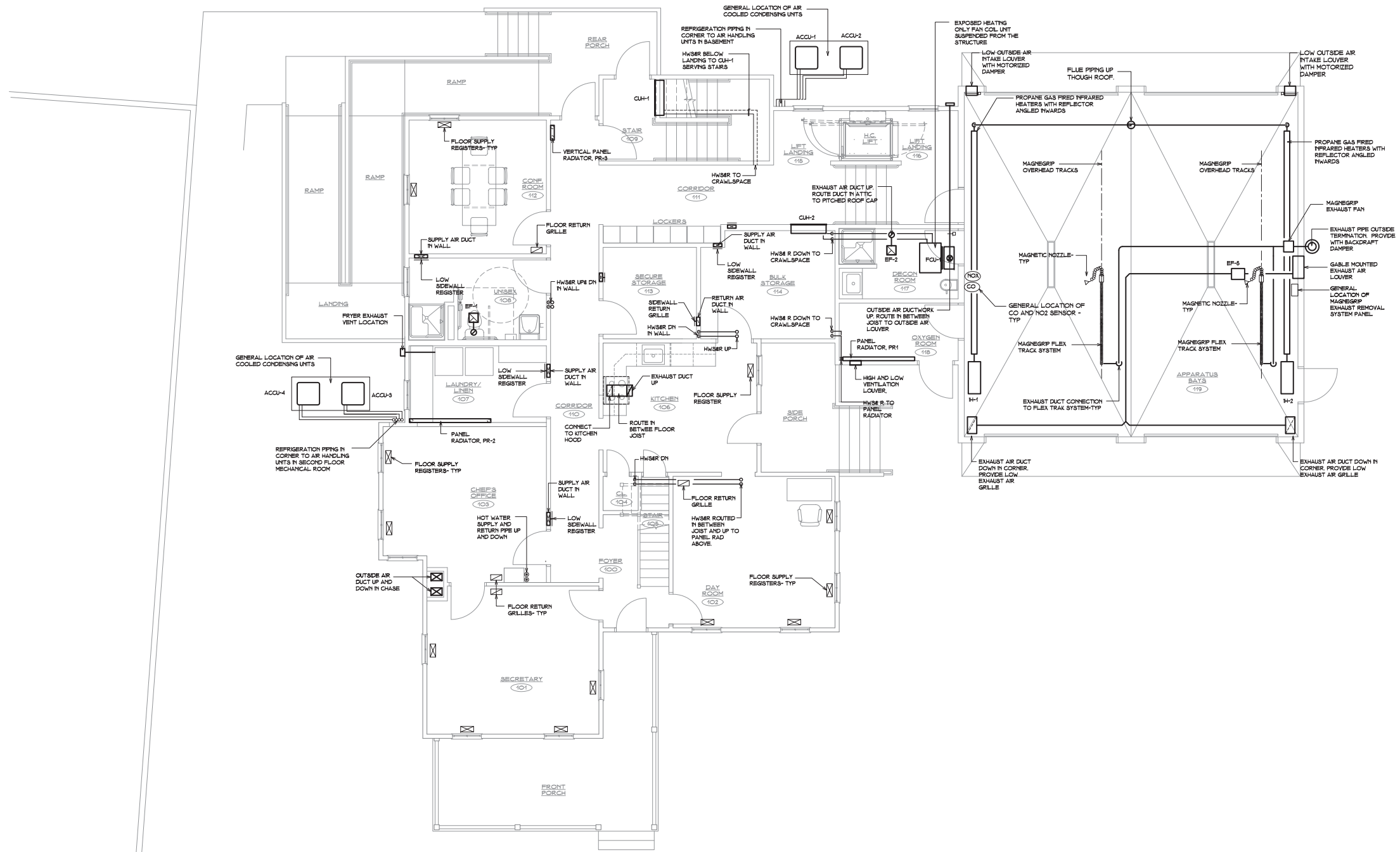
Scale: 1/4" = 1'-0"

Drawn By: AMG

SPA Project Number: 14.191

Drawing Number:

M02



FIRST FLOOR MECHANICAL PLAN

SCALE: 1/4" = 1'-0"

1
M03

NORTH

Project Title:

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Revision:	*Description:*	*Date:*	*Revised By:*

Drawing Title:

1st FLOOR MECHANICAL PLAN
37 MAIN STREET

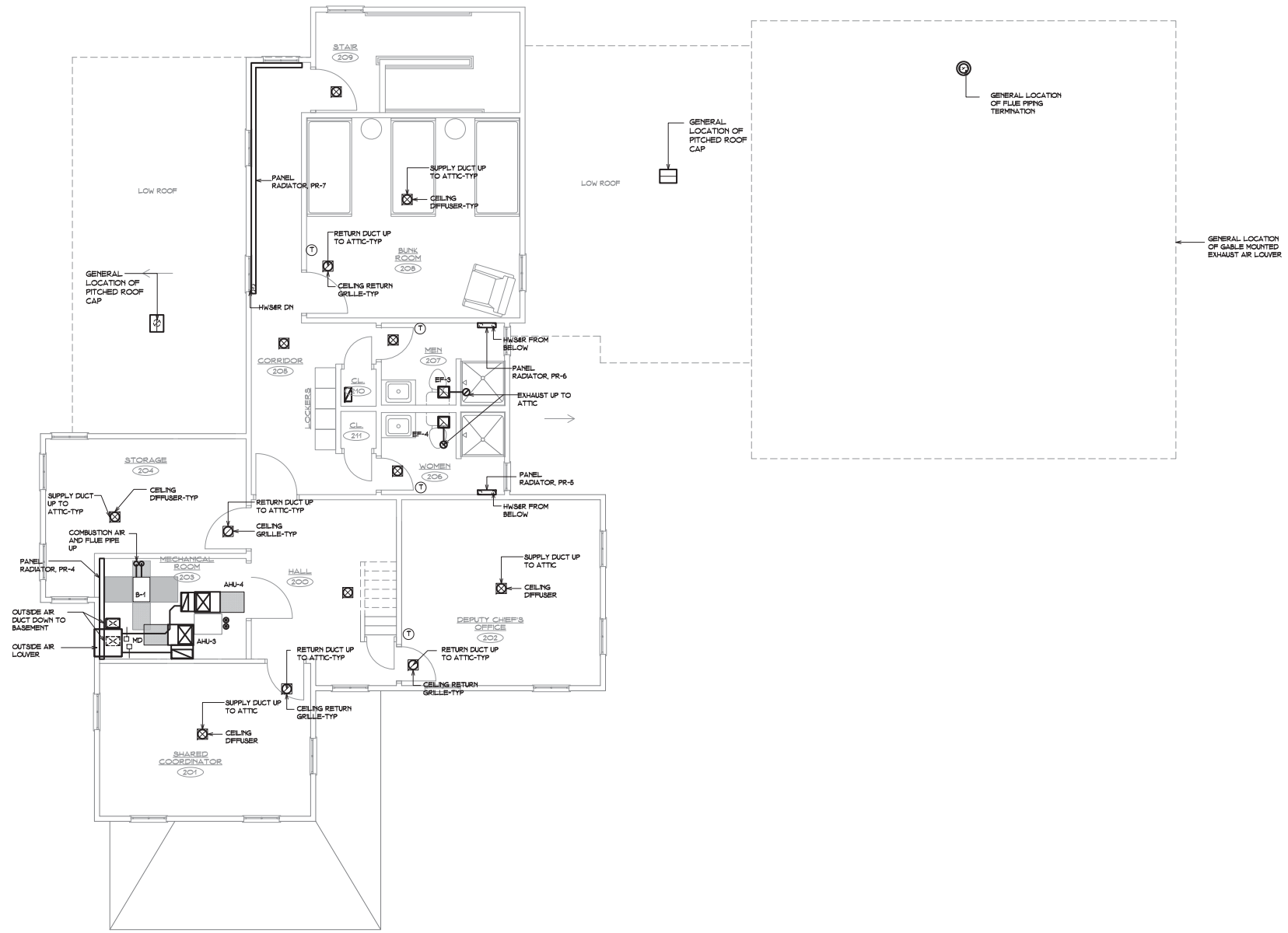
Date: MARCH 23, 2015

Scale: 1/4" = 1'- 0"

Drawn By: AMG

SPA Project Number: 14.131

Drawing Number: M03



SECOND FLOOR MECHANICAL PLAN

1
M04

SCALE: 1/4" = 1'-0"

NORTH

Project Title:

Renovation and Addition to

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Revision:	Description:	Date:	Revised By:

Drawing Title:

2nd FLOOR MECHANICAL PLAN
37 MAIN STREET

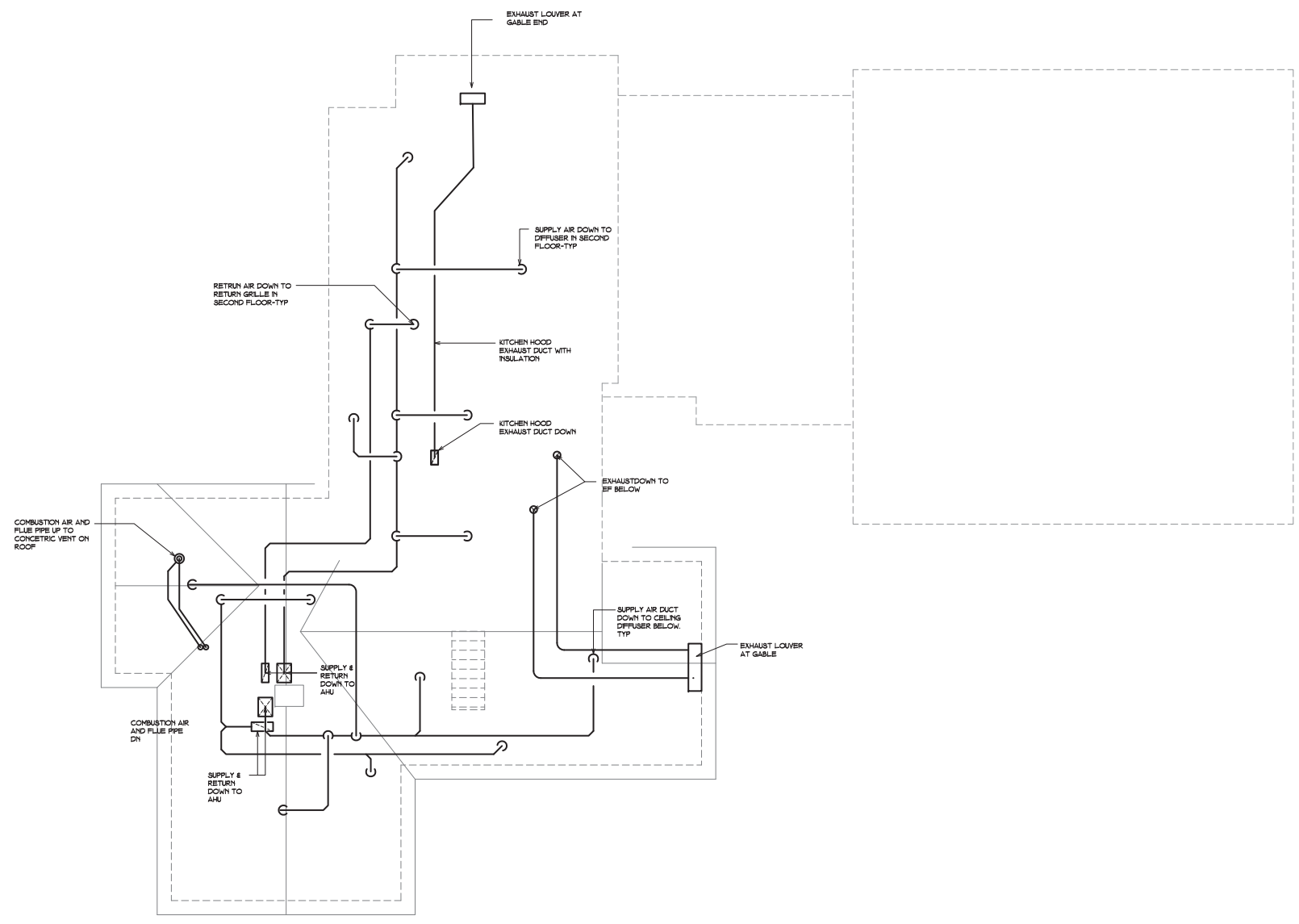
Date: MARCH 23, 2015

Scale: 1/4" = 1'-0"

Drawn By: AMG

SPA Project Number: 14.131

Drawing Number: M04



ATTIC MECHANICAL PLAN

SCALE: 1/4" = 1'-0"

1
M05

NORTH

Project Title:

Renovation and Addition to

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Revision:	Description:	Date:	Revised By:

Drawing Title:

ATTIC MECHANICAL PLAN
37 MAIN STREET

Date: MARCH 23, 2015

Scale: 1/4" = 1' - 0"

Drawn By: AMG

SPA Project Number: 14.131

Drawing Number:

M05

FAN COIL UNIT SCHEDULE

TAG	AREA SERVED	MODEL	ELECTRICAL V-PH-HZ	ELECTRICAL FLA AMP	ELECTRICAL MOTOR TYPE	OUTSIDE AIR CFM	NOMINAL CFM	ESP IN WG	HEATING COIL DATA – HEATING MODE: HEATING CAP (KBTUH)	EAT DB F	LAT DB F	EWT F	LWT F	ROWS	WATER FLOW GPM	PD (FT)	FILTER	REMARKS
FCU-1	OFFICE C117D	IEC CXB-02	115/60/1	2.1	ECO-2	40	350	0.375	119.00	62.2	90-95	180	160	4	1.5	9.7	MERV 8	1 TO 4

REMARKS:
1. SUSPEND FROM STRUCTURE. PROVIDE WITH SEISMIC RESTRANT. PROVIDE WITH RESTAINED SPRING VIBRATION ISOLATOR.
2. HORIZONTAL CEILING EXPOSED. PROVIDE WITH REMOVABLE HINGED RETURN AIR ACCESS PANEL AND OPTIONAL REAR CONNECTION TO BE USED FOR OUTSIDE AIR CONNECTION. COLOR AS SELECTED BY ARCHITECT
3. DISCONNECT SWITCH SHALL BE PROVIDED BY DIVISION 26.
4. REFER TO SPECIFICATION SECTION FOR MORE INFORMATION

EXHAUST FAN SCHEDULE

TAG	AREA SERVED	TYPE	CFM	STATIC PRESS (IN. WG.)	FAN RPM	ELECTRICAL VOLTS/	ELECTRICAL HP	ELECTRICAL OPERATING POWER	MOTOR RPM	MODEL	SONES	NOTES
EF-1	UNISEX TOILET 108	CEILING	150	0.375	1160	115/1	111W	-	-	GC-164	3.7	1,2,3
EF-2	DECON ROOM 117	CEILING	150	0.375	1160	115/1	111W	-	-	GC-164	3.7	1,3,4
EF-3	MENS TOILET 207	CEILING	150	0.375	1160	115/1	111W	-	-	GC-164	3.7	1,2
EF-4	WOMENS TOILET 208	CEILING	150	0.375	1160	115/1	111W	-	-	GC-164	3.7	1,2
EF-5	APPARATUS BAY	IN-LINE	1500	1.0	1160	208/1	-	-	-	SQ-160-VG	3.7	1,7
EF-6	MECHANCAL ROOM	CEILING	150	0.375	1160	115/1	111W	-	-	GC-164	3.7	1,3,4

REMARKS:
1. SUPPORT FROM STRUCTURE. PROVIDE WITH VIBRATION ISOLATION AND SEISMICALLY SUPPORT.
2. PROVIDE CEILING FANS WITH DISCONNECT SWITCH, ALUMINUM INTAKE GRILLE, VIBRATION ISOLATION, BACKDRAFT DAMPER, SOLID STATE SPEED CONTROLLER, INTERLOCK EXHAUST FAN WITH LIGHT SWITCH BY DIV 16.
3. PROVIDE WITH PITCHED ROOF JACK WITH BIRDSCREEN, BACKDRAFT DAMPER AND INTEGRAL FLASHING.
4. PROVIDE CEILING FANS WITH DISCONNECT SWITCH, WHITE ALUMINUM INTAKE GRILLE, VIBRATION ISOLATION, BACKDRAFT DAMPER, SOLID STATE SPEED CONTROLLER, INTERLOCK EXHAUST FAN WITH WALL SWITCH BY DIV 16.
5. PROVIDE DIRECT DRIVE INLINE FANS WITH DISCONNECT SWITCH, FAN HOUSING WITH 0.5 INCH THICK INSULATION, ELECTRONIC COMMUTATION TYPE MOTOR WITH 0-10V CONTROL WIRE INPUT, FACTORY BAKED ENAMEL COATING

SUPPLY DIFFUSER/GRILLE SCHEDULE

TAG	SIZE	NECK SIZE	TYPE	CFM	MAX TOTAL PRESSURE (IN. WG)	MAX NC	MAX NECK VEL (FPPM)	MANUFACTURER & MODEL. NO.	REMARKS
A	6 X 6	6	CEILING DIFFUSER	30-125	0.117	17	400	TITUS MODEL TDC	
B	9 X 9	8	CEILING DIFFUSER	126-209	0.131	22	350	TITUS MODEL TDC	
C			FLOOR MOUNTED	210-450	0.131	22	350	TITUS MODEL CT-480 PPO	
D	-		FLOOR MOUNTED	140-250	0.057	12	350	TITUS MODEL CT-480 PPO	
E	-	-	SIDEWALL REGISTER	-	0.077	23	800	TITUS MODEL 272FS	
AA	12 X12	12 X 12	CEILING GRILLE					TITUS MODEL 355RL	
BB	10 X 6	10 X 6	SIDEWALL GRILLE	UP TO 238	0.031	26	700	TITUS MODEL 355RL	
CC	12X36	12X36	HEAVY DUTY	-	0.031	26	700	TITUS MODEL 33 RS	

REMARKS
1. PROVIDE BORDER FOR SURFACE MOUNT. COORDINATE LOCATION WITH ARCHITECTURAL PLAN.
2. DIFFUSERS AIR PATTERN INDICATED ON PLAN.
3. FURNISH ALL SUPPLY DIFFUSERS AND GRILLES WITH FACE OPERATED DAMPERS IN ADDITION TO VOLUME DAMPERS INDICATED ON PLANS.
4. 45 DOUBLE DEFLECTION ADJUSTABLE BLADES WITH FRONT BLADES PARALLEL TO THE SHORT DIMENSION OF THE REGISTER.
5. DUCT MOUNTED.
6. SIDEWALL MOUNTED. COORDINATE EXACT LOCATION AND ELEVATION WITH ARCHITECTURAL PLANS. PROVIDE WITH INSULATED PLENUM BOX. PAINT INSIDE OD BOX FLAT BLACK

LEGEND: SUPPLY TAG X/CFM — PATTERN: 1-WAY, 2-WAY, 3-WAY, 4-WAY, C-CORNER
RETURN TAG X/CFM

INFRARED HEATER SCHEDULE

(BASED ON MODINE)

SYMBOL	LOCATION	INPUT (MBH)	STRAIGHT TUBE LENGTH (FT)	ELECTRICAL RATING	PROPANE GAS PRESSURE (IN WC) MIN	PROPANE GAS PRESSURE (IN WC) MAX	MANFOLD GAS PRESSURE (IN WC)	GAS CONNECTION (INCH)	TUBE/VENT DIAMETER (INCH)	MODEL	REMARKS
IH-1	APPARATUS BAY	50	20	120V/60HZ/1PH 5.5 AMP	11	14	10	1/2	4	TLP	1 TO 4
IH-2	APPRATUS BAY	50	20	120V/60HZ/1PH 5.5 AMP	11	14	10	1/2	4	TLP	1 TO 4

REMARKS
1. DISCONNECT SWITCH BY DIVISION 26
2. UNIT SHALL BE EQUIPPED WITH PRE-PURGE MODE, DIFFERENTIAL SWITCH AND INDICATOR LIGHT TO PROVIDE PROPER OPERATION OF COMBUSTION AIR BLOWER
3. MANUFACTURER TO PROVIDE 115V/25V CONTROL TRANSFORMER
4. MANUFACTURER TO PROVIDE BRACKETS AND CHAINS

DEHUMIDIFIER SCHEDULE

SYMBOL	LOCATION	MANUFACTURER/ MODEL	ELECTRICAL RATING	BLOWER	WATER REMOVALAT 70 F (PINTS/DAY)	FILTER	DRAIN CONNECTION	WEIGHT (LBS)	REMARKS
DH-1	BASEMENT	HONEYWELLTRUDRYDR90	120V/60HZ/1PH 6.7 AMP	235 CFM AT 0"WG	77	MERV 11	3/4	100	1 TO 4

REMARKS
1. DISCONNECT SWITCH BY DIVISION 26
2. PROVIDE WITH HUMIDISTAT
3. PROVIDE WITH CONDENSATE PUMP
4. PROVIDE WITH POWER CORD 10FT 16/3 SJT WITH 5-15P PLUG

AIR HANDLING UNIT SCHEDULE

TAG	AREA SERVED	MANUFACTURER AND MODEL	ELECTRICAL V-HZ-PH	ELECTRICAL MCA AMP	ELECTRICAL MOCP AMP	ELECTRICAL FLA AMP	ELECTRICAL MOTOR HP	OUTSIDE AIR (CFM) FIRST MIN	OUTSIDE AIR (CFM) MIN AT MAX OCCUPANCY	SUPPLY FAN NOMINAL CFM	SUPPLY FAN ESP IN WG	SUPPLY FAN SYSTEM POWER	DIRECT EXPANSION COIL TC (BTUH)	DIRECT EXPANSION COIL SC (BTUH)	DIRECT EXPANSION COIL EAT F DB/WB	DIRECT EXPANSION COIL LAT F DB/WB	FILTER	DIMENSION L X D X H (INCHES)	WEIGHT (LBS)	REMARKS
AHU-1	FIRST FLOOR OFFICE AREA	CARRIER FE4ANB006	208/230-60-1	5.4	15	4.3	1/2	0	1550	1000	0.7	-	36,000	-	84/72	-	MERV 14	"	175	1 TO 9
AHU-2	DAYROOM	CARRIER FE4ANB006	208/230-60-1	8.5	15	6.8	3/4	0	350	700	0.5	-	24,000	-	84/72	-	MERV 14	"	175	1 TO 9
AHU-3	SECOND FLOOR OFFICES	CARRIER FE4ANB006	208/230-60-1	8.5	15	6.8	3/4	0	350	800	0.7	-	36,000	-	84/72	-	MERV 14	"	175	1 TO 9
AHU-4	BUNK ROOM	CARRIER FE4ANB006	208/230-60-1	8.5	15	6.8	3/4	0	350	700	0.5	-	24,000	-	84/72	-	MERV 14	"	175	1 TO 9

REMARKS:
1. CAPACITY BASED ON THE FOLLOWING OUTSIDE AIR CONDITIONS: SUMMER : 84 F DB/ 73 F WB ; WINTER 7 F
2. PROVIDE WITH ALL UNITS WITH RESTRAINED SPRING VIBRATION ISOLATOR. COORDINATE REQUIREMENTS WITH ISOLATOR MANUFACTURER.
3. MANUFACTURER TO PROVIDE DISCONNECT KIT, HORIZONTAL CONVERSION KIT, ECM MOTOR TEST KIT, AND SINGLE POINT WIRING KIT.
4. REFER TO SPECIFICATION SECTION FOR MORE INFORMATION

AIR COOLED CONDENSING UNIT

TAG	UNIT SERVED	MODEL	CAPACITY NOMINAL TONS	CAPACITY COOLING CAP (MBH)	CAPACITY AMBIENT TEMP DB (F)	CAPACITY EER	ELECTRICAL DATA V-HZ-PH	ELECTRICAL DATA MAX FUSE	ELECTRICAL DATA MCA	CONDENSER FAN MOTOR	COMPRESSOR TYPE/STAGE	COMPRESSOR RLA	COMPRESSOR LRA	REFRIGERANT	REMARKS
ACCU-1	AHU-1	CARRIER 24VNA936	3.0	-	95	-	208/230-60-1	40	24.4	-	SCROLL	18.3	-	R410A	1 TO 6
ACCU-2	AHU-2	CARRIER 24VNA924	2.0	--	95	-	208/230-60-1	40	23.6	-	SCROLL	17.7	-	R410A	1 TO 6
ACCU-3	AHU-3	CARRIER 24VNA936	3.0	-	95	-	208/230-60-1	40	24.4	-	SCROLL	18.3	-	R410A	1 TO 6
ACCU-4	AHU-4	CARRIER 24VNA924	2.0	--	95	-	208/230-60-1	40	23.6	-	SCROLL	17.7	-	R410A	1 TO 6

REMARKS
1. MOUNT ON 4" CONCRETE PAD AS PROVIDED BY DIV. 3
2. DISCONNECT SWITCH BY DIVISION 16.
3. ALL REQUIRED CONTROL AND INTERLOCKING WRING BY CONTROL CONTRACTOR.
4.
5. PROVIDE INTERCONNECTING REFRIGERANT LIQUID AND SUCTION PIPING, REFER TO MANUFACTURER'S MANUAL FOR SIZES BASED ON ROUTING SHOWN ON DRAWING
6. REFER TO SPECIFICATIONS FOR MORE INFORMATION

BOILER SCHEDULE

(BASED ON LOCHINVAR)

TAG	MODEL	INPUT MIN/MAX (MBH)	NET BR (MBH)	TURNDOWN RATIO	AFUE	VOLTAGE/ PH	MAX PROPANE GAS PRESSURE (IN WC)	MANIFOLD GAS PRESSURE (IN WC)	GAS CONNECTION (INCH)	WATER CONNECTION (INCH)	AIR INLET (INCH)	VENT SIZE (INCH)	WEIGHT (LBS)
B-1	KBN-210	42/210	170	5:1	95%	120/1	14	8	1/2	1	3	3	275

REMARKS
1 MOUNT ON A HOUSEKEEPING PAD. PROVIDE WITH DRAIN PAN WITH MOISTURE SENSOR OR FLOAT SWITCH
2 PROVIDE WITH ADJUSTABLE HIGH LIMIT WITH MANUAL RESET.
3 PROVIDE WITH LOW WATER CUTOFF WITH MANUAL RESET AND TEST RESET
4 PROVIDE WITH HIGH AND LOW GAS PRESSURE SWITCHES WITH MANUAL RESET

PUMPS SCHEDULE

(BASED ON ITT)

TAG	SERVICE	ARMSTRONG SERIES	GPM	HEAD (FT)	V/	HP		RPM	SUCTION DIFFUSER	TRIPLE DUTY VALVE	REMARKS
P-1	BOILER-1 PRIMARY PUMP	SUPPLIED BY BOILER MANUFACTURER	-	-	115/1	-		-	-	-	1,6
P-2,3	SYSTEM PUMP	BELL AND GOSSETT XYLEM									
		BELL AND GOSSETT XYLEM	-	40.0	208/1	-		1800	-	-	2,3,4,5

REMARKS
1 SUPPORT FROM STRUCTURE. PROVIDE WITH RESTRAINED SPRING VIBRATION ISOLATOR
2 PROVIDE WITH 4" HOUSEKEEPING PAD.
3 MANUFACTURER PROVIDED INTEGRATED VFD WITH PUMP
4 DISCONNECT SWITCH AS PROVIDED BY DIV. 26.
5 DUAL ARM PUMP. GPM BASED ON 100% OF FULL FLOW. LEAD/LAG CONFIGURATION
6 CONSTANT VOLUME BOILER PUMP PROVIDED BY THE BOILER MANUFACTURER. WATER FLOW IS BASED ON 40 F DISCONNECT SWITCH BY DIV 26
7 CONSTANT VOLUME PUMP. DISCONNECT SWITCH BY DIV 26

HOT WATER UNIT HEATER SCHEDULE

(BASED ON AIREDALE)

SYMBOL	LOCATION	CFM	HEATING CAPACITY (BTUH)	WATER DATA GPM	WATER DATA WPD(FT)	WATER DATA AWT(F)	AIR DATA EAT(F)	AIR DATA LAT(F)	ELECTRICAL VOLT/	ELECTRICAL HP	ELECTRICAL A	MODEL	NOTES
UH-1	BASEMENT	370	15,055	1.6	0.7	170	50	86	115V/1	1/25	1.6	WTC 24S 01	1,2

REMARKS
1. SEISMCALLY SUPPORT
2. FURNISH MOTOR WITH INTERNAL THERMAL OVERLOAD PROTECTION. MANUFACTURER TO PROVIDE DISCONNECT SWITCH.

AIR SEPARATOR SCHEDULE

(BASED ON ITT)

SYMBOL	SERVICE	MODEL NO.	CAPACITY (GPM)	OPENING SIZE (IN)	FLOOD WEIGHT (LBS.)
AS-1	HOT WATER	EAS-1-1/2	50	1-1/2	-

NOTE: PROVIDE WITH BRACKETS AND OVERHEAD SUPPORTS. PROVIDE WITH STRAINER.

STEEL PANEL RADIATORS

(BASED ON RUNTAL)

SYMBOL	MODEL.	CONFIGURATION	DEPTH (INCHES)	HEIGHT (INCHES)	CAPACITY (BTUH/LF)	AWT (F)	EAT (F)	LENGTH	GPM	REMARKS
PR-1	RF-2	-	1.6	5.7	542	170	65	6'-0"	0.5	1 TO 4
PR-2	RF-2	-	1.6	5.7	542	170	65	6'-0"	0.5	1 TO 4
PR-3	RV-4	VERTICAL	1.6	11.5	-	170	65	5'-0"	0.5	1 TO 4
PR-4	RF-2	-	1.6	5.7	542	170	65	6'-0"	0.5	1 TO 4
PR-5	RV-3	VERTICAL	1.6	8.6	-	170	65	5'-0"	0.5	1 TO 4
PR-6	RF-5	VERTICAL	1.6	8.6	-	170	65	5'-0"	0.5	1 TO 4
PR-7	RF-2	-	1.6	5.7	542	170	65	20'-0"	1.5	1 TO 4

REMARKS
1. PROVIDE BRACKETS.
2. PROVIDE WITH FULL COVER, END CAP TRIM AND VERTICAL TRIM AS REQUIRED
3. BASED ON 170 F MEAN WATER TEMPERATURE
4. COLOR AS SELECTED BY THE ARCHITECT FROM STANDARD COLORS

EXPANSION TANK SCHEDULE

(BASED ON ITT)

TAG	SERVICE	VOLUME (GAL.) TANK	VOLUME (GAL.) ACCEPTANCE	DIMENSIONS (INCHES)	WEIGHT (LBS)	MODEL
ET-1	HEATING SYSTEM	45	23.2	20" X 36 H	525	-

NOTE: - PROVIDE WITH HOUSEKEEPING PAD
- CALCULATIONS BASED ON WATER AND 1X GALLON SYSTEM VOLUME. CONTRACTOR TO VERIFY EXACT SIZE BEFORE ORDERING.
- MANUFACTURER SHALL ADVISE ON THE PIPE SIZE CONNECTION TO SYSTEM

Project Title:
Renovation and Addition to
37 & 51 Main Street
Durham, Connecticut 06422

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Revision:	Description:	Date:	Revised By:

Drawing Title: MECHANICAL SCHEDULE 37 MAIN STREET

Date: MARCH 23, 2015
Scale: NONE
Drawn By: AMG
SPA Project Number: 14.131

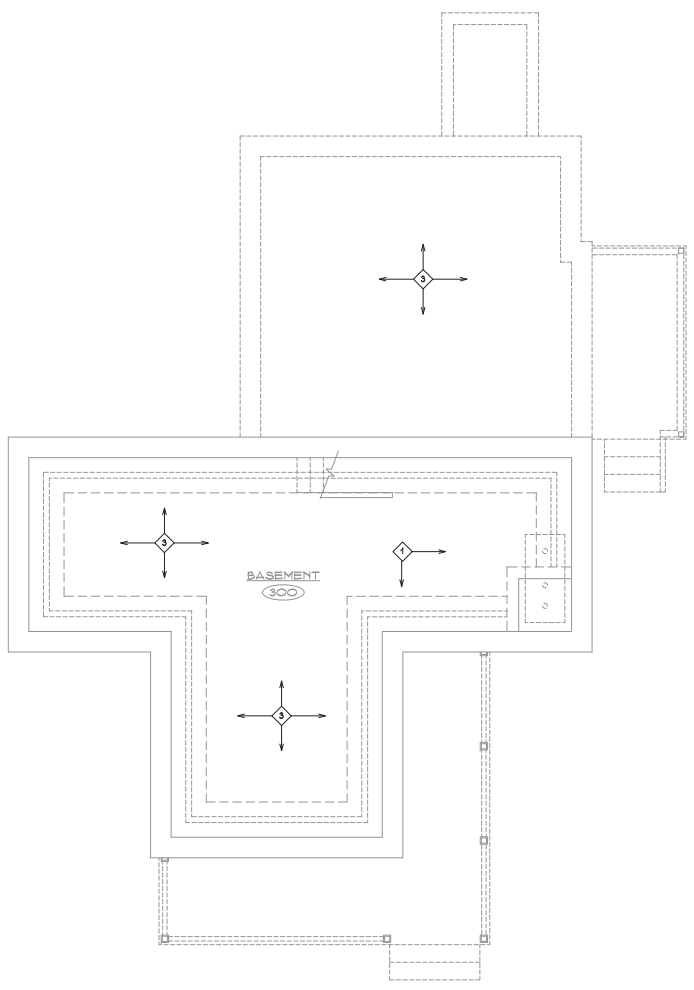
Drawing Number: M06

LEGEND

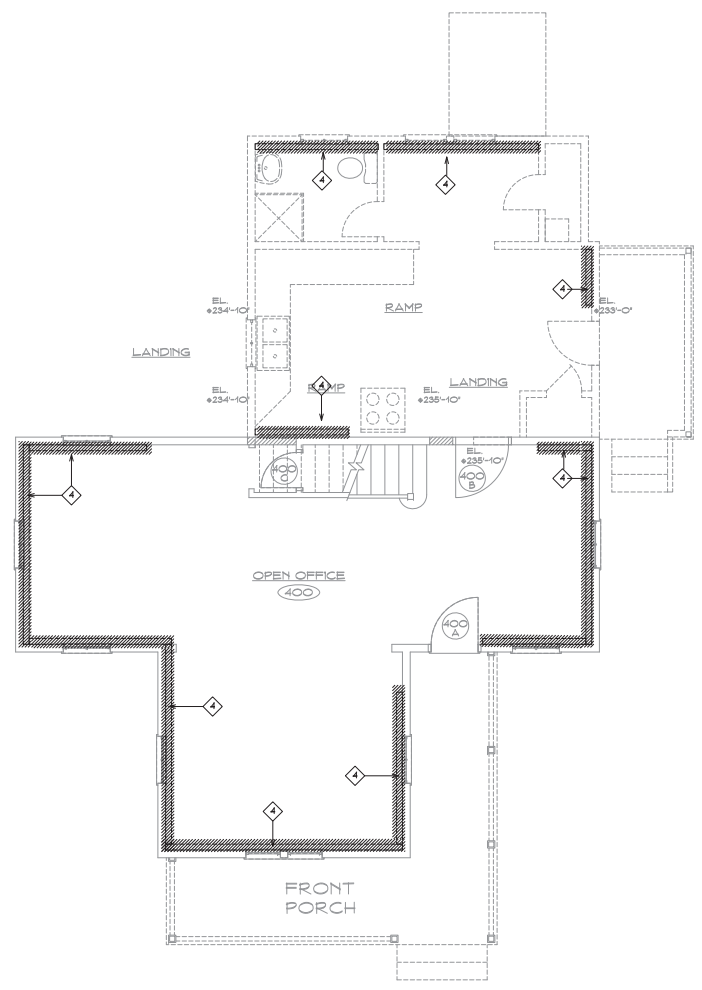
SYMBOL	DESCRIPTION
\X-X-X/ OR	EXISTING PIPING, DUCTWORK OR EQUIPMENT TO BE REMOVED
	EXISTING GRILLE, REGISTER/DIFFUSER TO REMAIN
\------/	EXISTING DUCTWORK, PIPING OR EQUIPMENT TO REMAIN
MD	MOTORIZED DAMPER
FD/AD	FIRE DAMPER W/ ACCESS DOOR
	SUPPLY OR OUTSIDE AIR DUCT UP OR SUPPLY AIR DIFFUSER
	SUPPLY OR OUTSIDE AIR DUCT DOWN
	RETURN OR EXHAUST DUCT UP OR CEILING GRILLE
	RETURN OR EXHAUST DUCT DOWN
	POINT OF CONNECTION
NIC	NOT IN CONTRACT

DEMOLITION NOTES

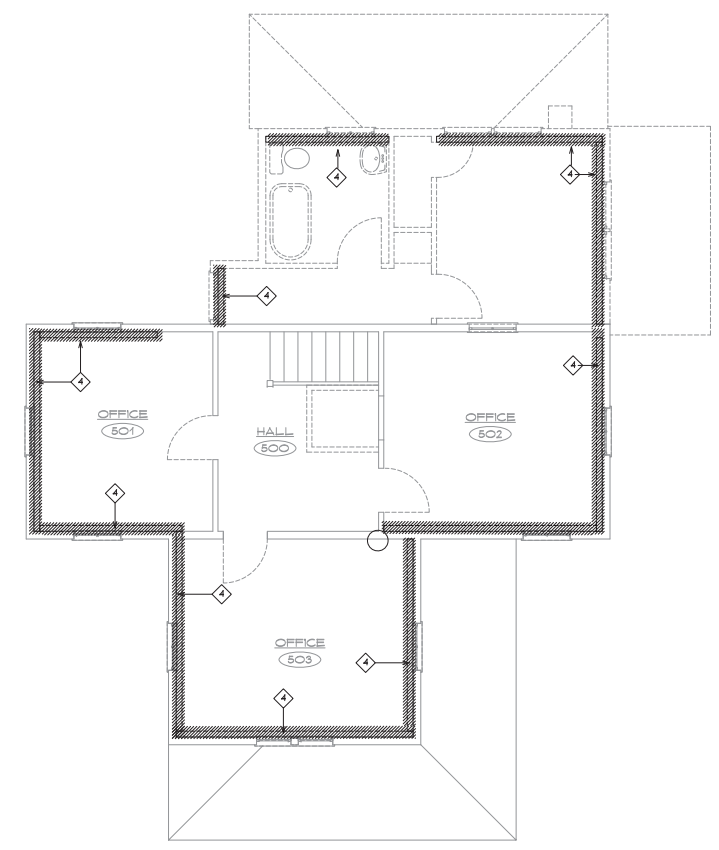
1. REMOVE AND DISPOSE EXISTING OIL FIRED BOILER AND ALL ASSOCIATED OIL PIPING, HOT WATER PIPING, INSULATION AND HANGERS.
2. DISCONNECT FLUE PIPING CONNECTION TO EXISTING CHIMNEY
3. REMOVE AND DISPOSE OF ALL EXISTING HOT WATER SUPPLY AND RETURN PIPING AND ALL ASSOCIATED HANGERS AND INSULATION IN THE BASEMENT FEEDING THE FIRST FLOOR AND SECOND FINNED TUBE RADIATION
4. REMOVE AND DISPOSE OF ALL EXISTING FINNED TUBE RADIATIONELEMENTS, ENCLOSURE/COVER AND ASSOCIATED BRACKETS, VALVES AND CONTROLS
5. EXISTING EXHAUST DUCTWORK AND ASSOCIATED EXHAUST FAN



BASEMENT DEMOLITION PLAN (1 / M07)
SCALE: 1/4" = 1'-0"



MAIN FLOOR DEMOLITION PLAN (2 / M07)
SCALE: 1/4" = 1'-0"



SECOND FLOOR DEMOLITION PLAN (3 / M07)
SCALE: 1/4" = 1'-0"

NORTH

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MECHANICAL
DEMOLITION PLANS
51 MAIN STREET

Date: MARCH 23, 2015
Scale: 1/4" = 1' - 0"
Drawn By: AMG
SPA Project Number: 14.13-1

Drawing Number: M07

EXHAUST FAN SCHEDULE

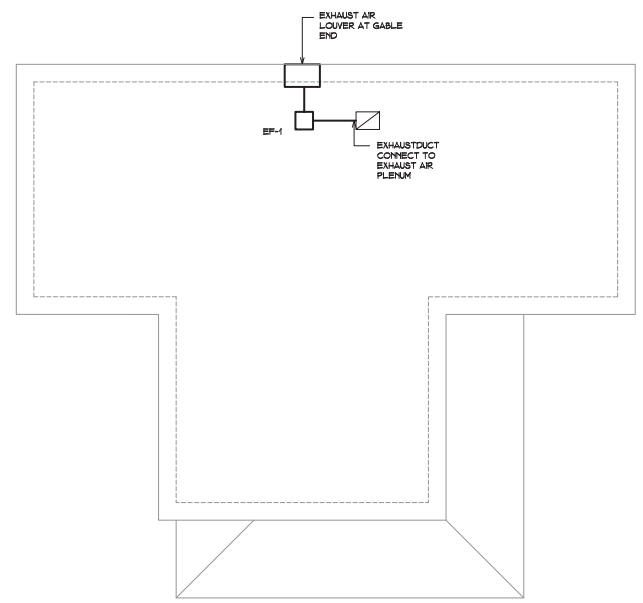
TAG	AREA SERVED	TYPE	CFM	STATIC PRESS (IN. WG.)	FAN RPM	ELECTRICAL VOLTS/	HP	OPERATING POWER	MOTOR RPM	MODEL	SONES	NOTES
EF-1	VENTILATION FAN	IN-LINE	600	0.50	1029	115/1	1/6	-	-	SQ-120	-	1,2,3
SF-1	VENTILATION SUPPLY FAN	IN-LINE	700	0.50	1140	115/1	1/6	-	-	SQ-120	-	1,2,3,4

REMARKS:
1. SUPPORT FROM STRUCTURE. PROVIDE WITH RESTAINED SPRING VBRATION ISOLATION.
2. PROVIDE DIRECT DRIVE INLINE FANS WITH DISCONNECT SWITCH, FAN HOUSING WITH 0.5 INCH THICK INSULATION, SOLID STATE SPEED CONTROLLER, FACTORY BAKED ENAMEL COATING
3. INTERLOCK WITH SPACE MOUNTED THERMOSTAT
4. PROVIDE WITH FILTER.

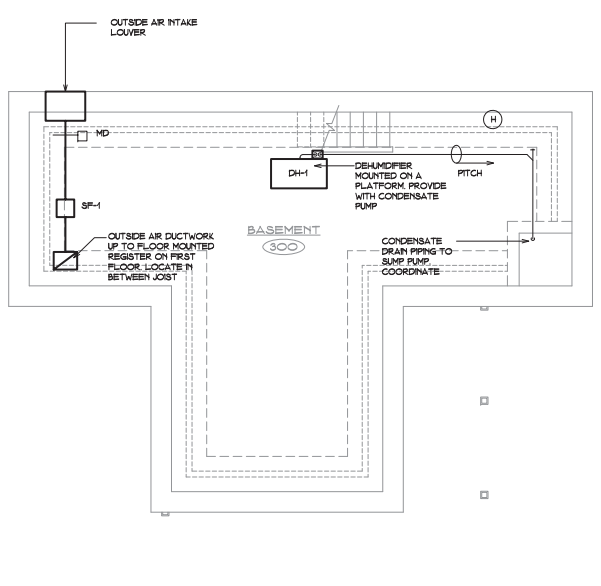
DEHUMIDIFIER SCHEDULE

SYMBOL	LOCATION	MANUFACTURER/ MODEL	ELECTRICAL RATING	BLOWER	WATER REMOVALAT 70 F (PINTS/DAY)	FILTER	DRAIN CONNECTION	WEIGHT (LBS)	REMARKS
DH-1	BASEMENT	HONEYWELL TRUDRYDR90	120V/60HZ/1PH 6.7 AMP	235 CFM AT 0"WG	77	MERV 11	3/4	100	1 TO 4

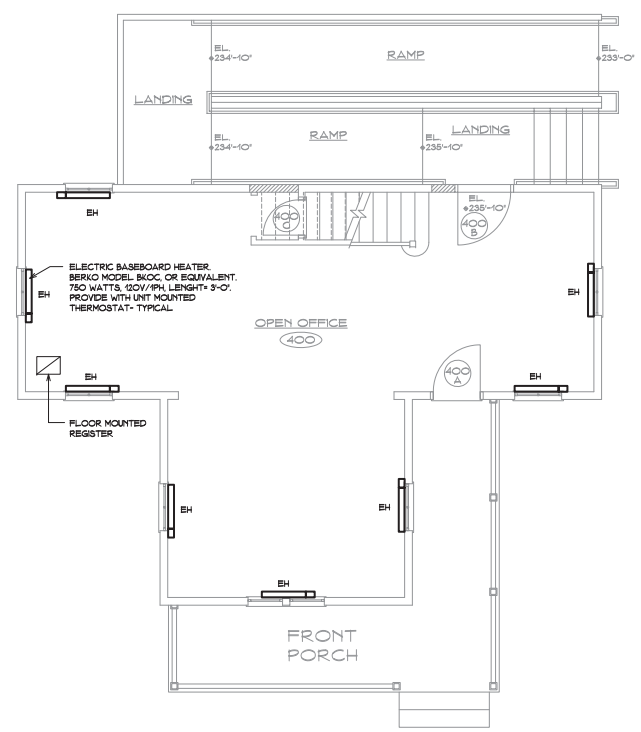
REMARKS
1. DISCONNECT SWITCH BY DIVISION 26
2. PROVIDE WITH HUMIDISTAT
3. PROVIDE WITH CONDENSATE PUMP
4. PROVIDE WITH POWER CORD 10FT 16/3 SJT WITH 5-15P PLUG



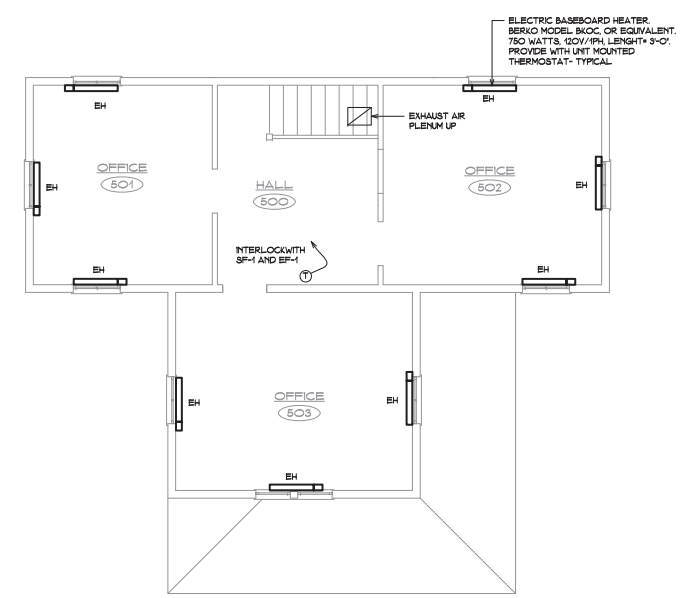
ATTIC FLOOR MECHANICAL PLAN — 4 / M08
SCALE: 1/4" = 1'-0"



BASEMENT MECHANICAL PLAN — 1 / M08
SCALE: 1/4" = 1'-0"



FIRST FLOOR MECHANICAL PLAN — 2 / M08
SCALE: 1/4" = 1'-0"



SECOND FLOOR MECHANICAL PLAN — 3 / M08
SCALE: 1/4" = 1'-0"

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Revision:	Description:	Date:	Revised By:

Drawing Title: MECHANICAL PLANS 51 MAIN STREET

Date: MARCH 23, 2015
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Drawn By: AMG
SPA Project Number: 14.131

Drawing Number: M08

UNIT HEATER SCHEDULE

(BASED ON MODINE)

SYMBOL	LOCATION	INPUT (MBH)	OUTPUT (MBH)	AIR TEMP RISE (DEG F)	ELECTRICAL RATING	PROPANE GAS PRESSURE (IN WC)		MANIFOLD GAS PRESSURE (IN WC)	GAS CONNECTION (INCH)	TUBE/VENT DIAMETER (INCH)	MODEL	REMARKS
						MIN	MAX					
UH-1	GARAGE BAY	100	80	48	120V/60HZ/1PH 5.5 AMP	11	14	10	1/2	-	HDS	1 TO 3

REMARKS

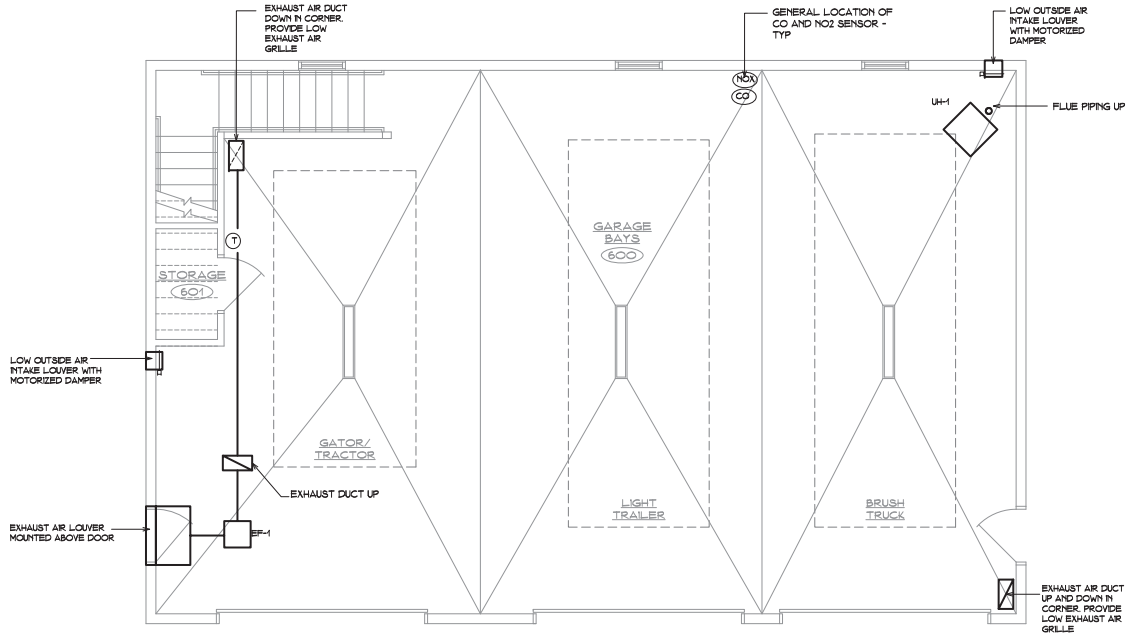
1. DISCONNECT SWITCH BY DIVISION 26
2. MANUFACTURER TO PROVIDE 115V/25V CONTROL TRANSFORMER
3. SUPPORT FROM THE STRUCTURE

EXHAUST FAN SCHEDULE

TAG	AREA SERVED	TYPE	CFM	STATIC PRESS (IN. WG.)	FAN RPM	ELECTRICAL			MOTOR RPM	MODEL	SONES	NOTES
						VOLTS/	HP	OPERATING POWER				
EF-1	MAIN FLOOR	IN-LINE	2250	0.75	-	208/1	1	-	-	SQ-210-VG	-	1,2,3

REMARKS:

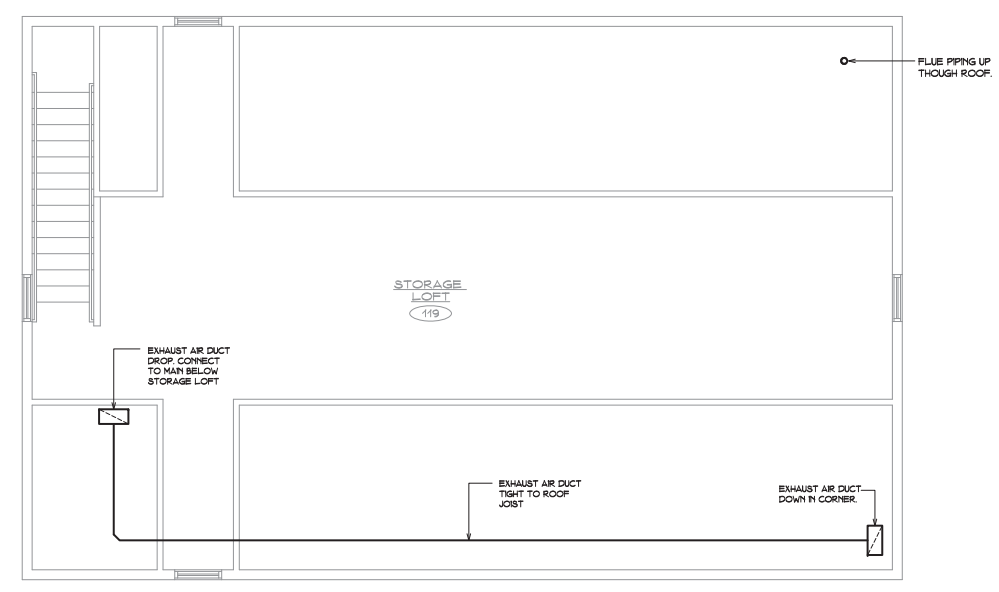
1. SUPPORT FROM STRUCTURE. PROVIDE WITH VIBRATION ISOLATION AND SEISMICALLY SUPPORT.
2. PROVIDE DIRECT DRIVE INLINE FANS WITH DISCONNECT SWITCH, FAN HOUSING WITH 0.5 INCH THICK INSULATION, ELECTRONIC COMMUTATION TYPE MOTOR WITH 0-10V CONTROL WIRE INPUT, FACTORY BAKED ENAMEL COATING
3. INTERLOCK WITH SPACE THERMOSTAT



MAIN FLOOR MECHANICAL PLAN

SCALE: 1/4" = 1'-0"

1 / M09



MEZZANINE FLOOR MECHANICAL PLAN

SCALE: 1/4" = 1'-0"

2 / M09

NORTH

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Revision:	Description:	Date:	Revised By:

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CARRIAGE HOUSE
MECHANICAL PLAN
51 MAIN STREET

Date: MARCH 23, 2015

Scale: 1/4" = 1' - 0"

Drawn By: AMG

SPA Project Number: 14.131

Drawing Number:

M09

GENERAL NOTES

GENERAL:

1. WHEN A CONFLICT BETWEEN THE DRAWINGS, NOTES AND/OR SPECIFICATIONS OCCUR, THE MORE STRINGENT, AND/OR LARGER QUANTITY AND/OR MORE EXPENSIVE SHALL APPLY. THE REQUIREMENTS LISTED WITHIN NOTES OR SPECIFICATIONS SHALL BE REQUIRED, PROVIDED AND INSTALLED WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR NOT.

WIRING & RACEWAY:

1. THE DRAWINGS SHOW THE GENERAL LAYOUT AND TYPICAL DETAILS. PROVIDE COMPLETE SYSTEMS. DRAWINGS ARE BASED ON THE SPECIFIED EQUIPMENT. RACEWAY LAYOUTS, BOXES, AND WIRING OF THE SYSTEMS ARE SUBJECT TO APPROVED SHOP DRAWINGS.
2. ENSURE THAT ITEMS TO BE FURNISHED FIT THE SPACE AVAILABLE. MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS, AND PROVIDE SUCH SIZES AND SHAPES OF EQUIPMENT THAT FINAL INSTALLATION SHALL SATISFY THE INTENT OF THE DRAWINGS AND SPECIFICATIONS.
3. LOCATIONS OF OUTLETS, SWITCHES, APPLIANCES, ETC. AS SHOWN ON ELECTRICAL PLANS ARE APPROXIMATE; COORDINATE WITH ARCHITECTURAL AND MECHANICAL PLANS AND DETAILS, AND WITH JOB CONDITIONS. INSTALL SWITCHES WITH 'OFF' POSITION DOWN. INSTALL RECEPTACLES WITH GROUNDING POLE IN THE UP POSITION FOR VERTICAL MOUNTING AND AT RIGHT FOR HORIZONTAL MOUNTING.
4. LOCATE AND INSTALL ELECTRICAL EQUIPMENT, JUNCTION AND PULL BOXES, PANELBOARDS, SWITCHES, CONTROLS, AND OTHER APPARATUS REQUIRING MAINTENANCE, INSPECTION, AND OPERATION SO AS TO BE READILY ACCESSIBLE.

RACEWAY INSTALLATION:

1. IN ALL ARCHITECTURALLY FINISHED SPACES, CONDUITS AND CABLES SHALL BE RUN CONCEALED IN HUNG OR FURRED CEILINGS, SLABS, MASONRY, AND PARTITIONS UNLESS OTHERWISE INDICATED. SAW CUTTING AND FINISHED PATCHING SHALL BE REQUIRED IN EXISTING SLABS AND MASONRY WALLS. IN UNFINISHED SPACES, RACEWAYS MAY BE RUN EXPOSED.
2. UNLESS OTHERWISE INDICATED, EXACT ROUTING OF RACEWAYS SHALL BE DETERMINED BY THE CONTRACTOR TO SUIT PROJECT REQUIREMENTS AND FIELD CONDITIONS.
3. PROVIDE SEPARATE RACEWAYS, JUNCTION BOXES, PULL BOXES AND WIREWAYS FOR ALL EMERGENCY SYSTEM WIRING.

WIRING INSTALLATION:

1. DO NOT USE WIRE SMALLER THAN NO. 12 AWG FOR ANY POWER OR LIGHTING CIRCUIT. USE LARGER SIZES WHERE INDICATED, AS REQUIRED BY CODES, AND AS FOLLOWS:

30 AMPERE CIRCUIT:	NO. 10
40 AMPERE CIRCUIT:	NO. 8
50 AMPERE CIRCUIT:	NO. 6
60 AMPERE CIRCUIT:	NO. 6

A. MINIMUM HOMERUN AND BRANCH CIRCUIT WIRING SIZES AND MAXIMUM HOMERUN CONDUIT FILL FOR 120 VOLT, 20 AMPERE CIRCUITS SHALL BE AS FOLLOWS:

LENGTH	CIRCUIT WIRE SIZE	HOME RUN WIRE SIZE	CONDUIT SIZE (8 WIRES/CONDUIT)
0' TO 50'	#12	#12	3/4"
51' TO 100'	#12	#10	3/4"
101' TO 200'	#10	#8	1"

GREATER THAN 200' - REQUEST DIRECTION FROM ARCHITECT.

NOTE: PROVIDE DERATING PER CODE WHEN INSTALLING MORE THAN 3 CURRENT CARRYING CONDUCTORS IN CONDUIT.

2. DO NOT USE WIRE SMALLER THAN NO. 14 AWG FOR CONTROL CIRCUITS UNLESS OTHERWISE RECOMMENDED BY THE EQUIPMENT OR SYSTEM MANUFACTURER ON WIRING SHOP DRAWINGS, AND SO APPROVED BY THE ARCHITECT.
3. WHERE GREATER THAN THREE (3) CURRENT-CARRYING CONDUCTORS ARE INSTALLED IN ANY ONE CONDUIT OR CABLE, CONDUCTORS MUST BE DERATED AND SIZES INCREASED, IF NEEDED, TO ACCOMMODATE CONDUCTOR DERATING AS REQUIRED BY NEC ARTICLE 310.
4. CONDUCTORS SHALL BE COMPLETELY INSTALLED AND CONNECTED. PROVIDE ALL TERMINALS, LUGS, AND CONNECTORS TO SUIT THE APPLICATION, AND IN COMPLIANCE WITH EQUIPMENT MANUFACTURERS' RECOMMENDATIONS.
5. UNDER NO CIRCUMSTANCES SHALL ANY SWITCH OR CIRCUIT BREAKER BREAK A NEUTRAL CONDUCTOR.
6. THE CIRCUIT NUMBERS INDICATED ON THE DRAWINGS ARE INTENDED AS A GUIDE FOR PROPER CONNECTION OF CIRCUITS AT PANELS. HOWEVER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE FINAL CIRCUITING WORK FULFILLS THE FOLLOWING CONDITIONS:

A. LOADS ON PANEL BUSSES SHALL BE PHASE-BALANCED AS EVENLY AS POSSIBLE.

GROUNDING INSTALLATION:

1. EQUIPMENT GROUNDING

A. INSTALL AN INSULATED GROUND CONDUCTOR, RUN IN THE RACEWAY WITH THE PHASE CONDUCTORS, FOR EACH FEEDER SERVING: PANELBOARDS, LIGHTING DIMMER BOARDS, MOTOR CONTROL CENTERS, MOTORS, EQUIPMENT AND APPLIANCES UNLESS OTHERWISE NOTED.

B. INCLUDE AN INSULATED GROUND CONDUCTOR IN ALL CONDUIT RUNS CONTAINING SECTIONS OF FLEXIBLE CONDUIT UNLESS OTHERWISE NOTED.

C. INCLUDE AN INSULATED GROUND CONDUCTOR IN ALL BRANCH CIRCUIT RACEWAYS OR CABLES UNLESS OTHERWISE NOTED.

2. TELECOMMUNICATIONS CLOSET GROUNDING

A. PROVIDE A #4 AWG GROUND CONDUCTOR RISER IN 1" EMT CONDUIT TO EACH TELECOMMUNICATIONS CLOSET GROUNDING BUSBAR (TGB) FROM THE TELECOMMUNICATIONS MAIN GROUNDING BUSBAR (TMGB), AND TO MAIN SERVICE GROUNDING ELECTRODE SYSTEM.

B. CONNECT THE GROUND RISER TO TMGB AND TGB'S PER TIA/EIA STANDARD 607 - 1994.

C. PROVIDE ADDITIONAL #4 AWG GROUND CABLE CONNECTIONS FROM EACH TMGB AND TGB TO THE CLOSEST BUILDING STEEL, AND TO THE GROUND BUS IN THE ELECTRIC PANEL FEEDING THE OUTLETS AND EQUIPMENT IN THE ASSOCIATED TELECOMMUNICATIONS ROOM/CLOSET.

3. GROUND EACH TELECOMMUNICATIONS, FIRE ALARM, SECURITY, AND BMS SYSTEM EQUIPMENT AND CONTROL PANEL WITHIN EACH TELECOMMUNICATIONS ROOM/CLOSET TO THE ASSOCIATED CLOSET TMGB OR TGB WITH A #4 AWG CONDUCTOR PER TIA/EIA STANDARD 607 - 1994.

RACEWAYS FOR TELECOMMUNICATION SYSTEMS:

1. PROVIDE EMPTY CONDUIT SYSTEMS FOR TELECOMMUNICATION WORK, COMPLETE WITH PULL BOXES, OUTLET BOXES, AND CONDUIT AS INDICATED ON THE DRAWINGS.
2. PROVIDE MINIMUM INSIDE BENDING RADIUS OF 10 TIMES CONDUIT INSIDE DIAMETER FOR TELECOMMUNICATIONS RACEWAYS.
3. WHEN COMPLETED THE CONDUIT SYSTEMS SHALL BE READY FOR THE INSTALLATION OF WIRING AND EQUIPMENT.
4. FROM EACH OUTLET PROVIDE A 1" EMPTY EMT CONDUIT ROUTED INTO THE CEILING CAVITY OR TO THE CLOSEST TELECOMMUNICATIONS CLOSET. PROVIDE A DRAG LINE IN EACH RUN AND TERMINATE IN A BUSHED ELBOW.

MECHANICAL EQUIPMENT WIRING:

1. UNLESS OTHERWISE INDICATED OR SPECIFIED HEREIN, ALL MOTORS, MOTOR STARTERS, MOTOR CONTROLLERS, VARIABLE SPEED/FREQUENCY DRIVES, AND ASSOCIATED CONTROL DEVICES ARE FURNISHED AND INSTALLED UNDER THIS DIVISION. COORDINATE INSTALLATION AND LOCATIONS WITH OTHER DIVISION CONTRACTORS.
2. POWER WIRING FROM THE INDICATED SOURCE TO THE STARTER/CONTROLLER/DRIVE UNIT, AND FROM THE STARTER/CONTROLLER/DRIVE UNIT TO THE MOTOR, INCLUDING ANY LOCAL DISCONNECT SWITCHES PROVIDED AND INSTALLED BY THIS DIVISION, AND ALL ASSOCIATED LUGS, TERMINALS, AND CONNECTIONS, IS THE WORK OF THIS DIVISION.
3. CONTROL CIRCUIT WIRING IS GENERALLY FURNISHED AND INSTALLED UNDER OTHER DIVISIONS, EXCEPT THAT ANY SUCH WIRING SHOWN ON ELECTRICAL DRAWINGS IS WORK OF THIS DIVISION.
4. PROVIDE 120 VOLT POWER TO ALL TEMPERATURE CONTROL PANELS (TCP'S) SUPPLIED AND INSTALLED BY HVAC CONTRACTOR. USE EMERGENCY POWER SOURCES WHEN AVAILABLE. COORDINATE ALL POWER REQUIREMENTS AND PANEL LOCATIONS WITH TEMPERATURE CONTROLS CONTRACTOR.
5. COOPERATE AND COORDINATE WITH THE OTHER TRADES IN THE INSTALLATION, CONNECTION, AND TESTING OF MECHANICAL EQUIPMENT. PERFORM WORK OF THIS SECTION IN ACCORDANCE WITH EQUIPMENT MANUFACTURERS' INSTRUCTIONS.

COORDINATION DRAWINGS:

1. DEVELOP AND SUBMIT COORDINATION DRAWINGS AS OUTLINED.

A. SHEET METAL, PLUMBING AND FIRE PROTECTION SHOP DRAWINGS THAT HAVE BEEN COORDINATED WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW. DRAWINGS MUST BE RETURNED FROM ENGINEER EITHER 'REVIEWED' OR 'FURNISH AS CORRECTED' PRIOR TO BEING USED AS BASIS FOR COORDINATION DRAWINGS.

B. AFTER SHEET METAL AND PIPING DRAWINGS HAVE BEEN REVISED PER ENGINEERS COMMENTS, REPRODUCIBLE COPIES SHALL BE SENT TO THE TRADES IN THE FOLLOWING SEQUENCE FOR THE INCLUSION OF THEIR WORK:

- -MECHANICAL SHEET METAL
- -PLUMBING PIPING
- -MECHANICAL PIPING
- -SPRINKLER PIPING
- -ELECTRICAL WORK

2. AFTER ALL TRADES HAVE INCLUDED THEIR WORK ON THE COORDINATION DRAWING AND NOTED CONFLICTS, ALL TRADES SHALL MEET TO RESOLVE CONFLICTS AND AGREE TO ACCEPTABLE SOLUTIONS. EACH TRADE SHALL SIGN COORDINATION DRAWINGS. ITEMS NOT SHOWN ON COORDINATION DRAWING IS RESPONSIBILITY OF OMITTING CONTRACTOR AND CONTRACTOR IS SUBJECT TO ADDITIONAL COSTS INCURRED BY OTHER TRADES.
3. THE ARCHITECT AND ENGINEER ARE NOT PART OF THE COORDINATION DRAWING PROCESS. THE ENGINEER WILL PROVIDE ASSISTANCE FOR NOTED CONFLICTS ONLY. COORDINATION DRAWINGS ARE NOT TO BE CONSIDERED PIPING OR DUCT SHOP DRAWINGS. THE CONTRACTOR IS REQUIRED TO SUBMIT INDIVIDUAL PIPING AND DUCTWORK SHOP DRAWINGS FOR REVIEW BY THE ENGINEER. PIPING AND DUCTWORK SHOP DRAWINGS SHALL FOLLOW THE DESIGN INTENT OF THE CONTRACT DOCUMENTS.
4. SUBMIT FINAL SIGNED COORDINATION DRAWING TO ENGINEER FOR REVIEW. ENGINEER WILL REVIEW COORDINATION DRAWINGS FOR GENERAL ARRANGEMENT AND FOR NOTED CONFLICTS ONLY. SPECIFIC INSTALLATION REQUIREMENTS WILL BE REVIEWED ONLY IN INDIVIDUAL TRADE SHOP DRAWINGS.
5. ANY WORK FABRICATED OR INSTALLED PRIOR TO SIGN OFF BY ALL TRADES WHICH IS DEEMED TO BE IN CONFLICT WITH COORDINATION DRAWINGS SHALL BE REMOVED AND RE-INSTALLED IN CONFORMANCE WITH COORDINATION DRAWINGS.
6. EACH CONTRACTOR (MENTIONED ABOVE) IS RESPONSIBLE FOR THE COORDINATION OF HIS SUB-CONTRACTORS.
7. THE OVERALL COORDINATION OF THE COORDINATION PROCESS IS THE RESPONSIBILITY OF THE CONTRACTOR. THE ENGINEER IS NOT RESPONSIBLE FOR THE COORDINATION PROCESS. THE ENGINEER WILL RESPOND TO QUESTIONS THAT ARISE FROM THE COORDINATION PROCESS. DRAWINGS SUBMITTED WILL BE REVIEWED FOR CLEARLY IDENTIFIED CONFLICTS ONLY. SOLUTIONS TO CONFLICTS WILL NOT BEAR ADDITIONAL COST.

AS BUILT DRAWINGS:

1. PROVIDE A COMPLETE SET OF AS-BUILT DRAWINGS REFLECTING AS INSTALLED CONDITIONS. AS-BUILT DRAWINGS SHALL INDICATE ALL INSTALLED CONDITIONS OF SYSTEMS WITHIN THIS DISCIPLINE. DRAWINGS SHALL BE OF SIMILAR SCALE AS THE CONSTRUCTION DOCUMENTS AND INCLUDE DETAILS AS NECESSARY TO CLEARLY REFLECT THE INSTALLED CONDITION. DRAWINGS SHALL BE BOUND IN A COMPLETE AND CONSECUTIVE SET. SUPPLEMENTAL SKETCHES AND LOOSE PAPERWORK WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR REVISION. THE CONTRACTOR SHALL COMPLY WITH THE ENGINEERS COMMENTS TO PRODUCE A CLEAR AND CONCISE SET OF DRAWINGS. DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC (AUTO-CAD VERSION AS REQUIRED BY THE OWNER) VERSION. NUMBER OF COPIES OF EACH AS REQUESTED BY THE OWNER.
2. PROVIDE 'AS-BUILT DRAWINGS' INDICATING IN A NEAT AND ACCURATE MANNER A COMPLETE RECORD OF ALL REVISIONS OF THE ORIGINAL DESIGN OF THE WORK. INDICATE THE FOLLOWING INSTALLED CONDITIONS:

A. INCLUDE ALL CHANGES AND AN ACCURATE RECORD, ON REPRODUCTIONS OF THE CONTRACT DRAWINGS OR APPROPRIATE SHOP

B. DRAWINGS, OF ALL DEVIATIONS, BETWEEN THE WORK SHOWN AND WORK INSTALLED.

C. EQUIPMENT LOCATIONS (EXPOSED AND CONCEALED), DIMENSIONED FROM PROMINENT BUILDING LINES.

D. APPROVED SUBSTITUTIONS, CONTRACT MODIFICATIONS, AND ACTUAL EQUIPMENT AND MATERIALS INSTALLED.

E. CONTRACT MODIFICATIONS, ACTUAL EQUIPMENT AND MATERIALS INSTALLED.

F. SUBMIT FOR REVIEW BOUND SETS OF THE REQUIRED DRAWINGS, MANUALS AND OPERATING INSTRUCTIONS.

G. SUBMIT A COMPLETE MAINTENANCE MANUAL OF ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT.

ELECTRICAL LEGEND

(NOT ALL SYMBOLS ARE USED)

- DISTRIBUTION PANEL, 480/277 VOLT
- ELECTRICAL PANEL, 480/277 VOLT
- ELECTRICAL PANEL, 120/208 VOLT
- PANELBOARD FLUSH MOUNTED
- PANELBOARD SURFACE MOUNTED
- NON-FUSED DISCONNECT SWITCH
- FUSED DISCONNECT SWITCH
- WALL MOUNTED JUNCTION BOX, ACCORDING TO NEC REQUIREMENTS
- CEILING MOUNTED JUNCTION BOX, ACCORDING TO NEC REQUIREMENTS
- MOTOR STARTER, COORDINATE EXACT REQUIREMENTS WITH MOTOR FURNISHED
- RECESSED LIGHT FIXTURE; LETTER INDICATES FIXTURE TYPE
- RECESSED LIGHT FIXTURE WITH INTEGRAL BATTERY BALLAST FOR 90 MINUTE EMERGENCY LIGHTING
- TYPICAL RECESSED FLUORESCENT TROFFER; LETTER INDICATES FIXTURE TYPE
- RECESSED FLUORESCENT LIGHT FIXTURE W/INTEGRAL BATTERY BALLAST FOR 90 MINUTE EMERGENCY LIGHTING
- RECESSED HIGH EFFICIENCY GLARE CONTROL FIXTURE; LETTER INDICATES FIXTURE TYPE
- TYPICAL SURFACE MOUNTED FLUORESCENT FIXTURE; LETTER INDICATES FIXTURE TYPE
- TYPICAL PENDANT/CHAIN HUNG FLUORESCENT FIXTURE; LETTER INDICATES FIXTURE TYPE
- WALL MOUNTED FIXTURE; LETTER INDICATES FIXTURE TYPE
- WALL MOUNTED FIXTURE WITH INTEGRAL BATTERY BALLAST FOR 90 MINUTE EMERGENCY LIGHTING
- WALL MOUNTED SCONCE FIXTURE, WITH EMERGENCY BATTERY BALLAST, 1400 LUMENS
- CEILING MOUNTED EXIT SIGN, SHADING INDICATES DIRECTION OF FIXTURE FACE, ARROW INDICATES DIRECTION OF CHEVRON, PROVIDE UNSWITCHED POWER FROM AREA LIGHTING CIRCUIT
- WALL MOUNTED EXIT SIGN, INSTALL AT 7'-6" AFF OR ON EXISTING LOCATION
- DOUBLE FACE EXIT SIGN
- FLOOR PROXIMITY EXIT SIGN, INSTALL BETWEEN 8" & 1'-8" AFF
- TWIN HEAD EMERGENCY LIGHT WITH INTEGRAL BATTERY FOR 90 MINUTE EMERGENCY LIGHTING
- SINGLE POLE SWITCH; MOUNT AT 48" AFF
- 3-WAY SWITCH; MOUNT AT 48" AFF
- 4-WAY SWITCH; MOUNT AT 48" AFF
- DUAL TECHNOLOGY, MOTION SENSOR SWITCH; MOUNT AT 48" AFF
- DIMMING SWITCH; MOUNT AT 48" AFF, COMPATIBLE WITH LOAD CONTROLLED
- KEYED SINGLE POLE OR 3-WAY SWITCH; MOUNT AT 48" AFF
- OIL BURNER SHUT-OFF SWITCH
- SINGLE POLE SWITCH WITH PILOT LIGHT
- DUPLEX RECEPTACLE; MOUNT AT 18" AFF UNLESS OTHERWISE SPECIFIED
- SINGLE RECEPTACLE; MOUNT AT 18" AFF UNLESS OTHERWISE SPECIFIED
- QUAD RECEPTACLE; MOUNT AT 18" AFF UNLESS OTHERWISE SPECIFIED
- GROUND FAULT INTERRUPTING DUPLEX RECEPTACLE; MOUNT AT 18" AFF UNLESS OTHERWISE SPECIFIED
- RECEPTACLE WITH OUTDOOR RATED COVER PLATE; PROVIDE FLUSH MOUNTED BOX
- SPECIAL OUTLET CONFIGURATION, SEE NEMA #
- CEILING MOUNTED DUPLEX RECEPTACLE; PROVIDE FLUSH MOUNTED BOX
- FLOOR MOUNTED RECEPTACLE; SEE SPECIFICATION FOR DETAILS
- FLUSH OUTLET BOX FOR WALL MOUNTED TELEPHONE, MOUNTED 48" AFF OR AT HEIGHT INDICATED ON PLAN WITH 1" CONDUIT TO 6" ABOVE ACCESSIBLE CEILING.
- TELEPHONE JACK LOCATION. PROVIDE 4" SQUARE BOX, 1-GANG RING AND 1" CONDUIT TO 6" ABOVE ACCESSIBLE CEILING.
- DATA OUTLET, 4" X 4" OUTLET BOX WITH A 1-GANG COVER, MOUNT 18" AFF OR AT HEIGHT INDICATED ON PLAN WITH 1" CONDUIT TO 6" ABOVE ACCESSIBLE CEILING. DX = NUMBER OF DATA OUTLETS.
- VOICE/DATA OUTLET, 4" X 4" OUTLET BOX WITH A 1-GANG COVER, MOUNT 18" AFF OR AT HEIGHT INDICATED ON PLAN WITH 1" CONDUIT TO 6" ABOVE ACCESSIBLE CEILING. VX/DX = NUMBER OF VOICE/DATA PORTS.
- FLUSH OUTLET BOX FOR CEILING MOUNTED DATA OUTLET. PROVIDE 4" SQUARE BOX, 1-GANG RING AND 1" CONDUIT TO 6" ABOVE ACCESSIBLE CEILING.
- 8" RECESSED CEILING SPEAKER WITH BACKBOX, TILE BRIDGE & BAFFLE
- WALL MOUNTED INDOOR/OUTDOOR PA SYSTEM SPEAKER, MOUNT 8'-6" AFF OR 8" BELOW CEILING
- TV COAXIAL JACK LOCATION. PROVIDE NEW JACK & COAXIAL CABLE TO HEADEND EQUIPMENT ALONG WITH ADJACENT DUPLEX RECEPTACLE. COORDINATE REQUIREMENT OF JACK & CABLE WITH OWNER AND SYSTEM INSTALLER. SEE ALSO CATV SYSTEM NOTES AND DETAIL ON DRAWING
- EQUIPMENT TAG
- ELECTRICAL ALARM BELL, FOR DRY AND WET CONDITIONS
- CALL-FOR-AID CORRIDOR LIGHT/BUZZER, MOUNT AT 7'-6" AFF
- CALL-FOR-AID SWITCH, MOUNT AT 36" AFF WITH PULL CORD HANGING DOWN TO 6" AFF
- BRANCH CIRCUIT HOMERUN (VOLTAGE, BRANCH CIRCUIT POLES)
- CEILING MOUNTED OCCUPANCY SENSOR (PASSIVE INFRARED TYPE) WITH 360° COVERAGE
- CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR (ULTRASONIC/PASSIVE INFRARED TYPE) WITH 360° COVERAGE
- CEILING MTD DUAL TECHNOLOGY OCCUPANCY SENSOR (ULTRASONIC/PASSIVE INFRARED TYPE) W/180° COVERAGE
- FIRE ALARM MANUAL PULL STATION - 48"AFF U.O.N.
- FIRE ALARM SPEAKER/STROBE - 80"AFF U.O.N.
- FIRE ALARM STROBE LIGHT - 80"AFF U.O.N.
- SMOKE DETECTOR
- HEAT DETECTOR
- DUCT MOUNTED IONIZATION SMOKE DETECTOR
- SMOKE DAMPER (FURNISHED AND INSTALLED BY HVAC CONTRACTOR). PROVIDE ADDRESSABLE FIRE ALARM RELAY AND ALL REQUIRED WIRING FOR CONTROL OF SMOKE DAMPERS IN ADDITION TO 120V CONNECTION
- FIRE/SMOKE DAMPER (FURNISHED AND INSTALLED BY HVAC CONTRACTOR). PROVIDE ADDRESSABLE FIRE ALARM RELAY AND ALL REQUIRED WIRING FOR CONTROL OF SMOKE DAMPERS IN ADDITION TO 120V CONNECTION
- FIRE ALARM MAGNETIC DOOR HOLD OPEN
- FIRE ALARM CONTROL PANEL
- FIRE ALARM REMOTE ANNUNCIATOR PANEL

ABBREVIATIONS

A	AMPERES
AFF	ABOVE FINISHED FLOOR
C	CONDUIT
C/B	CIRCUIT BREAKER
CKT	CIRCUIT
DIA	DIAMETER
EC	ELECTRICAL CONTRACTOR
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EX	EXISTING TO REMAIN
REM	EXISTING TO BE REMOVED
HT	HEAT TRACE
JB	JUNCTION BOX
M/B	MAIN BREAKER
MLO	MAIN LUG ONLY
MTD	MOUNTED
PNL	PANELBOARD
RELOC	RELOCATE/RELOCATED AT THE SAME HEIGHT (PER NEC REQUIREMENTS)
U.O.N.	UNLESS OTHERWISE NOTED
WP	WEATHERPROOF

DEMOLITION AND REMOVALS

1. COMPARE THE PLANS WITH THE EXISTING CONDITIONS TO DETERMINE THE AMOUNT OF WORK AFFECTED. REMOVE ALL UNUSED EXPOSED CIRCUIT WORK, OUTLETS, FIXTURES AND THE LIKE NOT REQUIRED BY THE ALTERATIONS.
2. ALL MATERIALS REQUIRED TO BE REMOVED AND NOT REINSTALLED UNDER THIS DIVISION OF THE WORK, UNLESS OTHERWISE INDICATED, SHALL BECOME THE PROPERTY OF THE CONTRACTOR, AND SHALL BE REMOVED FROM THE SITE.
3. WHERE FEEDERS AND BRANCH CIRCUITS OR DEVICES AND EQUIPMENT ARE INDICATED TO BE REMOVED, CONDUCTORS AND CABLES SHALL BE COMPLETELY REMOVED BACK TO THEIR SOURCE. EXPOSED OR ACCESSIBLE CONDUITS SHALL BE REMOVED COMPLETELY; CONDUITS EMBEDDED IN CONCRETE OR MASONRY SHALL BE CUT OFF FLUSH AND THE SURFACE PATCHED SMOOTH AND LEVEL.
4. REMOVED MATERIALS SHALL BE DISPOSED OF USING LICENSED CARTING SERVICE.
5. HAZARDOUS MATERIALS - CONTAINING PCBS (BALLASTS), AND THE LIKE SHALL BE DISPOSED OF BY AN EPA APPROVED, LICENSED DISPOSAL SERVICE. CONTRACTOR SHALL OBTAIN AND HAVE ON FILE, AFFIDAVIT, AND RECEIPTS STATING HOW AND WHERE THE WASTE WAS DISPOSED OF OR CONVERTED.
6. CONTRACTOR SHALL REMOVE ALL ELECTRICAL EQUIPMENT IN OR ON WALLS THAT ARE TO BE REMOVED. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS FOR WALLS BEING REMOVED.
7. CONDUIT IN EXISTING OR NEW CEILINGS THAT IS NOT INTENDED FOR REUSE SHALL BE REMOVED BACK TO THE PANEL FROM WHICH IT ORIGINATES.
8. CONDUCTORS THAT ARE NOT DEEMED REUSABLE SHALL BE REMOVED BACK TO THE NEAREST JUNCTION BOX. WHERE THE ENTIRE CIRCUIT IS TO BE REMOVED, THE CONDUCTORS SHALL BE REMOVED BACK TO THE PANELBOARD FROM WHICH THEY ORIGINATE.
9. ANY EXISTING ELECTRICAL WORK WHICH IS PULLED OUT OR CUT AWAY SHALL BE REMOVED FROM THE SITE AS DIRECTED BY THE GENERAL CONTRACTOR AND THE OWNER.
10. EXISTING ELECTRICAL EQUIPMENTS WHICH IS NOT TO BE REUSED SHALL BE REMOVED FROM DRYWALL PARTITIONS. ANY OPENING IN EXISTING PARTITIONS LEFT BY REMOVAL OF EXISTING ELECTRICAL EQUIPMENT SHALL BE PATCHED BY THIS CONTRACTOR WITH MATERIALS TO MATCH EXISTING.
11. FOR PURPOSES OF THE CONTRACT, WHAT IS NOTED OR SHOWN ON DRAWINGS INDICATES THE SCOPE OF WORK REQUIRED AND QUALITY OF MATERIALS REQUIRED.
12. CONTRACTOR TO EXAMINE ALL CONTRACT DOCUMENTS AND PERFORM ALL DEMOLITION BOTH FOR AREAS BEING RENOVATED AND FOR AREAS WHICH MUST BE REWORKED TO PERMIT THE INSTALLATION OF WORK BY THE VARIOUS TRADES.
13. CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE EXTENT OF DEMOLITION AND REMOVALS PRIOR TO THE SUBMISSION OF BIDS. NO CONSIDERATION SHALL BE GIVEN FOR FAILURE TO VISIT THE SITE.

ELECTRICAL DRAWING LIST

DRAWING NUMBER	DRAWING DESCRIPTION
E01	GENERAL NOTES, SYMBOLS & ABBREVIATIONS - ELECTRICAL
E02	ELECTRICAL DEMOLITION PLANS 37 MAIN STREET
E03	BASEMENT, SECOND & ATTIC FLOOR PLANS - LIGHTING 37 MAIN STREET
E04	FIRST FLOOR PLAN - LIGHTING 37 MAIN STREET
E05	BASEMENT, SECOND & ATTIC FLOOR PLANS - ELECTRICAL 37 MAIN STREET
E06	FIRST FLOOR PLAN - ELECTRICAL 37 MAIN STREET
E07	RISER DIAGRAMS - ELECTRICAL & FIRE ALARM 37 MAIN STREET
E11	ELECTRICAL DEMOLITION PLANS 51 MAIN STREET
E12	FLOOR PLANS - LIGHTING 51 MAIN STREET
E13	FLOOR PLANS - ELECTRICAL 51 MAIN STREET
E14	CARRIAGE HOUSE FLOOR PLANS - LIGHTING & POWER 51 MAIN STREET
E15	RISER DIAGRAMS - ELECTRICAL & FIRE ALARM 51 MAIN STREET

Project Title:
Renovation and Addition to
37 & 51 Main Street
Durham, Connecticut 06422

SILVER / PETRUCELLI + ASSOCIATES
Architects / Engineers / Interior Designers
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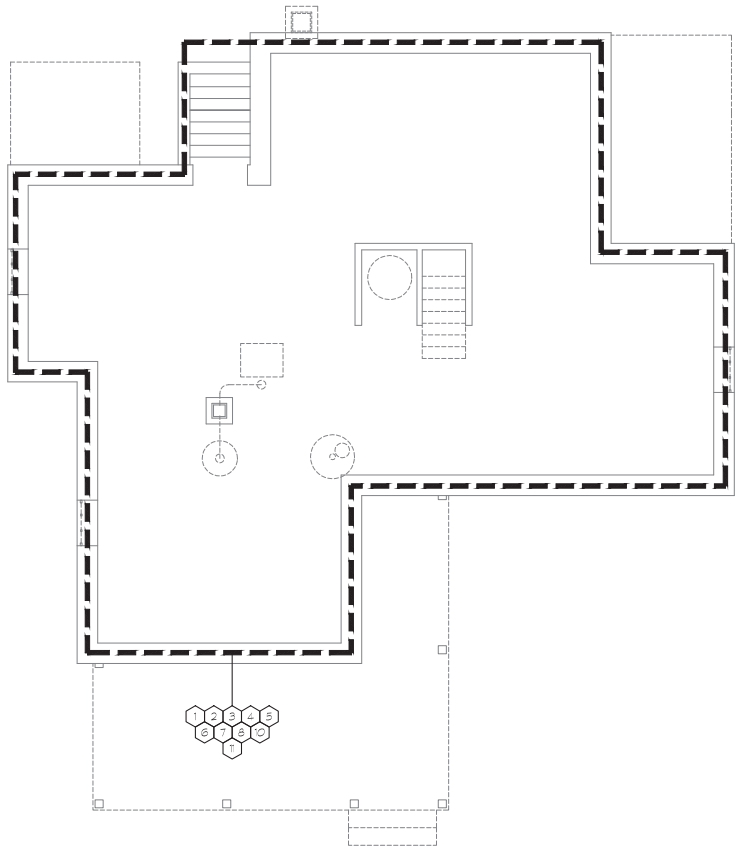
Revision:	Description:	Date:	Revised By:

Drawing Title:
GENERAL NOTES, SYMBOLS & ABBREVIATIONS - ELEC.
37 & 51 MAIN STREET

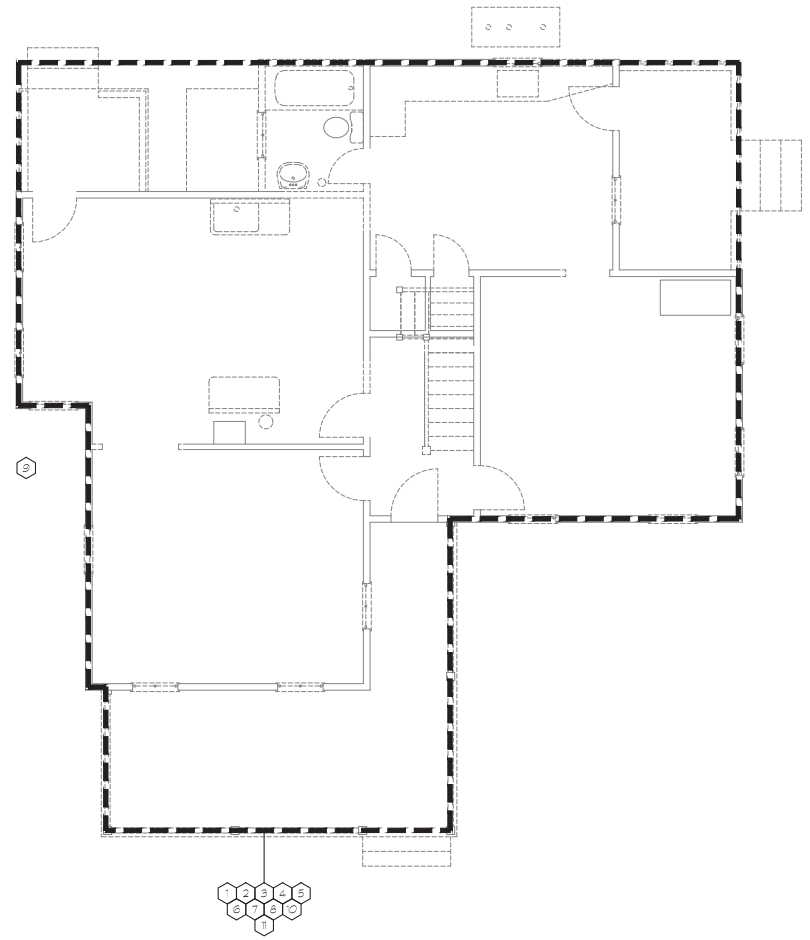
Date: MARCH 23, 2015
Scale: 1/4" = 1'-0"
Drawn By: SEC
SPA Project Number: 14.131

Drawing Number: E01



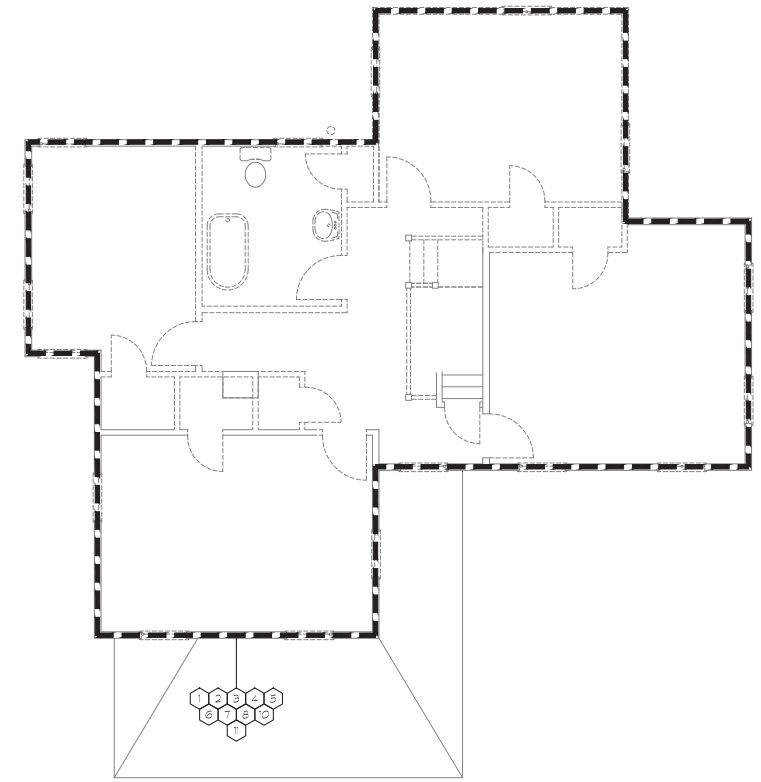
BASEMENT FLOOR PLAN (1 / E02)

SCALE: 1/4" = 1'-0"



FIRST FLOOR PLAN (2 / E02)

SCALE: 1/4" = 1'-0"



SECOND FLOOR PLAN (3 / E02)

SCALE: 1/4" = 1'-0"

DEMOLITION KEY NOTES

1. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT EXTENT OF DEMOLITION WORK.
2. DISCONNECT AND REMOVE ALL EXISTING INTERIOR LIGHTING FIXTURES, SWITCHES, BACKBOXES, CONDUIT AND WIRING BACK TO PANEL. (TYPICAL FOR ALL AREAS).
3. DISCONNECT AND REMOVE ALL EXISTING RECEPTACLES, BACKBOXES, CONDUIT AND WIRING BACK TO PANEL. (TYPICAL FOR ALL AREAS).
4. DISCONNECT AND REMOVE ALL EXISTING TELEPHONE/DATA OUTLETS, JUNCTION BOXES, RACEWAYS AND WIRING BACK TO TELECOMMUNICATIONS BACKBOARD + ALL TEL/COM WIRING REMOVED BY S.C. (TYPICAL FOR ALL AREAS). COORDINATE CABLE REMOVAL WITH OWNER.
5. DISCONNECT AND REMOVE ALL FINAL CONNECTIONS, DISCONNECT SWITCHES, OUTLETS, BACKBOXES, CONDUIT AND WIRING FOR OWNERS EQUIPMENT BACK TO RESPECTIVE PANEL. (TYPICAL FOR ALL EQUIPMENT TO BE REMOVED).
6. DISCONNECT AND REMOVE ALL FINAL CONNECTIONS, DISCONNECT SWITCHES, OUTLETS, CONDUIT AND WIRING FOR HVAC EQUIPMENT BACK TO PANEL (TYPICAL FOR ALL EQUIPMENT TO BE REMOVED).
7. DISCONNECT AND REMOVE ALL FINAL CONNECTIONS, DISCONNECT SWITCHES, OUTLETS, CONDUIT AND WIRING FOR PLUMBING EQUIPMENT BACK TO PANEL (TYPICAL FOR ALL EQUIPMENT TO BE REMOVED).
8. DISCONNECT AND REMOVE ALL EXISTING HARDWIRED FIRE ALARM DEVICES, BACKBOXES, CONDUIT AND WIRING BACK TO RESPECTIVE FIRE ALARM TERMINAL CABINET (TYPICAL FOR ALL AREAS).
9. DISCONNECT AND REMOVE EXISTING RESIDENTIAL ANTENNA. POLE(T)S MOUNTED TO AND ALL ASSOCIATED CONDUIT AND WIRE.
10. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL BLANK PLATES FOR ALL ELECTRICAL DEVICES TO BE REMOVED AND/OR ABANDONED IN WALLS TO REMAIN.
11. DISCONNECT AND REMOVE EXISTING ELECTRICAL SERVICE COMPLETE INCLUDING BUT NOT LIMITED TO PANELS, BRANCH CIRCUITS, WEATHERHEAD AND FEEDERS.

NORTH

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Revision:	Description:	Date:	Revised By:

Drawing Title:

ELECTRICAL DEMOLITION PLANS 37 MAIN STREET

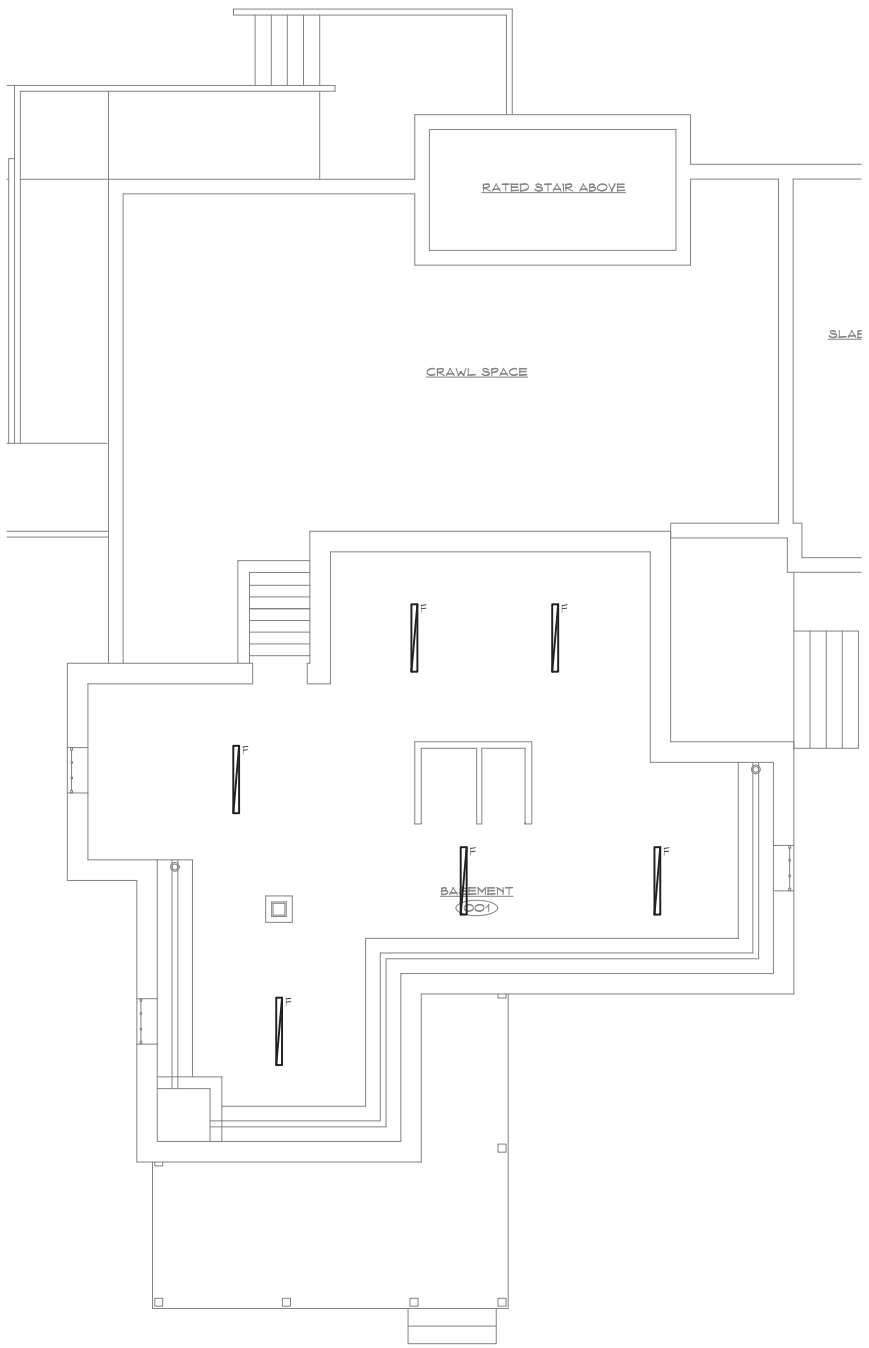
Date: MARCH 23, 2015

Scale: 1/4" = 1'-0"

Drawn By: SEC

SPA Project Number: 14.131

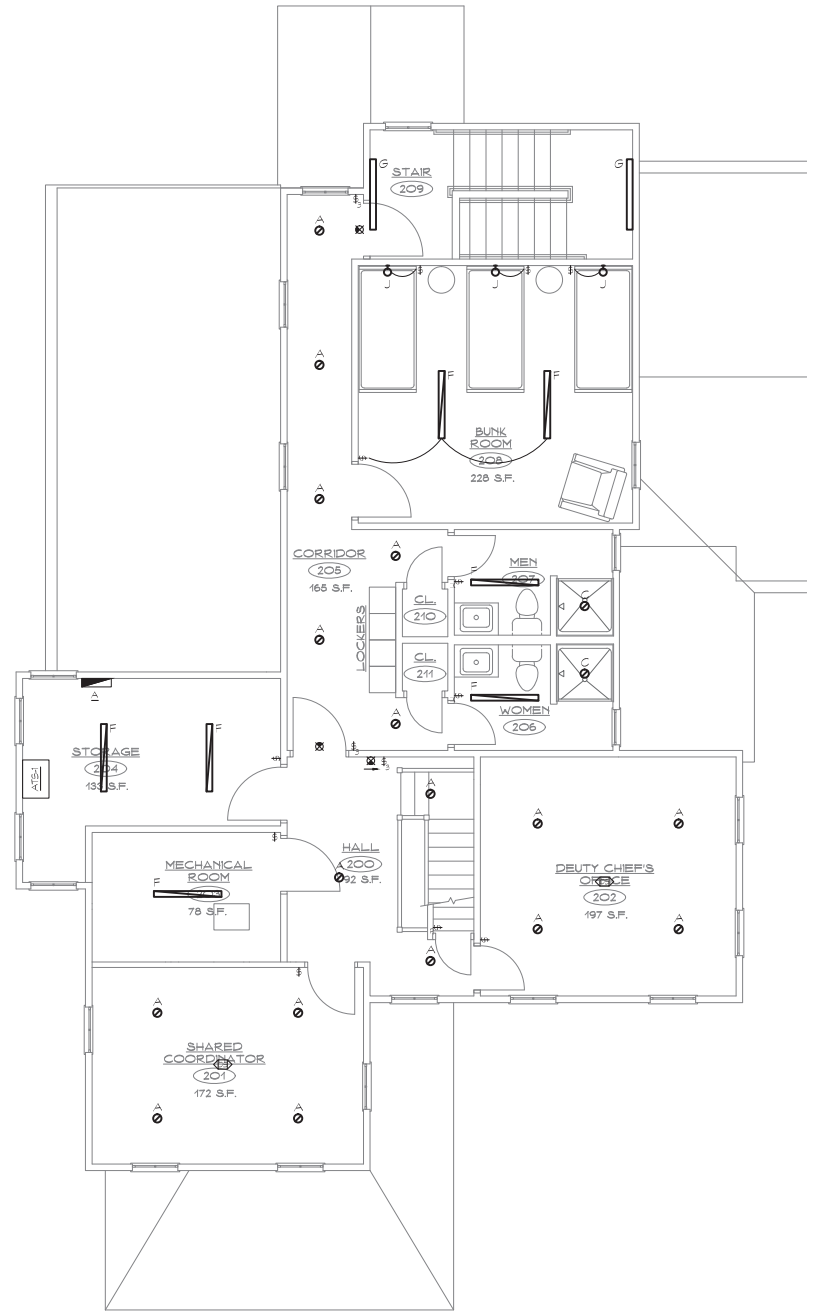
Drawing Number: E02



BASEMENT FLOOR PLAN

SCALE: 1/4" = 1'-0"

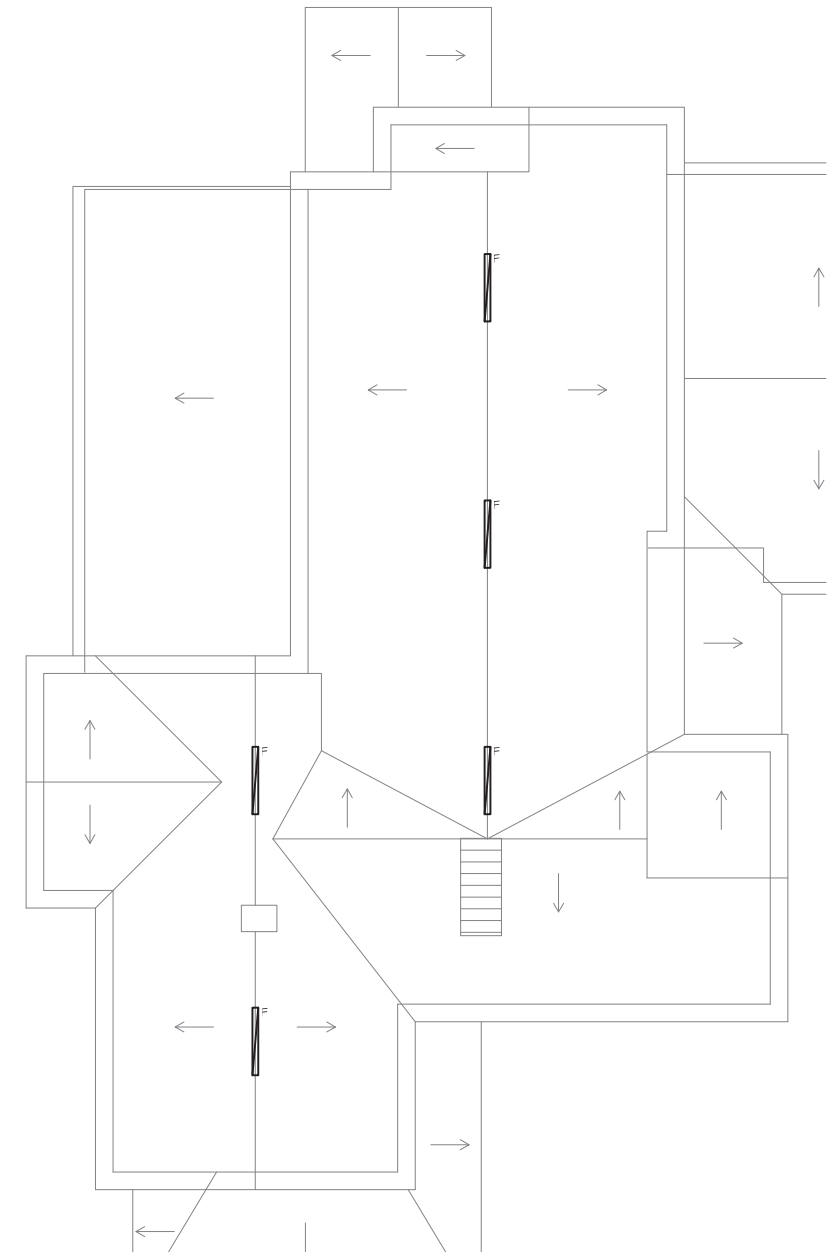
1 / E03



SECOND FLOOR PLAN

SCALE: 1/4" = 1'-0"

2 / E03



ATTIC FLOOR PLAN

SCALE: 1/4" = 1'-0"

3 / E03

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Project Title:

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Revision:	Description:	Date:	Revised By:

Drawing Title:

BASEMENT, SECOND & ATTIC FLOOR PLANS - LIGHTING

37 MAIN STREET

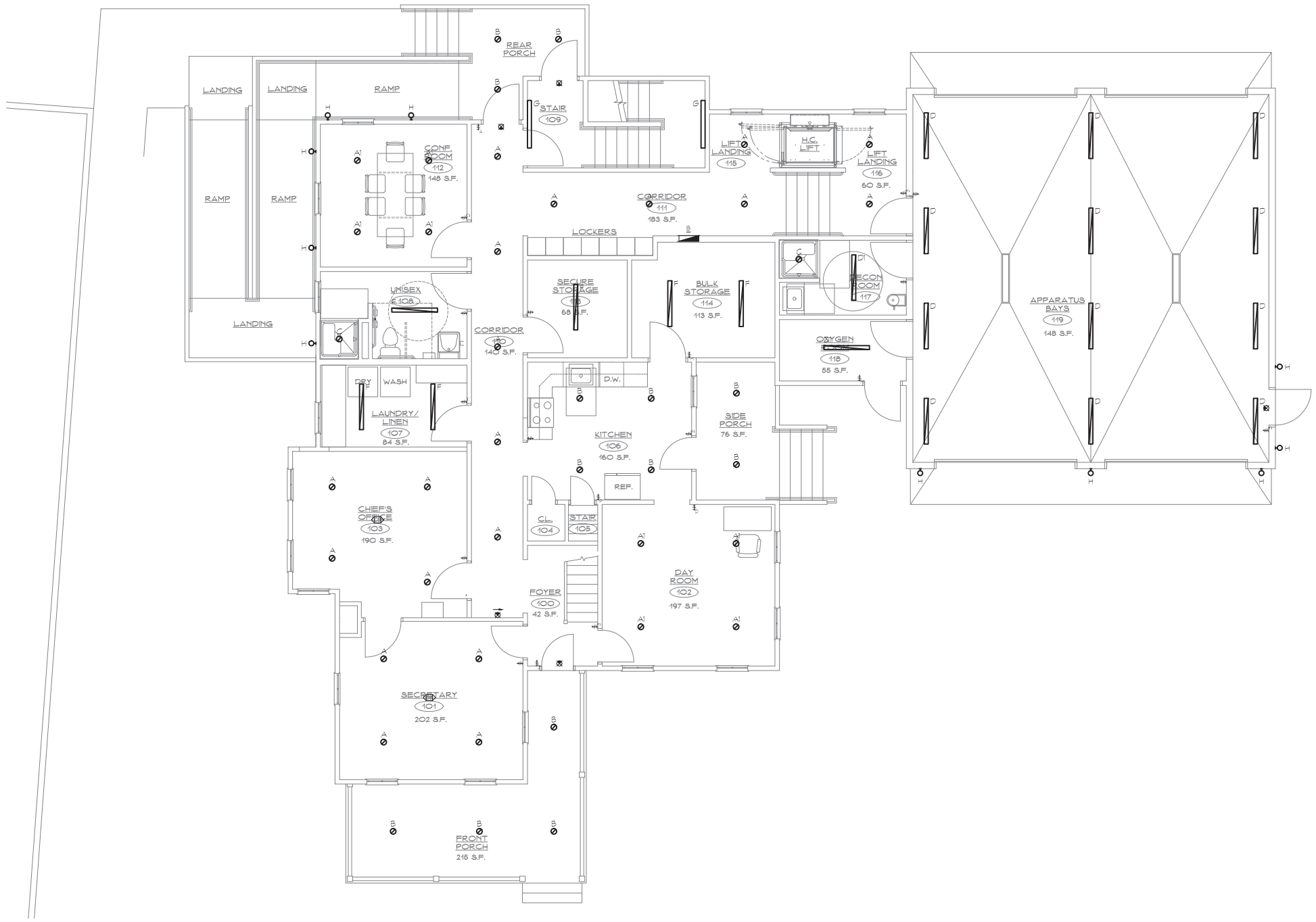
Date: MARCH 23, 2015

Scale: 1/4" = 1'-0"

Drawn By: SBC

SPA Project Number: 14.131

Drawing Number: E03



FIRST FLOOR PLAN

SCALE: 1/4" = 1'-0"

1
E04

NORTH

Project Title:

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Revision:	Description:	Date:	Revised By:

Drawing Title:

FIRST FLOOR PLAN - LIGHTING

37 MAIN STREET

Date: MARCH 23, 2015

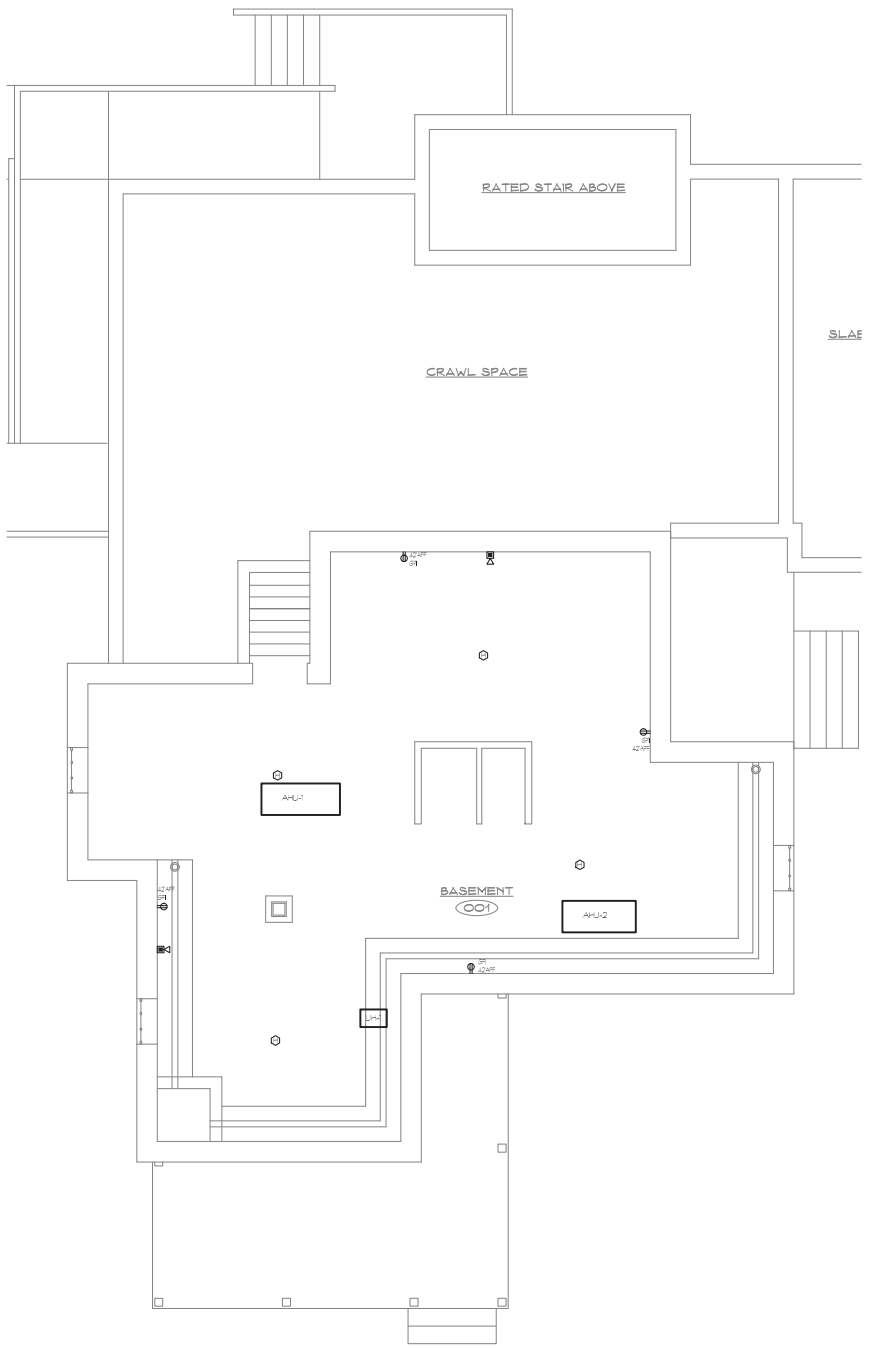
Scale: 1/4" = 1'-0"

Drawn By: SEC

SPA Project Number: 14.13-1

Drawing Number:

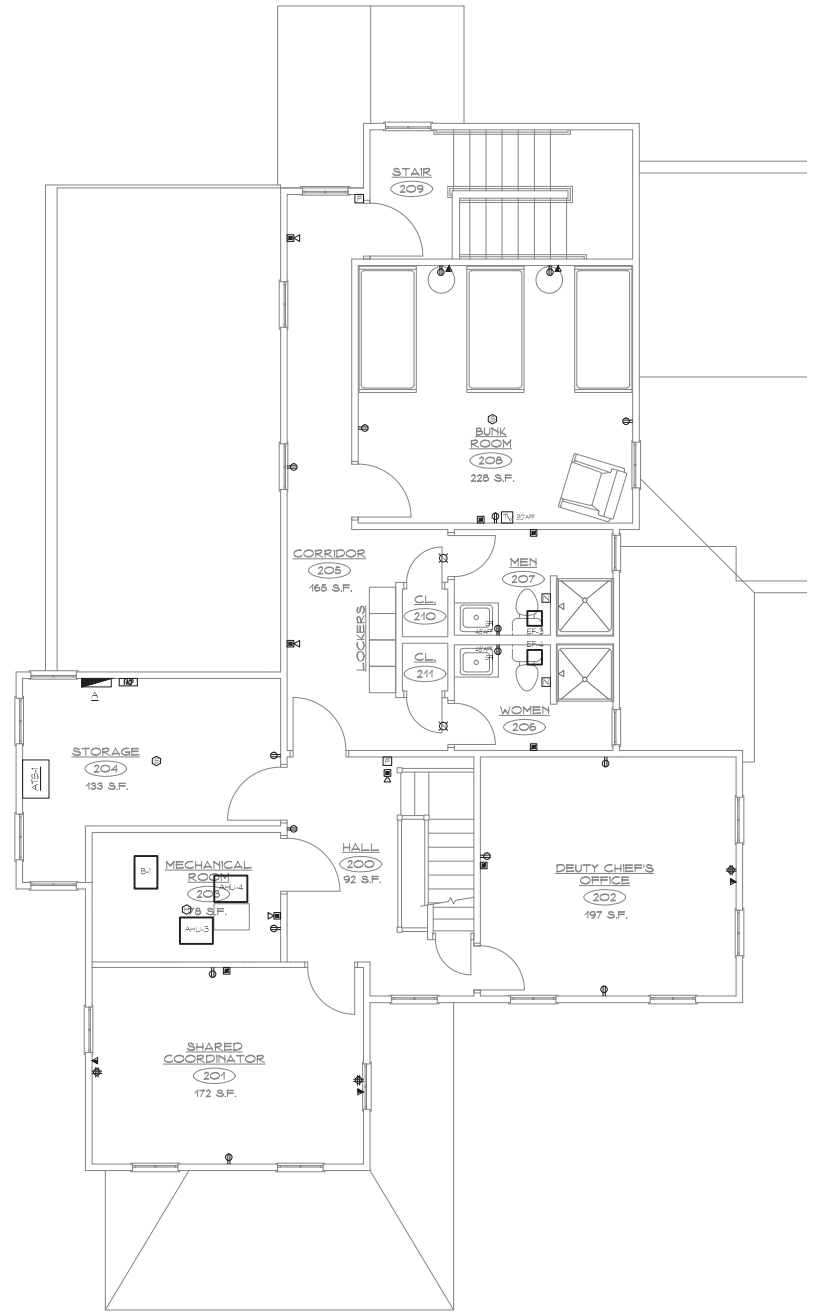
E04



BASEMENT FLOOR PLAN

SCALE: 1/4" = 1'-0"

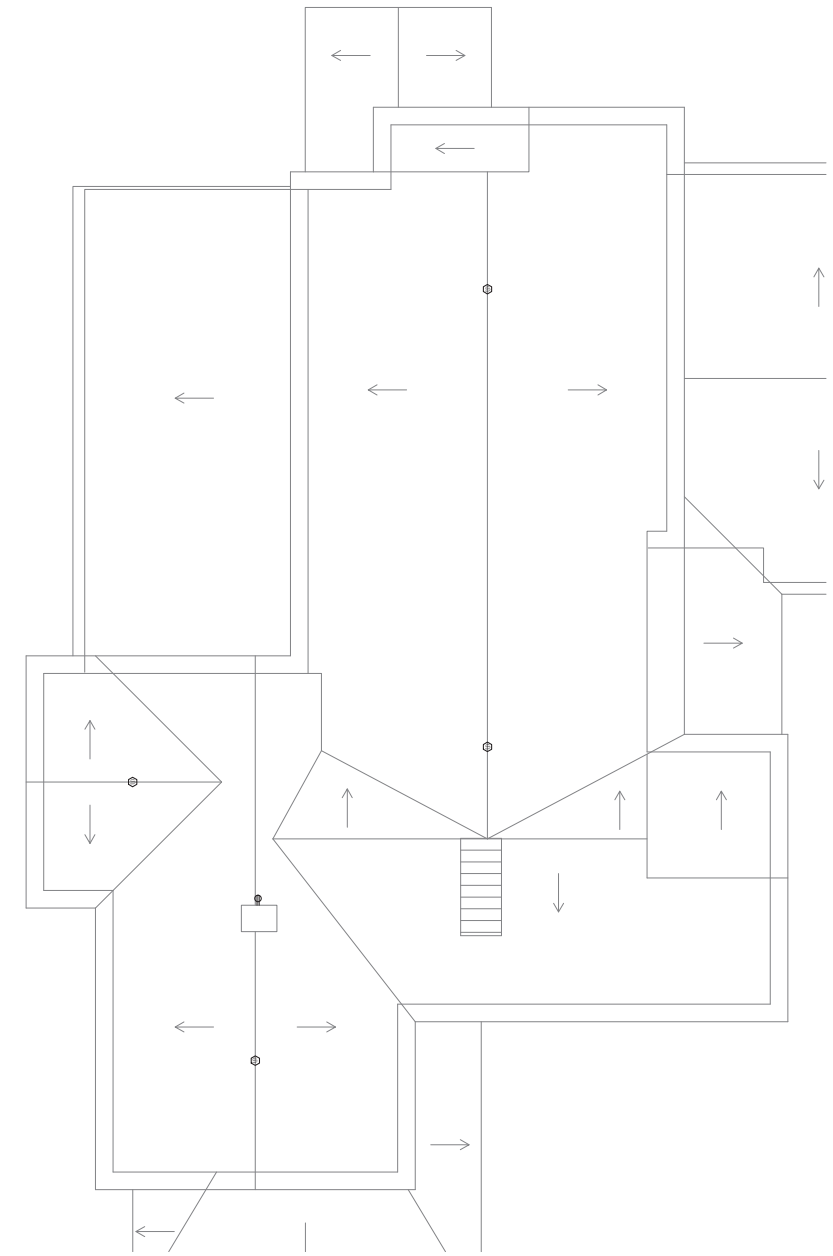
1 / E05



SECOND FLOOR PLAN

SCALE: 1/4" = 1'-0"

2 / E05



ATTIC FLOOR PLAN

SCALE: 1/4" = 1'-0"

3 / E05

NORTH

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Revision:	Description:	Date:	Revised By:

Drawing Title:

BASEMENT & SECOND FLOOR PLANS - ELECTRICAL

37 MAIN STREET

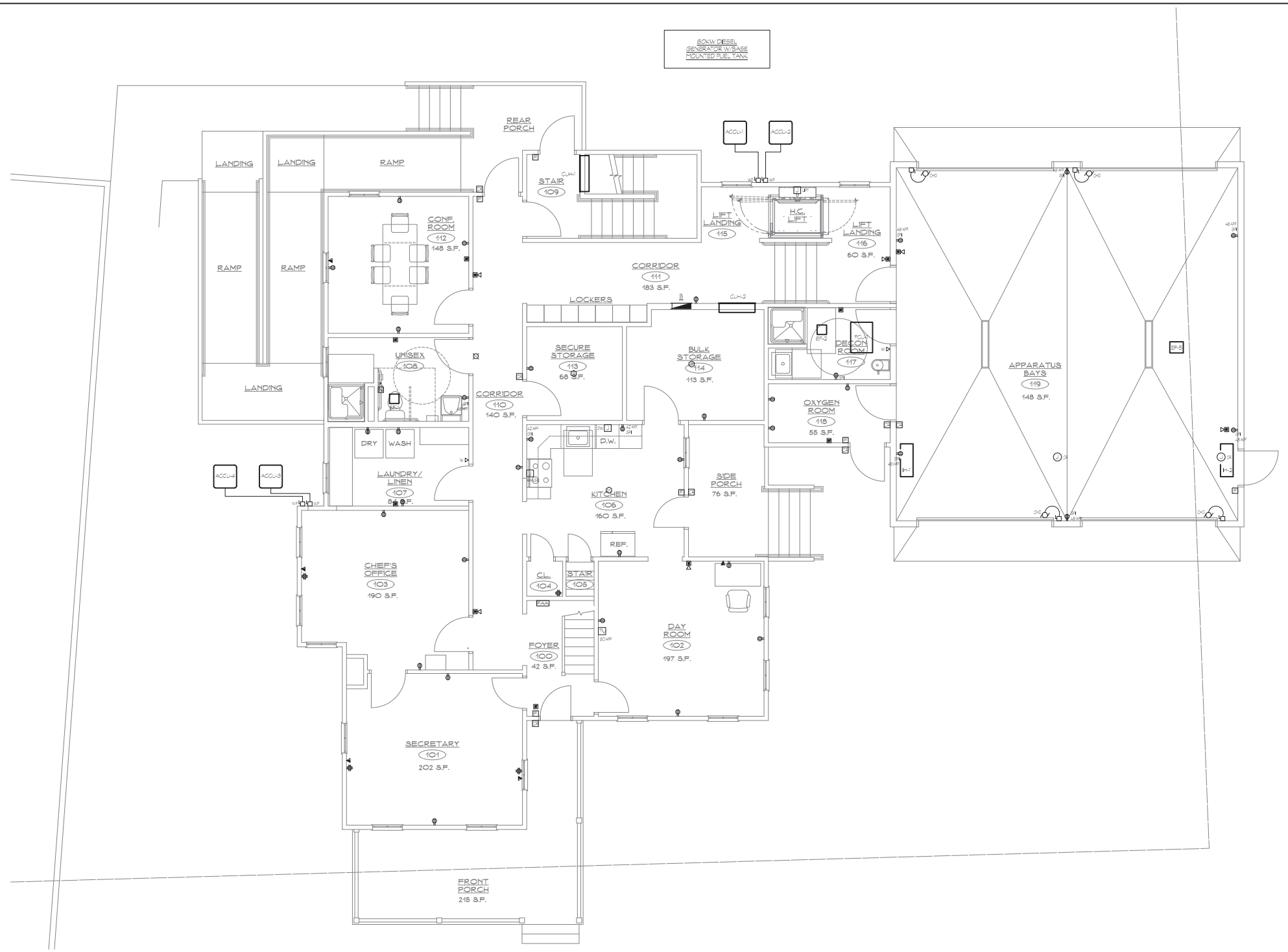
Date: MARCH 23, 2015

Scale: 1/4" = 1'-0"

Drawn By: SBC

SPA Project Number: 14.131

Drawing Number: E05



FIRST FLOOR PLAN

SCALE: 1/4" = 1'-0"

1 / E06

NORTH

Project Title:

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Revision:	Description:	Date:	Revised By:

Drawing Title:

FIRST FLOOR PLAN - ELECTRICAL

37 MAIN STREET

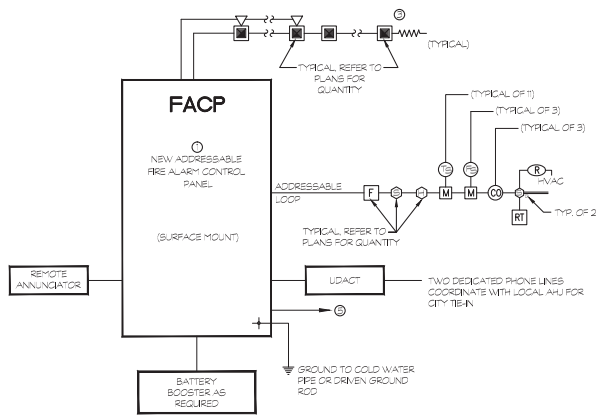
Date: MARCH 23, 2015

Scale: 1/4" = 1'-0"

Drawn By: SEC

SPA Project Number: 14.13-1

Drawing Number: E06



1 / E3 FIRE ALARM RISER DIAGRAM

N.T.S.

FIRE ALARM NOTES:

1. REFER TO SPECIFICATION 16720 FOR SYSTEM REQUIREMENTS.
2. PANEL WILL BE FURNISHED WITH DIALER FOR FIRE SERVICE NOTIFICATION. PROVIDE TWO PHONE LINES FROM DEMARK.
3. PROVIDE WIRING AS REQUIRED TO ALLOW FOR SILENCING OF AUDIBLE DEVICES WITH STROBES STILL ACTIVE. ALL STROBES SHALL BE SYNCHRONIZED.
4. SEPARATE BUILDING INTO A MINIMUM OF 2 LOGICAL SECTIONS BY USE OF NOTIFIER ISO-X FAULT ISOLATOR MODULES.
5. PROVIDE 120V, 20A DEDICATED BRANCH CIRCUIT WITH BREAKER LOCK.
6. ALL WIRING TO BE PER SPECIFICATIONS AND MANUFACTURERS REQUIREMENTS.
7. FURNISH DEVICES WITH ALL NECESSARY MATERIALS AND ACCESSORIES FOR COMPLETE INSTALLATION TO BE FULLY OPERATIONAL.
8. CONTRACTOR SHALL COORDINATE LOCATION OF ALL DUCT SMOKE DETECTORS WITH MECHANICAL CONTRACTOR. ALL DEVICES SHALL BE WIRED TO THE FIRE ALARM SYSTEM.
9. MOUNT NOTIFICATION DEVICES 80" AFF OR 6" BELOW CEILING, WHICH EVER IS LOWER. MOUNT PULL STATIONS AT 48" AFF.
10. PROVIDE FRAMED BUILDING LAYOUT ADJACENT TO CONTROL PANEL.
11. REFER TO POWER PLANS TO CONFIRM DEVICE QUANTITIES. ALL FIRE ALARM WORK SHALL BE INCLUDED IN THE BASE BID.

CONDUCTOR AND CONDUIT SIZING TABLE

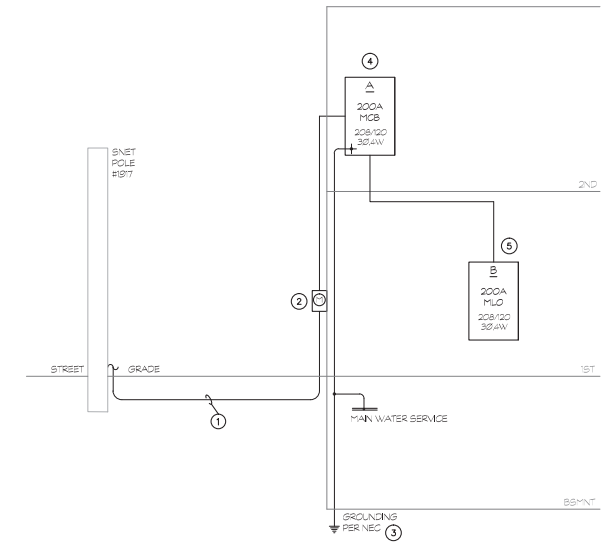
CIRCUIT BREAKER	CONDUCTOR (THWN/THHN)	CONDUIT SIZE
20 AMP	#12 - #12 GND	3/4
30 AMP	#10 - #10 GND	3/4
40/45/50 AMP	#8 - #10 GND	1
60/70/80 AMP	#6 - #10 GND	1 1/4
90/100 AMP	#3 - #8 GND	1 1/2
125 AMP	#1 - #8 GND	1 1/2
150 AMP	#1/0 - #8 GND	1 1/2
200 AMP	#3/0 - #8 GND	2
225 AMP	#4/0 - #4 GND	2 1/2
250 AMP	#250 - #4 GND	2 1/2
400 AMP	#600 - #3 GND	4
600 AMP	(2 SETS) #350 - #1 GND	(2) 3
800 AMP	(2 SETS) #600 - #1/0 GND	(2) 4
1000 AMP	(3 SETS) #400 - #2/0 GND	(3) 3-1/2

NOTE: 1. ALL VALUES BASED ON COPPER CONDUCTORS.

2. FEEDERS:
UPGRADE WIRE TO MAINTAIN MAXIMUM OF 2% VOLTAGE DROP.

BRANCH CIRCUITS:
UPGRADE WIRE TO MAINTAIN MAXIMUM OF 3% VOLTAGE DROP.

3. NUMBER OF WIRES SHALL BE DETERMINED WITH EQUIPMENT ELECTRICAL NAMEPLATE CHARACTERISTICS.
4. WHERE NEUTRALS ARE REQUIRED, IT SHALL MATCH FEEDER CONDUCTOR SIZE.



2 / E3 ELECTRICAL ONE LINE DIAGRAM

N.T.S.

NOTES:

1. CONTRACTOR SHALL PROVIDE AND INSTALL (2) 2"C. (1-ACTIVE, 1-SPARE) FROM UTILITY POLE #3917 TO CLEP APPROVED COMBINATION METER/SERVICE SWITCH. TERMINATE CONDUIT 6' ABOVE GRADE AT POLE AND INTO COMBINATION METER/SERVICE SWITCH. INSTALL PULL STRING IN BOTH CONDUITS. CLEP WILL INSTALL FEEDER CABLE AND TERMINATE AT NEW POLE MOUNTED TRANSFORMERS AND METER ASSEMBLY.
2. CONTRACTOR SHALL PROVIDE AND INSTALL A 200 AMP CLEP APPROVED COMBINATION METER/SERVICE SWITCH (200 AMP, 208/120V, 3Ø-4W) ON OUTSIDE WALL OF NEW BUILDING.
3. PROVIDE SERVICE GROUND TO WATER MAIN, AND GROUND ROD PER NEW NEC ARTICLE 250 AND UTILITY REQUIREMENTS.
4. PROVIDE PANEL: 200A MCB, 208/120V, 3Ø, 4 WIRE, 42 CIRCUIT, RATED FOR SERVICE ENTRANCE, WITH FEED THROUGH LUGS AND CIRCUIT BREAKERS AS INDICATED ON SCHEDULE.
5. PROVIDE PANEL: 200A MLO, 208/120V, 3Ø, 4 WIRE, 42 CIRCUIT WITH CIRCUIT BREAKERS AS INDICATED ON SCHEDULE.
6. REFER TO CONDUCTOR AND CONDUIT SIZING TABLE FOR FEEDER REQUIREMENTS. ALL WIRING BY ELECTRICAL CONTRACTOR.
7. SEAL ALL CONDUITS AS REQUIRED BY CODE.
8. PROVIDE PULL STRINGS AND CONDUIT END COVERS FOR ALL SPARE OR EMPTY CONDUITS.
9. PROVIDE BLACK PAINTED PLYWOOD BACKBOARD. ANCHOR AS REQUIRED FOR SEISMIC LOAD.

FIRE ALARM LEGEND

FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	AFP-200 (FLUSH)
UDACT	DIGITAL DIALER W/ TWO PHONE LINES	UDC-60
	ADA WALL MOUNT HORN/STROBE (OUTDOOR RATED WHERE MARKED W.P.)	P224WC
	ADA WALL MOUNT STROBE	S224WC
F	ADDRESSABLE MANUAL FIRE ALARM PULL STATION - DUAL ACTION MOUNT AT 48" AFF. W/ KEY RESET.	NBG-12LX
	ADDRESSABLE PHOTOELECTRIC AREA SMOKE DETECTOR	FSP-851
	ADDRESSABLE HEAT DETECTOR 135°F FIXED PLUS RATE OF RISE	FST-851R
C	CONTACTS IN GENERATOR CONTROL PANEL. PROVIDE ADDRESSABLE MODULE FOR MONITORING	FRM-1
R	INTELLISENT RELAY	FRM-1/SMB500
	ADDRESSABLE DUCT SMOKE DETECTOR W/ SAMPLING TUBE, REMOTE TEST SWITCH AND PHOTOELECTRIC HEAD.	FSD-75RPL
RT	REMOTE TEST STATION	RTS451
R HVAC	HVAC EQUIPMENT SHUT-DOWN MODULE	FRM-1
	END OF LINE RESISTOR	
TS	TAMPER SWITCH	
FS	FLOW SWITCH	
PS	PRESSURE SWITCH	
CO	CO2 DETECTOR	

PANEL "A"

RATINGS: 240V/200 A, 42,000 AIC
SERVICE: 208 Y/120V, 3 PHS/4-WIRE
LOCATION: MECH/STORAGE
MOUNTING: SURFACE

DESCRIPTION	NOTE	AMPS	TRIP AMP	POLE	CKT. TYP	CKT. NO.	A	B	C	CKT. NO.	CKT. TYP	POLE	TRIP AMP	AMPS	NOTE	DESCRIPTION
						1	•			2						
						3		•		4						
						5			•	6						
						7	•			8						
						9		•		10						
						11			•	12						
						13	•			14						
						15		•		16						
						17			•	18						
						19	•			20						
						21		•		22						
						23			•	24						
						25	•			26						
						27		•		28						
						29			•	30						
						31	•			32						
						33		•		34						
						35			•	36						
						37	•			38						
						39		•		40						
						41			•	42						

NOTES:
1. PANELBOARD SHALL BE CUTLER-HAMMER POW-R-LINE 1 OR EQUAL WITH MAIN BREAKER (SERVICE ENTRANCE RATED).
2. PROVIDE CB LOCK.
3. PROVIDE HACR BREAKER.
4. UPGRADE WIRE SIZE AS REQUIRED TO MAINTAIN 3% MAXIMUM VOLTAGE DROP.
5. TOTAL CONNECTED LOAD: PHASE A - 0.0 VA, PHASE B - 0.0 VA, PHASE C - 0.0 VA
6. CIRCUIT TYPE A: 120V, 2 WIRE IN CONDUIT OR MC CABLE.
7. CIRCUIT TYPE A1: 120V, 3 WIRE IN CONDUIT OR MC CABLE.
8. CIRCUIT TYPE B: 208V, 1Ø, 4 WIRE IN CONDUIT OR MC CABLE.
9. CIRCUIT TYPE C: 208V, 3Ø, 5 WIRE IN CONDUIT OR MC CABLE.

PANEL "B"

RATINGS: 240V/200 A, 42,000 AIC
SERVICE: 208 Y/120V, 3 PHS/4-WIRE
LOCATION: CORRIDOR #104
MOUNTING: RECESSED

DESCRIPTION	NOTE	AMPS	TRIP AMP	POLE	CKT. TYP	CKT. NO.	A	B	C	CKT. NO.	CKT. TYP	POLE	TRIP AMP	AMPS	NOTE	DESCRIPTION
						1	•			2						
						3		•		4						
						5			•	6						
						7	•			8						
						9		•		10						
						11			•	12						
						13	•			14						
						15		•		16						
						17			•	18						
						19	•			20						
						21		•		22						
						23			•	24						
						25	•			26						
						27		•		28						
						29			•	30						
						31	•			32						
						33		•		34						
						35			•	36						
						37	•			38						
						39		•		40						
						41			•	42						

NOTES:
1. PANELBOARD SHALL BE CUTLER-HAMMER POW-R-LINE 1 OR EQUAL WITH MAIN BREAKER (SERVICE ENTRANCE RATED).
2. PROVIDE CB LOCK.
3. PROVIDE HACR BREAKER.
4. UPGRADE WIRE SIZE AS REQUIRED TO MAINTAIN 3% MAXIMUM VOLTAGE DROP.
5. TOTAL CONNECTED LOAD: PHASE A - 0.0 VA, PHASE B - 0.0 VA, PHASE C - 0.0 VA
6. CIRCUIT TYPE A: 120V, 2 WIRE IN CONDUIT OR MC CABLE.
7. CIRCUIT TYPE A1: 120V, 3 WIRE IN CONDUIT OR MC CABLE.
8. CIRCUIT TYPE B: 208V, 1Ø, 4 WIRE IN CONDUIT OR MC CABLE.
9. CIRCUIT TYPE C: 208V, 3Ø, 5 WIRE IN CONDUIT OR MC CABLE.

Project Title:
Renovation and Addition to
37 & 51 Main Street
Durham, Connecticut 06422

SILVER / PETRUCELLI + ASSOCIATES
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Tel. 203 230 9007 Fax. 203 230 8247
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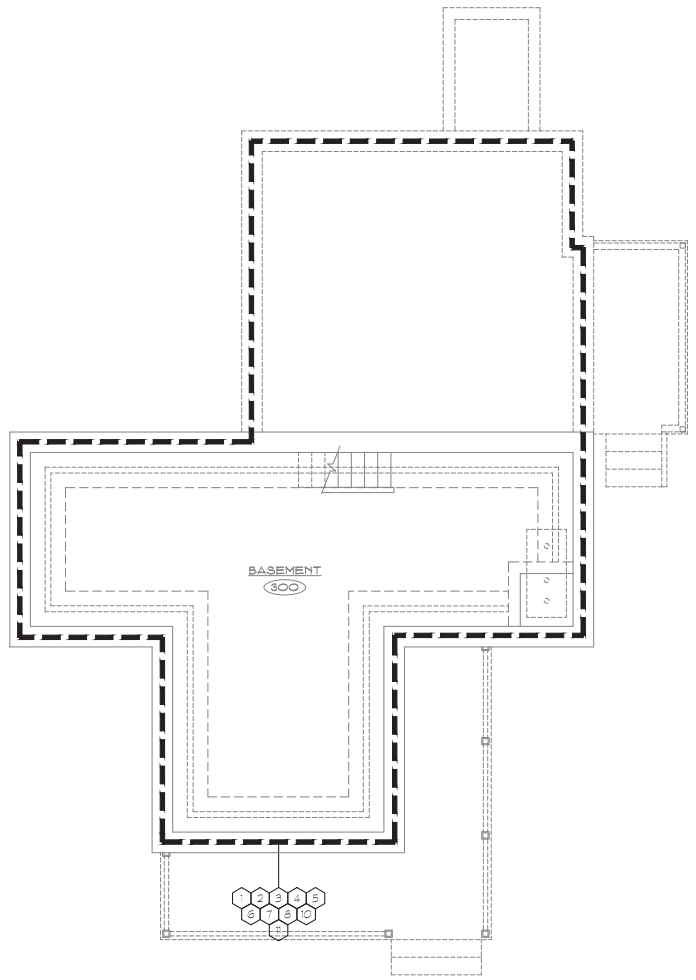
Revision:	Description:	Date:	Revised By:

Drawing Title:
RISER DIAGRAM - ELECTRICAL & FIRE ALARM
37 MAIN STREET

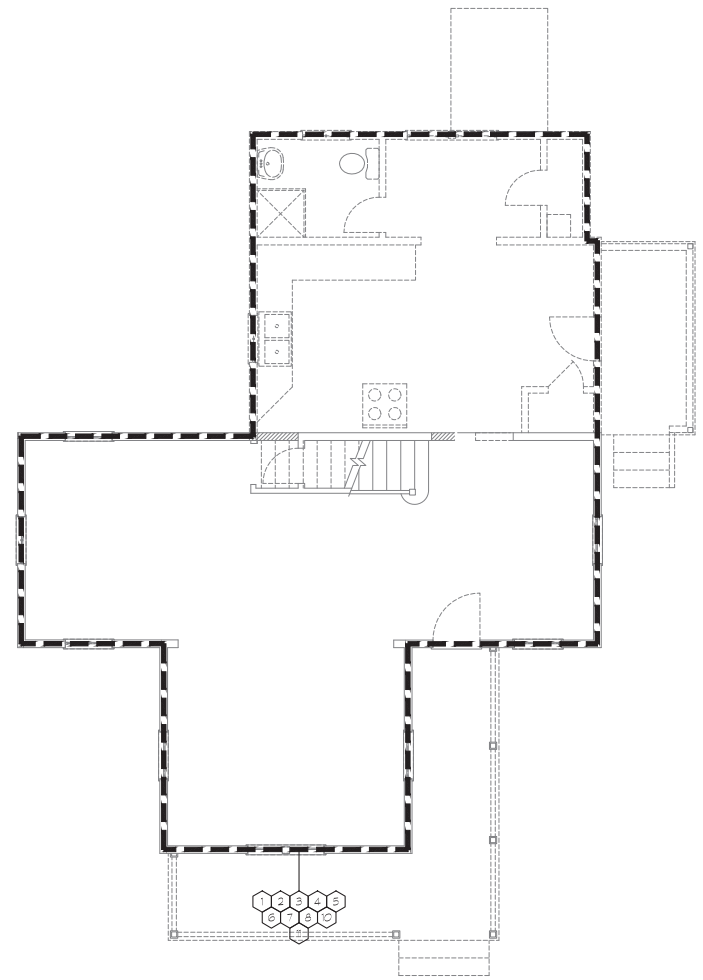
Date: MARCH 23, 2018
Scale: NONE
Drawn By: SEC
SPA Project Number: 14.131

Drawing Number: E07



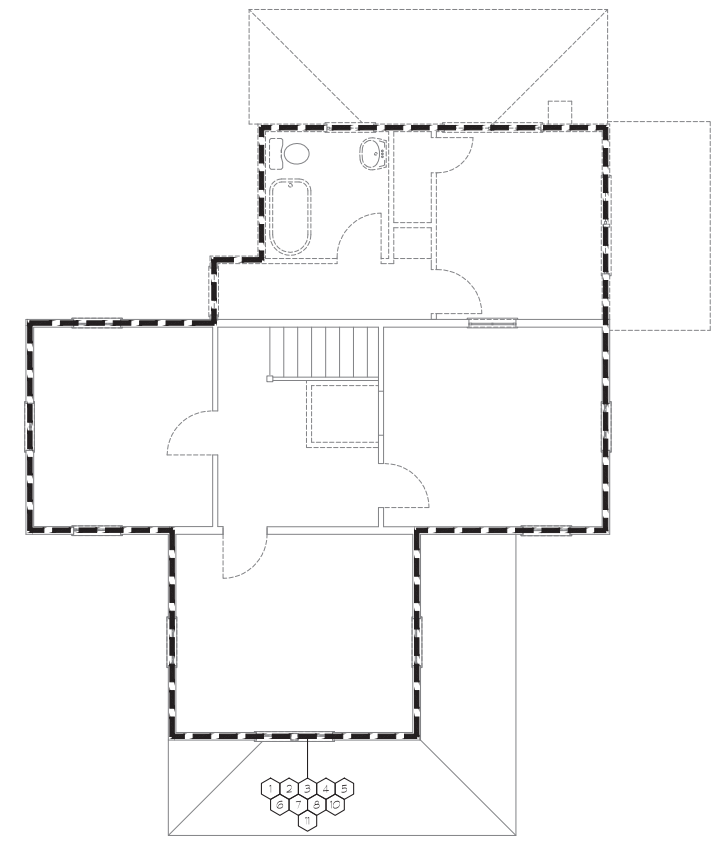
BASEMENT FLOOR PLAN (1 / E11)

SCALE: 1/4" = 1'-0"



FIRST FLOOR PLAN (2 / E11)

SCALE: 1/4" = 1'-0"



SECOND FLOOR PLAN (3 / E11)

SCALE: 1/4" = 1'-0"

DEMOLITION KEY NOTES

1. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT EXTENT OF DEMOLITION WORK.
2. DISCONNECT AND REMOVE ALL EXISTING INTERIOR LIGHTING FIXTURES, SWITCHES, BACKBONES, CONDUIT AND WIRING BACK TO PANEL (TYPICAL FOR ALL AREAS).
3. DISCONNECT AND REMOVE ALL EXISTING RECEPTACLES, BACKBONES, CONDUIT AND WIRING BACK TO PANEL (TYPICAL FOR ALL AREAS).
4. DISCONNECT AND REMOVE ALL EXISTING TELEPHONE/DATA OUTLETS, JUNCTION BOXES, RACEWAYS AND WIRING BACK TO TELECOMMUNICATIONS BACKBOARD - ALL TEL/COM WIRING REMOVED BY E.C. (TYPICAL FOR ALL AREAS). COORDINATE CABLE REMOVAL WITH OWNER.
5. DISCONNECT AND REMOVE ALL FINAL CONNECTIONS, DISCONNECT SWITCHES, OUTLETS, BACKBONES, CONDUIT AND WIRING FOR OWNERS EQUIPMENT BACK TO RESPECTIVE PANEL (TYPICAL FOR ALL EQUIPMENT TO BE REMOVED).
6. DISCONNECT AND REMOVE ALL FINAL CONNECTIONS, DISCONNECT SWITCHES, OUTLETS, CONDUIT AND WIRING FOR HVAC EQUIPMENT BACK TO PANEL (TYPICAL FOR ALL EQUIPMENT TO BE REMOVED).
7. DISCONNECT AND REMOVE ALL FINAL CONNECTIONS, DISCONNECT SWITCHES, OUTLETS, CONDUIT AND WIRING FOR PLUMBING EQUIPMENT BACK TO PANEL (TYPICAL FOR ALL EQUIPMENT TO BE REMOVED).
8. DISCONNECT AND REMOVE ALL EXISTING HARDWIRED FIRE ALARM DEVICES, BACKBONES, CONDUIT AND WIRING BACK TO RESPECTIVE FIRE ALARM TERMINAL CABINET (TYPICAL FOR ALL AREAS).
9. DISCONNECT AND REMOVE EXISTING RESIDENTIAL ANTENNA. POLE IT IS MOUNTED TO AND ALL ASSOCIATED CONDUIT AND WIRE.
10. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL BLANK PLATES FOR ALL ELECTRICAL DEVICES TO BE REMOVED AND/OR ABANDONED IN WALLS TO REMAIN.
11. DISCONNECT AND REMOVE EXISTING ELECTRICAL SERVICE COMPLETE, INCLUDING BUT NOT LIMITED TO PANELS, BRANCH CIRCUITS, WEATHERHEAD AND FEEDERS.

NORTH

Project Title:
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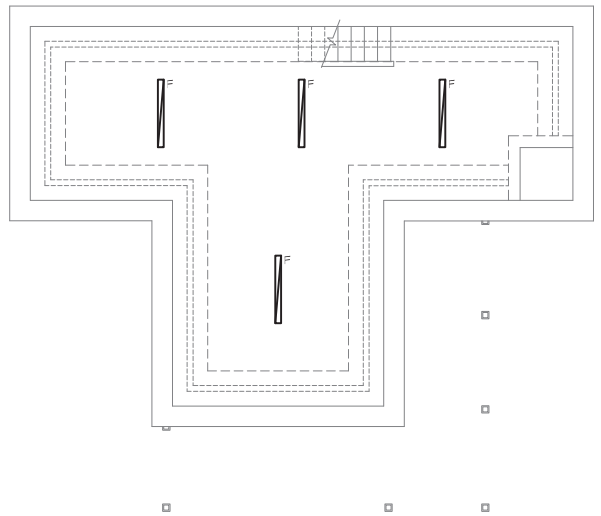
Revision:	Description:	Date:	Revised By:

Drawing Title:
ELECTRICAL
DEMOLITION PLANS
51 MAIN STREET

Date: MARCH 23, 2015
Scale: 1/4" = 1'-0"
Drawn By: SEC
SPA Project Number: 14.131

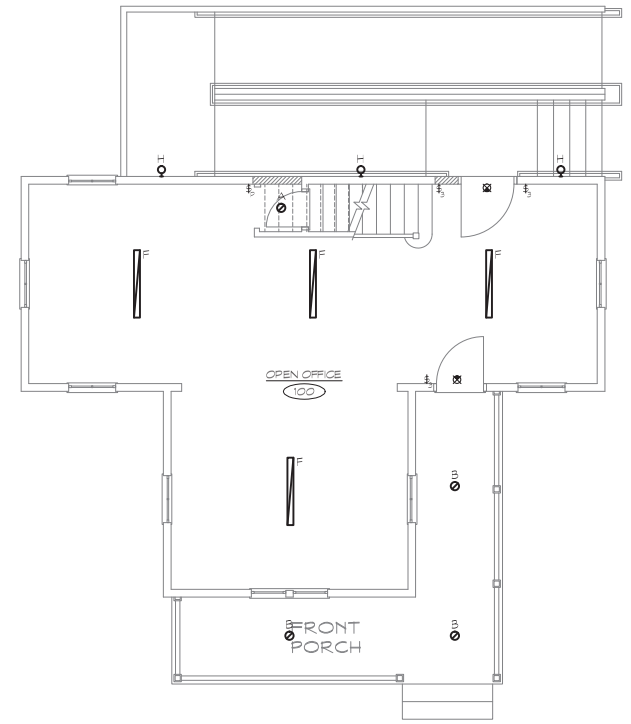
Drawing Number: E11



BASEMENT FLOOR PLAN

SCALE: 1/4" = 1'-0"

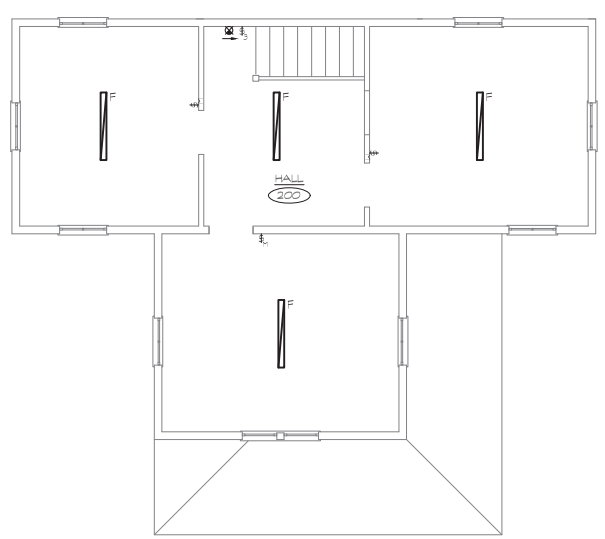
1
E12



FIRST FLOOR PLAN

SCALE: 1/4" = 1'-0"

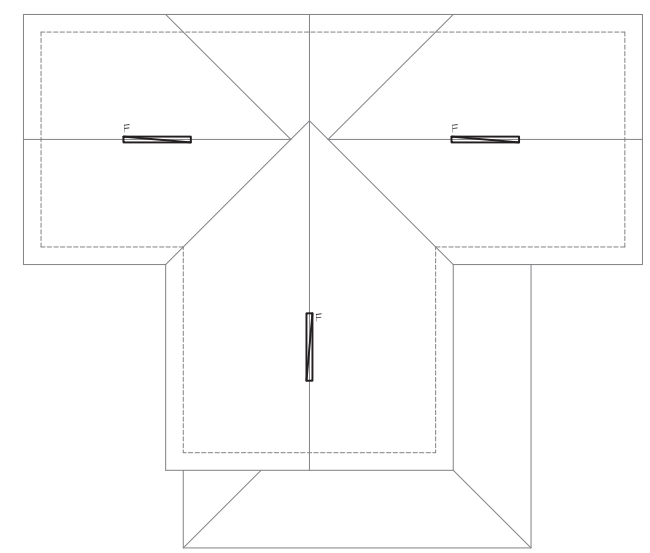
2
E12



SECOND FLOOR PLAN

SCALE: 1/4" = 1'-0"

3
E12



ATTIC FLOOR PLAN

SCALE: 1/4" = 1'-0"

4
E12

NORTH

Project Title:

Renovation and Addition to

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Revision:	Description:	Date:	Revised By:

Drawing Title:

FLOOR PLANS - LIGHTING

51 MAIN STREET

Date: MARCH 23, 2015

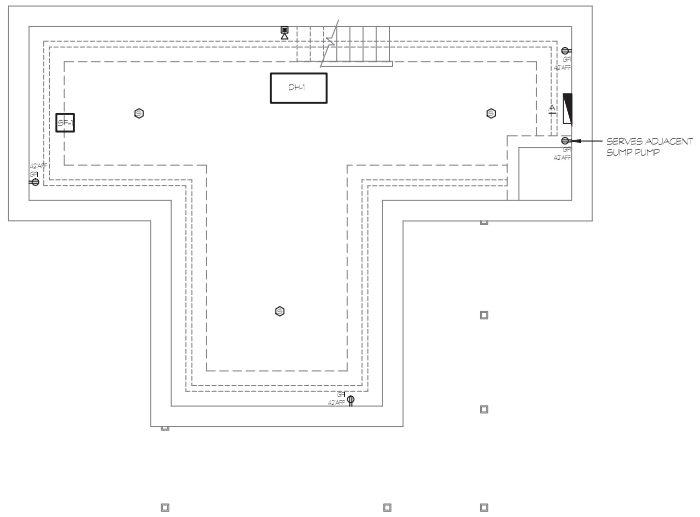
Scale: 1/4" = 1'-0"

Drawn By: SEC

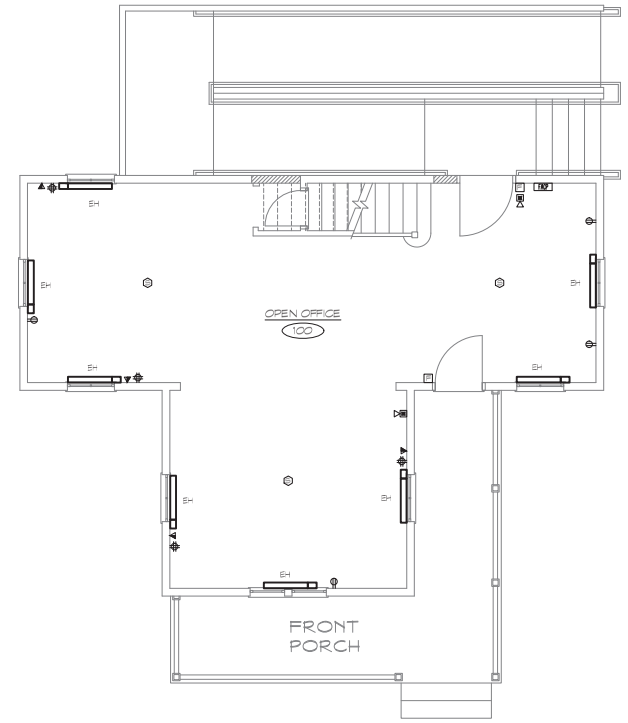
SPA Project Number: 14.131

Drawing Number:

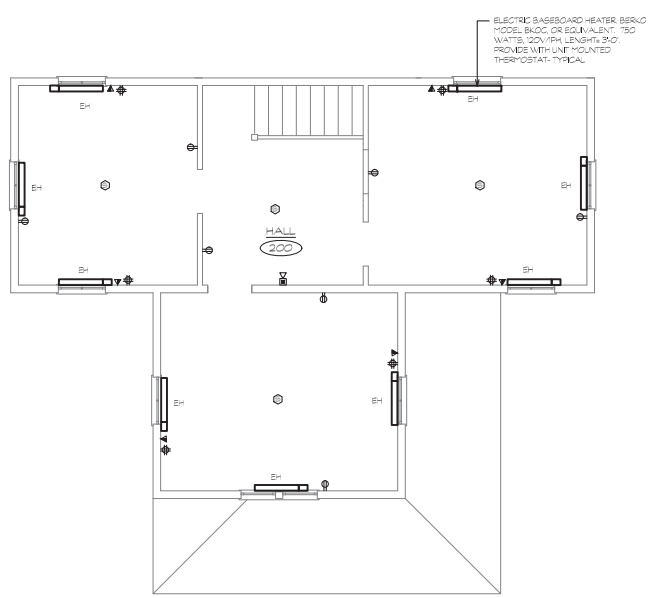
E12



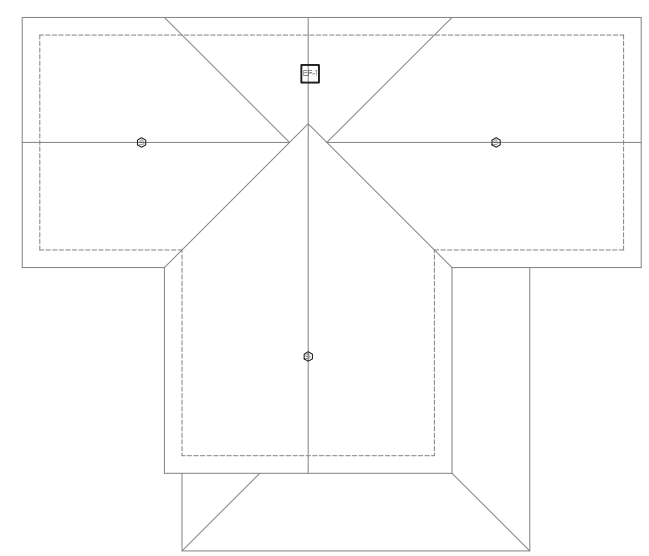
BASEMENT FLOOR PLAN
SCALE: 1/4" = 1'-0"
1 / E13



FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"
2 / E13



SECOND FLOOR PLAN
SCALE: 1/4" = 1'-0"
3 / E13



ATTIC FLOOR PLAN
SCALE: 1/4" = 1'-0"
4 / E13

NORTH

Project Title:
Renovation and Addition to
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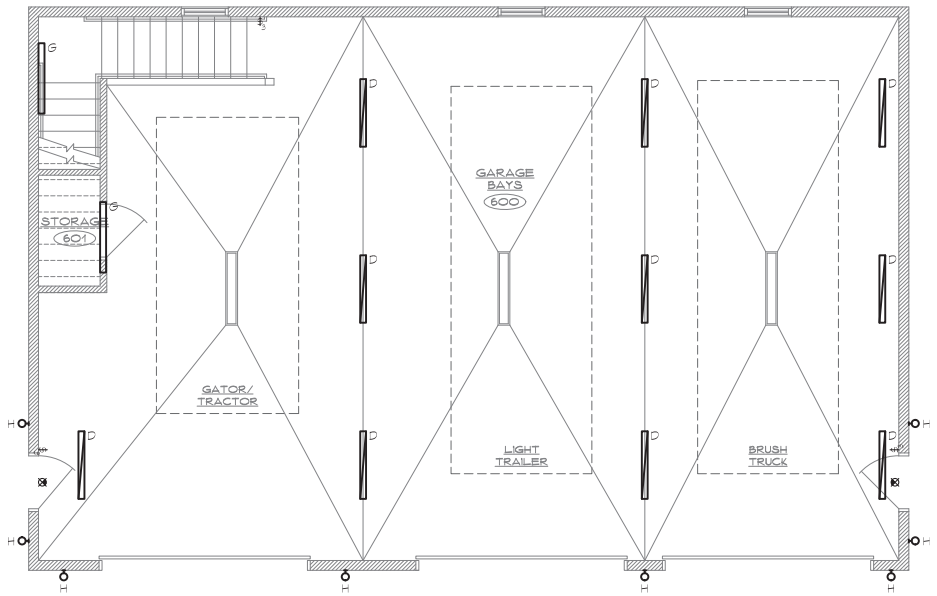
Revision:	Description:	Date:	Revised By:

Drawing Title:
FLOOR PLANS - ELECTRICAL
51 MAIN STREET

Date: MARCH 23, 2015
Scale: 1/4" = 1'-0"
Drawn By: SEC
SPA Project Number: 14.131

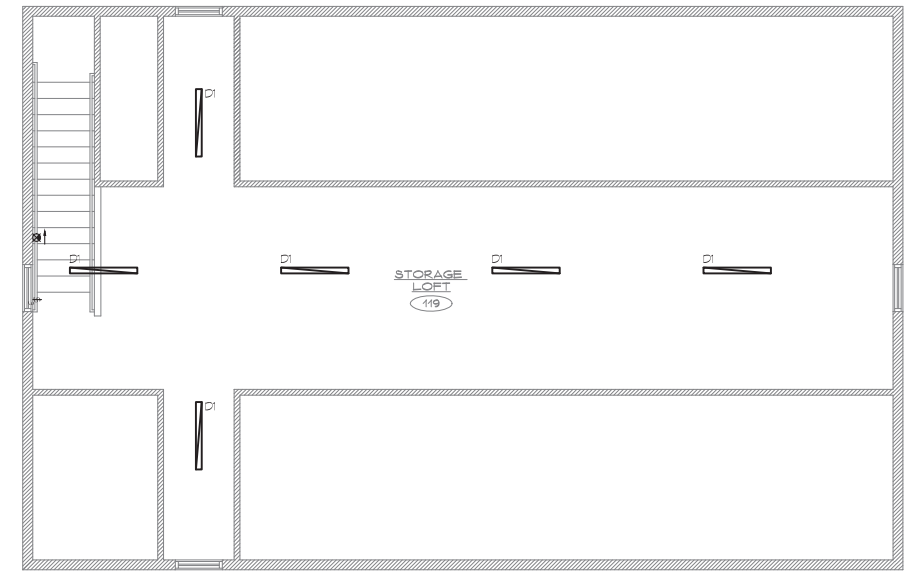
Drawing Number:
E13



MAIN FLOOR PLAN - LIGHTING

SCALE 1/4" = 1'-0"

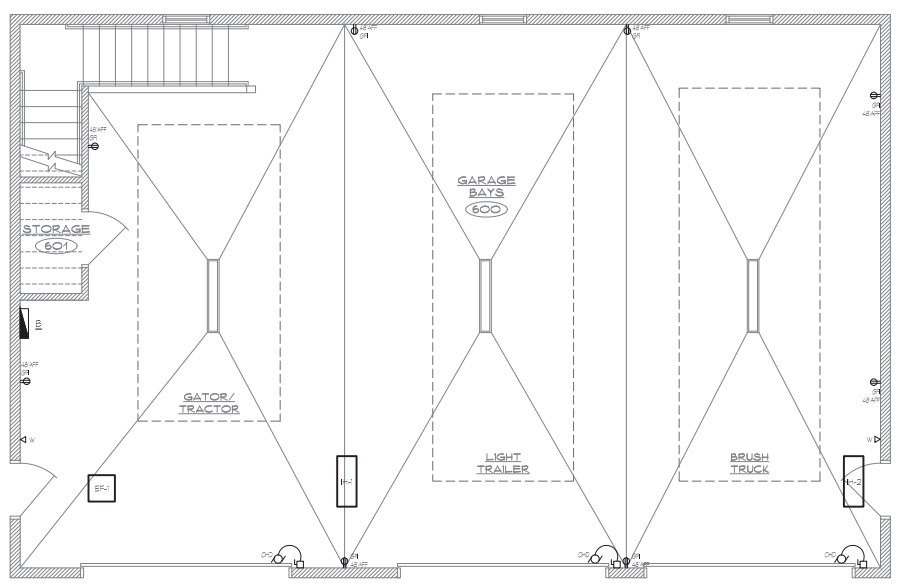
1
E14



MEZZANINE FLOOR PLAN - LIGHTING

SCALE 1/4" = 1'-0"

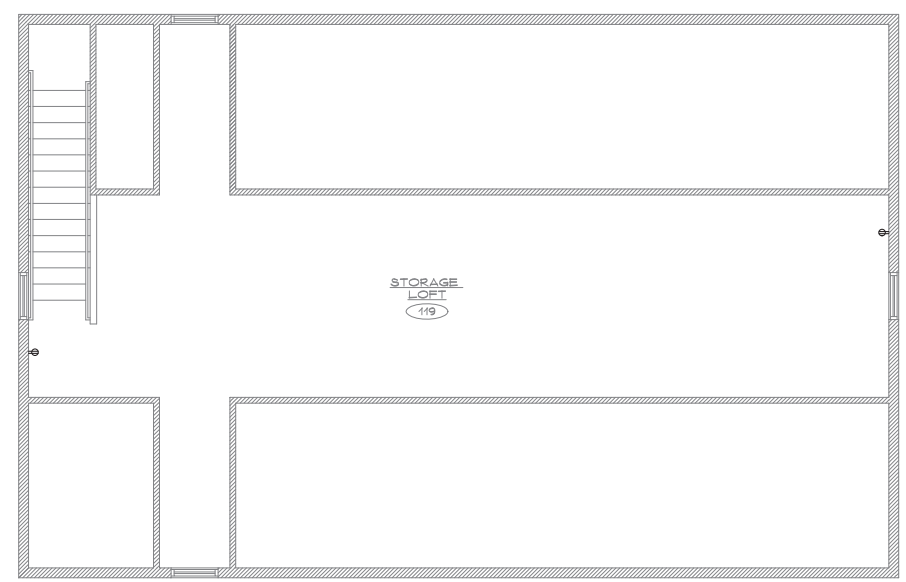
2
E14



MAIN FLOOR PLAN - POWER

SCALE 1/4" = 1'-0"

3
E14



MEZZANINE FLOOR PLAN - POWER

SCALE 1/4" = 1'-0"

4
E14

NORTH

Project Title:

Renovation and Addition to

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Revision:	Description:	Date:	Revised By:

Drawing Title:

CARRIAGE HOUSE FLOOR PLANS - LIGHTING & POWER

51 MAIN STREET

Date: MARCH 23, 2015

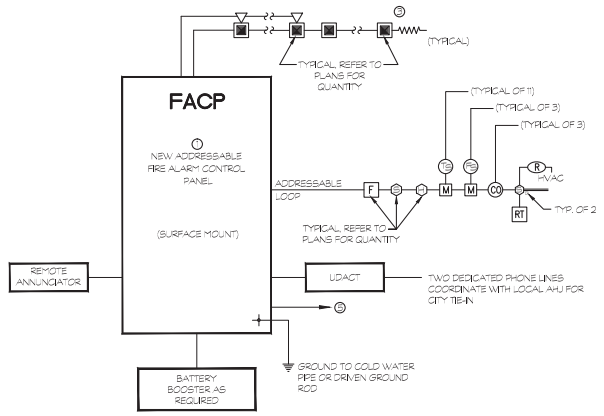
Scale: 1/4" = 1'-0"

Drawn By: SEC

SPA Project Number: 14.131

Drawing Number:

E14

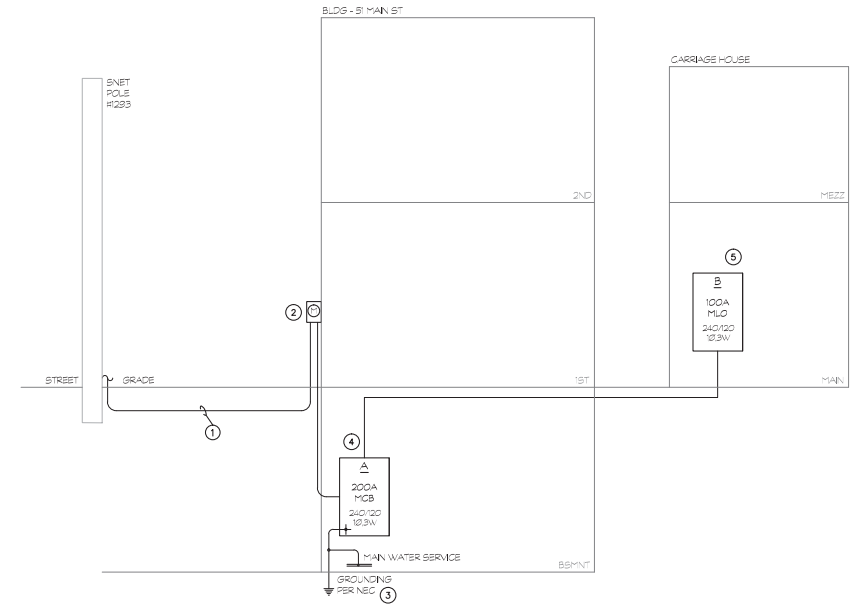


1 / E3 FIRE ALARM RISER DIAGRAM

N.T.S.

FIRE ALARM NOTES:

1. REFER TO SPECIFICATION 16720 FOR SYSTEM REQUIREMENTS.
2. PANEL WILL BE FURNISHED WITH DIALER FOR FIRE SERVICE NOTIFICATION. PROVIDE TWO PHONE LINES FROM DEMARK.
3. PROVIDE WIRING AS REQUIRED TO ALLOW FOR SILENCING OF AUDIBLE DEVICES WITH STROBES STILL ACTIVE. ALL STROBES SHALL BE SYNCHRONIZED.
4. SEPARATE BUILDING INTO A MINIMUM OF 2 LOGICAL SECTIONS BY USE OF NOTIFIER ISO-X FAULT ISOLATOR MODULES.
5. PROVIDE 120V, 20A DEDICATED BRANCH CIRCUIT WITH BREAKER LOCK.
6. ALL WIRING TO BE PER SPECIFICATIONS AND MANUFACTURERS REQUIREMENTS.
7. FURNISH DEVICES WITH ALL NECESSARY MATERIALS AND ACCESSORIES FOR COMPLETE INSTALLATION TO BE FULLY OPERATIONAL.
8. CONTRACTOR SHALL COORDINATE LOCATION OF ALL DUCT SMOKE DETECTORS WITH MECHANICAL CONTRACTOR. ALL DEVICES SHALL BE WIRED TO THE FIRE ALARM SYSTEM.
9. MOUNT NOTIFICATION DEVICES 80" AFF OR 6" BELOW CEILING, WHICH EVER IS LOWER. MOUNT PULL STATIONS AT 48" AFF.
10. PROVIDE FRAMED BUILDING LAYOUT ADJACENT TO CONTROL PANEL.
11. REFER TO POWER PLANS TO CONFIRM DEVICE QUANTITIES. ALL FIRE ALARM WORK SHALL BE INCLUDED IN THE BASE BID.



2 / E3 ELECTRICAL ONE LINE DIAGRAM

N.T.S.

NOTES:

1. CONTRACTOR SHALL PROVIDE AND INSTALL (2) 2"C (1-ACTIVE, 1-SPARE) FROM UTILITY POLE #233 TO CLEP APPROVED COMBINATION METER/SERVICE SWITCH. TERMINATE CONDUIT 6' ABOVE GRADE AT POLE AND INTO COMBINATION METER/SERVICE SWITCH. INSTALL PULL STRING IN BOTH CONDUITS. CLEP WILL INSTALL FEEDER CABLE AND TERMINATE AT NEW POLE MOUNTED TRANSFORMERS AND METER ASSEMBLY.
2. CONTRACTOR SHALL PROVIDE AND INSTALL A 200 AMP CLEP APPROVED COMBINATION METER/SERVICE SWITCH (200 AMP, 240/120V, 1Ø-3W) ON OUTSIDE WALL OF NEW BUILDING.
3. PROVIDE SERVICE GROUND TO WATER MAIN, AND GROUND ROD PER NEW NEC ARTICLE 250 AND UTILITY REQUIREMENTS.
4. PROVIDE PANEL 200A MCB, 240/120V, 1Ø, 3 WIRE, 40 CIRCUIT, RATED FOR SERVICE ENTRANCE, WITH CIRCUIT BREAKERS AS INDICATED ON SCHEDULE.
5. PROVIDE PANEL 100A MLO, 240/120V, 1Ø, 3 WIRE, 40 CIRCUIT WITH CIRCUIT BREAKERS AS INDICATED ON SCHEDULE.
6. REFER TO CONDUCTOR AND CONDUIT SIZING TABLE FOR FEEDER REQUIREMENTS. ALL WIRING BY ELECTRICAL CONTRACTOR.
7. SEAL ALL CONDUITS AS REQUIRED BY CODE.
8. PROVIDE PULL STRINGS AND CONDUIT END COVERS FOR ALL SPARE OR EMPTY CONDUITS.
9. PROVIDE BLACK PAINTED PLYWOOD BACKBOARD. ANCHOR AS REQUIRED FOR SEISMIC LOAD.

FIRE ALARM LEGEND

FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	AFP-200 (FLUSH)
UDACT	DIGITAL DIALER W/ TWO PHONE LINES	UDC-60
	ADA WALL MOUNT HORN/STROBE (OUTDOOR RATED WHERE MARKED WP)	P224MC
	ADA WALL MOUNT STROBE	S224MC
F	ADDRESSABLE MANUAL FIRE ALARM PULL STATION - DUAL ACTION MOUNT AT 48" AFF. W/ KEY RESET.	NBG-12LX
	ADDRESSABLE PHOTOELECTRIC AREA SMOKE DETECTOR	FSP-851
	ADDRESSABLE HEAT DETECTOR 135°F FIXED PLUS RATE OF RISE	FST-851R
C	CONTACTS IN GENERATOR CONTROL PANEL. PROVIDE ADDRESSABLE MODULE FOR MONITORING	FRM-1
R	INTELLIGENT RELAY	FRM-1/SMB500
	ADDRESSABLE DUCT SMOKE DETECTOR W/ SAMPLING TUBE, REMOTE TEST SWITCH AND PHOTOELECTRIC HEAD.	FSD-75RPL
RT	REMOTE TEST STATION	RTS451
R HVAC	HVAC EQUIPMENT SHUT-DOWN MODULE	FRM-1
	END OF LINE RESISTOR	
TS	TAMPER SWITCH	
FS	FLOW SWITCH	
PS	PRESSURE SWITCH	
CO	CO2 DETECTOR	

CONDUCTOR AND CONDUIT SIZING TABLE

CIRCUIT BREAKER	CONDUCTOR (THWN/THHN)	CONDUIT SIZE
20 AMP	#12 + #12 GND	3/4"
30 AMP	#10 + #10 GND	3/4"
40,45,50 AMP	#8 + #10 GND	1
60,70,80 AMP	#6 + #10 GND	1 1/4
90,100 AMP	#3 + #6 GND	1 1/2
125 AMP	#1 + #6 GND	1 1/2
150 AMP	#1/0 + #6 GND	1 1/2
200 AMP	#3/0 + #6 GND	2
225 AMP	#4/0 + #4 GND	2 1/2
250 AMP	#250 + #4 GND	2 1/2
400 AMP	#600 + #3 GND	4"
600 AMP	(2 SETS) #350 + #1 GND	(2) 3
800 AMP	(2 SETS) #500 + #1/0 GND	(2) 4
1000 AMP	(3 SETS) #400 + #2/0 GND	(3) 3-1/2

NOTE 1. ALL VALUES BASED ON COPPER CONDUCTORS.

2. FEEDERS
UPGRADE WIRE TO MAINTAIN MAXIMUM OF 2% VOLTAGE DROP.

BRANCH CIRCUITS
UPGRADE WIRE TO MAINTAIN MAXIMUM OF 3% VOLTAGE DROP.

3. NUMBER OF WIRES SHALL BE DETERMINED WITH EQUIPMENT ELECTRICAL NAMEPLATE CHARACTERISTICS.
4. WHERE NEUTRALS ARE REQUIRED, IT SHALL MATCH FEEDER CONDUCTOR SIZE.

PANEL "A"

RATINGS: 120V/200A
22,000 AIC
SERVICE: 120/240V, 1 PHS/3-WIRE

LOCATION: BASEMENT
MOUNTING: SURFACE

DESCRIPTION	NOTE	AMPS	TRIP AMP	POLE	CKT. TYP	CKT. NO.	A	B	CKT. NO.	CKT. TYP	POLE	TRIP AMP	AMPS	NOTE	DESCRIPTION
						1			2						
						3			4						
						5			6						
						7			8						
						9			10						
						11			12						
						13			14						
						15			16						
						17			18						
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						21			22						
						23			24						
						25			26						
						27			28						
						29			30						
						31			32						
						33			34						
						35			36						
						37			38						
						39			40						

ELECTRICAL NOTES:

1. UPGRADE WIRE SIZE AS REQUIRED TO MAINTAIN 3% MAXIMUM VOLTAGE DROP.
2. TOTAL CONNECTED LOAD: PHASE A = 0.0A, PHASE B = 331.7A
3. CIRCUIT TYPE A: 120V, 3 WIRE IN CONDUIT OR MC CABLE.
4. CIRCUIT TYPE B: 240V, 1Ø, 4 WIRE IN CONDUIT OR MC CABLE.
5. INSTALL CIRCUIT BREAKER LOCK.

PANEL "B"

RATINGS: 120V/100A
22,000 AIC
SERVICE: 120/240V, 1 PHS/3-WIRE

LOCATION: CARRIAGE HOUSE
MOUNTING: SURFACE

DESCRIPTION	NOTE	AMPS	TRIP AMP	POLE	CKT. TYP	CKT. NO.	A	B	CKT. NO.	CKT. TYP	POLE	TRIP AMP	AMPS	NOTE	DESCRIPTION
						1			2						
						3			4						
						5			6						
						7			8						
						9			10						
						11			12						
						13			14						
						15			16						
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						21			22						
						23			24						
						25			26						
						27			28						
						29			30						
						31			32						
						33			34						
						35			36						
						37			38						
						39			40						

ELECTRICAL NOTES:

1. UPGRADE WIRE SIZE AS REQUIRED TO MAINTAIN 3% MAXIMUM VOLTAGE DROP.
2. TOTAL CONNECTED LOAD: PHASE A = 0.0A, PHASE B = 331.7A
3. CIRCUIT TYPE A: 120V, 3 WIRE IN CONDUIT OR MC CABLE.
4. CIRCUIT TYPE B: 240V, 1Ø, 4 WIRE IN CONDUIT OR MC CABLE.
5. INSTALL CIRCUIT BREAKER LOCK.

Project Title:
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Tel. 203 230 9007 Fax. 203 230 8247
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Revision:	Description:	Date:	Revised By:

Drawing Title:
RISER DIAGRAM - ELECTRICAL & FIRE ALARM
51 MAIN STREET

Date: MARCH 23, 2015
Scale: NONE
Drawn By: SEC
SPA Project Number: 14.131

Drawing Number: E15

Addition to:
Durham Volunteer Fire Co.

41 Main Street
Durham, Connecticut 06422

September 14, 2015
Design Development - Progress Set

SILVER / PETRUCELLI + ASSOCIATES
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CS

ABBREVIATIONS

A.B.	ANCHOR BOLT
A.C.P.	ASBESTOS CEMENT PIPE
ADJ.	ADJUSTABLE
A.F.F.	ABOVE FINISH FLOOR
A.C.T.	ACOUSTICAL CEILING TILE
ALUM.	ALUMINUM
APPROX.	APPROXIMATE
ARCH.	ARCHITECTURAL
ASPH.	ASPHALT
AVG.	AVERAGE
BSMT.	BASEMENT
BD.	BOARD
BRG.	BEARING
BRK.	BRICK
BIT.	BITUMINOUS
BLK.	BLOCK
BLDG.	BUILDING
B.S.	BOTH SIDES
C.I.	CAST IRON
C.I.P.	CAST IN PLACE CONCRETE
C.B.	CATCH BASIN
C.B.R.	CATCH BASIN TO BE REMOVED
CLG.	CEILING
℄	CENTER LINE
C. BD.	CHALK BOARD
C.C.	CURB CUT
C.O.	CLEAN OUT
COL.	COLUMN
CONC	CONCRETE
CONF.	CONFERENCE
C.M.U.	CONCRETE MASONRY UNIT
CONT.	CONTINUOUS, CONTINUE
C.J.	CONTROL JOINT/CONSTRUCTION JOINT
CONTR.	CONTRACTOR
DET.	DETAIL
DIA.	DIAMETER
DIM.	DIMENSION
DR.	DOOR
DN.	DOWN
DWG.	DRAWING
E	ELECTRICAL
EA.	EACH
ECTR.	EXISTING CEILING TO REMAIN
ED.	EDUCATION
ELEC.	ELECTRICAL
E.F.	EACH FACE
E.J.	EXPANSION JOINT
EL.	ELEVATION
ELEV.	ELEVATION
EMER.	EMERGENCY
ENCL.	ENCLOSURE
ENL.	ENLARGED
ENT.	ENTRANCE
EP.	EPOXY PAINT
EQ.	EQUAL
E.S.	EXPOSED STRUCTURE
E.T.R.	EXISTING TO REMAIN
E.W.	EACH WAY
E.W./E.F.	EACH WAY/EACH FACE
EXAM.	EXAMINATION
EXIST	EXISTING
EXP.	EXPANSION
EXT.	EXTERIOR
FDN.	FOUNDATION
F.F.	FINISHED FLOOR
FIN.	FINISH, FINISHED
FIXT.	FIXTURE
FL.	FLOOR
FT.	FOOT
F.S.	FAR SIDE
FTG.	FOOTING
G	GAS
GA.	GAGE, GAUGE
GEN.	GENERAL
G.C.	GENERAL CONTRACTOR
GYP.	GYPSUM
GYP. BD.	GYPSUM BOARD
H.C.	HANDICAPPED
HD.	HEADED
HDWR.	HARDWARE
HGT.	HEIGHT
H.P.	HIGH POINT
H.M.	HOLLOW METAL
HORIZ.	HORIZONTAL, HORIZONTALLY
H.B.	HOSE BIBB
HR.	HOUR
HYD.	HYDRANT
INSUL.	INSULATION, INSULATED
INT.	INTERIOR
INV.	INVERT
JAN.	JANITOR
K.P.	KICK PLATE
LAM.	LAMINATE
L.C.C.	LEAD COATED COPPER
L.F.	LINEAL FOOT
LG.	LONG
LOC.	LOCATION
L.P.	LOW POINT
LTG.	LIGHTING
M	MINUTE
MAS.	MASONRY
MAX.	MAXIMUM
MECH.	MECHANICAL
M.H.	MANHOLE
MIN.	MINIMUM
MISC.	MISCELLANEOUS
M.O.	MASONRY OPENING
MTD.	MOUNTED
N.A.	NOT APPLICABLE
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
NOM.	NOMINAL
N.S.	NEAR SIDE
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.C.C.	OCCUPANT
O.D.	OUTSIDE DIAMETER
OPNG.	OPENING
P.C.B.	PAINTED CONCRETE BLOCK
P.G.B.	PAINTED GYPSUM BOARD
PL.	PLATE
PLUMB.	PLUMBING
PLYWD.	PLYWOOD
PREP.	PREPARATION
P.T.	PRESSURE TREATED
PTD.	PAINTED
P.V.C.	POLYVINYL CHLORIDE
R.	RISER
RAD.	RADIUS
R.C.P.	REINFORCED CONCRETE PIPE
R.D.	ROOF DRAIN
REINF.	REINFORCEMENT
REQD.	REQUIRED
R.H.	ROOF HATCH
R.L.	ROOF LEADER
RM.	ROOM
S.	STORM
SAN.	SANITARY
S.C.	SEALED CONCRETE
SCHED.	SCHEDULE
SECT.	SECTION
S.F.	STEP FOOTING
SIM.	SIMILAR
S.O.G.	SLAB ON GRADE
SPEC.	SPECIFICATIONS
SQ.	SQUARE
SQ. FT.	SQUARE FEET
STL.	STEEL
STRUCT.	STRUCTURAL
SUSP.	SUSPENDED, SUSPENSION
S.W.	SHEAR WALL
S.W.F.	SHEAR WALL FOOTING
T.	TELEPHONE
T&B	TOP & BOTTOM
TECH.	TECHNOLOGY
T.O.	TOP OF
T.O.F.	TOP OF FRAME
T.O.S.	TOP OF STEEL
T/S	TOP OF SLAB
T/W	TOP OF WALL
TYP.	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
V.B.	VINYL BASE
V.C.T.	VINYL COMPOSITE TILE
VERT.	VERTICAL
V.I.F.	VERIFY IN FIELD
W.	WATER
W/	WITH
WCJ	WALL CONTROL JOINT
WD.	WOOD
WF.	WIDE FLANGE
W.W.F.	WELDED WIRE FABRIC
W.W.M.	WELDED WIRE MESH
@	AT
Φ	DIAMETER

SYMBOL LEGEND

XXX	ROOM NUMBER
XX	DOOR NUMBER
XX	EQUIPMENT NUMBER
XX	DEMOLITION NOTE
XX	WINDOW TYPE
XX / XX	DETAIL NUMBER / DRAWING NUMBER
XX	CONSTRUCTION NOTE
X / X	SECTION/DETAIL DRAWING NUMBER
XX / XX	WALL SECTION DRAWING NUMBER
XX / XX	INTERIOR/EXTERIOR ELEVATION DRAWING NUMBER
	REFERENCE POINT
XX	WALL TYPE
X	REVISION MARK

GRAPHIC LEGEND

	CONCRETE
	CONCRETE MASONRY UNITS
	BRICK
	STONE
	METALS
	COMPACTED GRAVEL
	EARTH
	PLYWOOD
	ACOUSTICAL TILE
	WOOD FRAMING - THROUGH MEMBER
	WOOD FRAMING - INTERRUPTED MEMBER
	FINISHED WOOD
	BATT INSULATION
	RIGID INSULATION
	GYPSUM BOARD

GENERAL NOTES

1. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS & DIMENSIONS
2. ALL MATERIALS & EQUIPMENT ARE NEW UNLESS OTHERWISE NOTED AS 'EXISTING'
3. ALL EXISTING UTILITES & EQUIPMENT LOCATIONS ARE APPROXIMATE - CONTRACTOR TO FIELD VERIFY EXACT LOCATIONS
4. CONTRACTOR ASSUMES ALL RESPONSIBILITY DURING CONSTRUCTION AND WILL REPLACE ANY & ALL DAMAGED ITEMS & EQUIPMENT WITH NO ADDITIONAL COST TO THE OWNER
5. ALL DOORS LEADING TO HAZARDOUS AREAS SHALL HAVE TACTILE WARNING. HAZARDOUS AREAS INCLUDE CUSTODIAN SPACES, STORAGE, BOILER ROOM, TRASH ROOMS, FINISHING ROOMS, MECHANICAL ROOMS, ELECTRICAL TRANSFORMER VAULTS, ETC.
6. ALL DOORS EXITING 100 PERSONS OR MORE SHALL HAVE PANIC EXIT DEVICES
7. ALL HANDICAP ACCESSIBLE DOOR HARDWARE SHALL BE PROVIDED TO COMPLY WITH UNIFORM FEDERAL ACCESSIBILITY STANDARDS
8. ITEMS 5 THROUGH 7 ARE A MINIMUM STANDARD - REFER TO DOOR SCHEDULE ON DRAWING A17 FOR EXACT REQUIREMENTS OF ALL DOORS, FRAMES, AND HARDWARE
9. IF A NOTE IS FOUND ON THE ARCHITECTURAL DRAWINGS READING 'SEE STRUCTURAL DRAWINGS' AND THE SIZE AND DETAILING OF MEMBERS IS NOT FOUND THE CONTRACTOR SHALL CONTACT THE ARCHITECT TO REQUEST THE MISSING INFORMATION. THESE ITEMS SHALL BE PART OF THE BASE BID AND THE STEEL SUBCONTRACTOR SHALL REVIEW STRUCTURAL AS WELL AS ARCHITECTURAL PRIOR TO BIDDING.

NORTH

LOCATION MAP

SCALE: NONE

LIST OF DRAWINGS

GENERAL INFORMATION & CODE DRAWINGS

CS - COVER SHEET
A00 - GENERAL INFORMATION
A0.1 - CODE INFORMATION

ARCHITECTURAL DRAWINGS

A01 - DEMOLITION PLAN
A02 - FLOOR PLAN
A03 - ROOF PLAN
A04 - EXTERIOR ELEVATIONS
A05 - BUILDING SECTIONS
A06 - WALL SECTIONS
A08 - DOOR SCHEDULE & DETAILS
A09 - WINDOW & LOUVER ELEVATIONS & DETAILS

STRUCTURAL DRAWINGS

S1 - FOUNDATION PLAN
S2 - ROOF FRAMING PLAN

LIST OF DRAWINGS

MECHANICAL DRAWINGS

MD1 - MECHANICAL DEMOLITION PLAN
M01 - MECHANICAL PLAN
M02 - SCHEDULE & BOILER DIAGRAM

PLUMBING DRAWINGS

P01 - PLUMBING DEMOLITION PLAN
P02 - PLUMBING NEW WORK
P03 - PLUMBING NOTES, LEGENDS, SCHEDULES & DETAILS

ELECTRICAL DRAWINGS

ED1 - ELECTRICAL DEMOLITION PLAN
E1 - LIGHTING PLAN
E2 - POWER PLAN
E3 - LIGHTING AND EQUIPMENT SCHEDULES & LEGENDS
E4 - ONE LINE RISER DIAGRAM & FACP RISER DIAGRAM
E5 - DETAILS & PANEL SCHEDULES

Project Title:
Addition to
Durham Volunteer Fire Co.
41 Main Street
Durham, Connecticut 06422

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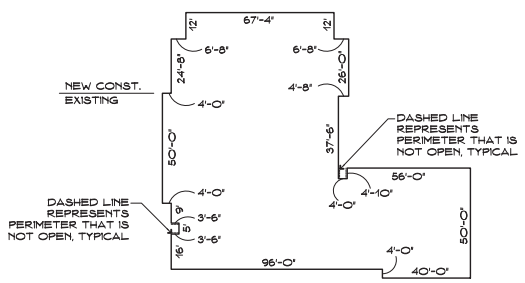
Revision:	Description:	Date:	Revised By:

Drawing Title: General Information

Date: SEPTEMBER 14, 2015
Scale: AS NOTED
Drawn By: JJM
SPA Project Number: 15.037

Drawing Number: A00



1. SOUTH PERIMETER = 148'-2" LF
2. NORTH PERIMETER = 148'-2" LF
3. EAST PERIMETER = 125'-6" LF
4. WEST PERIMETER = 125'-6" LF

TOTAL PERIMETER = 547'-4" LF

1. SOUTH OPEN PERIMETER = 144'-8" LF
2. NORTH OPEN PERIMETER = 144'-8" LF
3. EAST OPEN PERIMETER = 120'-8" LF
4. WEST OPEN PERIMETER = 120'-8" LF

TOTAL OPEN PERIMETER = 530'-8" LF

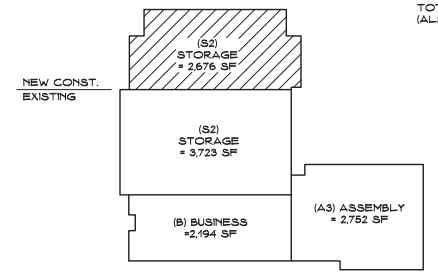
NORTH

MAIN FLOOR - TOTAL PERIMETER (1 / A0.1)

SCALE: 1/32" = 1'-0"

NEW CONSTRUCTION = 2,676
EXISTING FACILITY = 8,669

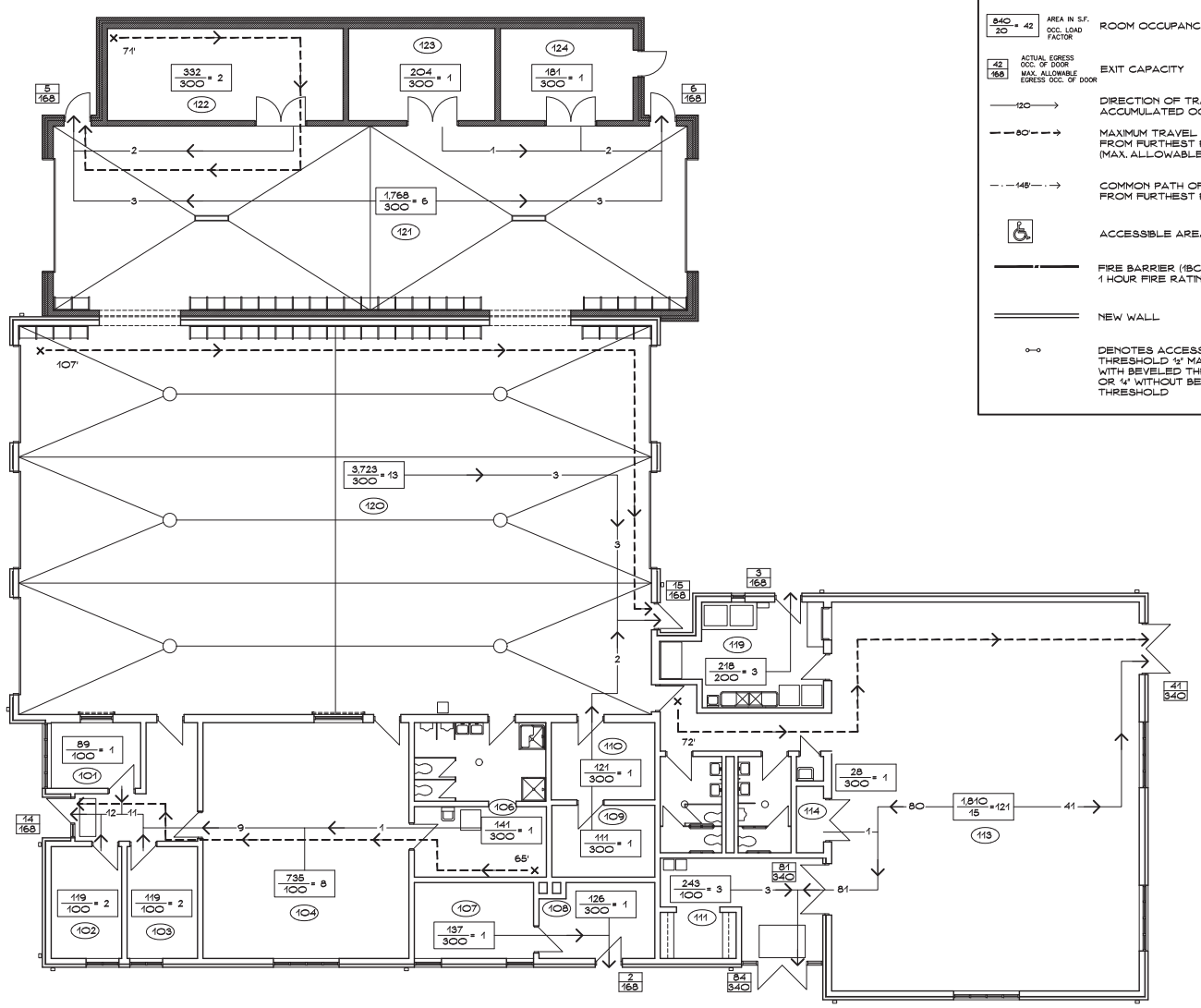
TOTAL AREA = 11,345
(ALL USE GROUPS)



NORTH

MAIN FLOOR - USE GROUP AREA (2 / A0.1)

SCALE: 1/32" = 1'-0"



PROJECT NORTH

MAIN LEVEL CODE PLAN (3 / A0.1)

SCALE: 1/8" = 1'-0"

SYMBOL LEGEND

110	ROOM NUMBER
840 / 20 = 42 (AREA IN S.F.; OCC. LOAD FACTOR)	ROOM OCCUPANCY LOAD
42 / 168 (ACTUAL EGRESS OCC. OF DOOR; MAX. ALLOWABLE EGRESS OCC. OF DOOR)	EXIT CAPACITY
—120→	DIRECTION OF TRAVEL W/ ACCUMULATED OCC. LOAD
— —80'— →	MAXIMUM TRAVEL DISTANCE FROM FURTHEST POINT (MAX. ALLOWABLE 150')
—·—148'—·→	COMMON PATH OF TRAVEL FROM FURTHEST POINT
5	ACCESSIBLE AREA OR EXIT
—·—	FIRE BARRIER (IBC 702.1) 1 HOUR FIRE RATING
═══	NEW WALL
o—o	DENOTES ACCESSIBLE THRESHOLD '½' MAX STEP WITH BEVELED THRESHOLD OR '¼' WITHOUT BEVELED THRESHOLD

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Revision:	Description:	Date:	Revised By:

Drawing Title: Code Information

Date: SEPTEMBER 14, 2015
Scale: AS NOTED
Drawn By: JJM
SPA Project Number: 15.037

Drawing Number: A0.1

LEGEND:

EXISTING WALLS TO REMAIN

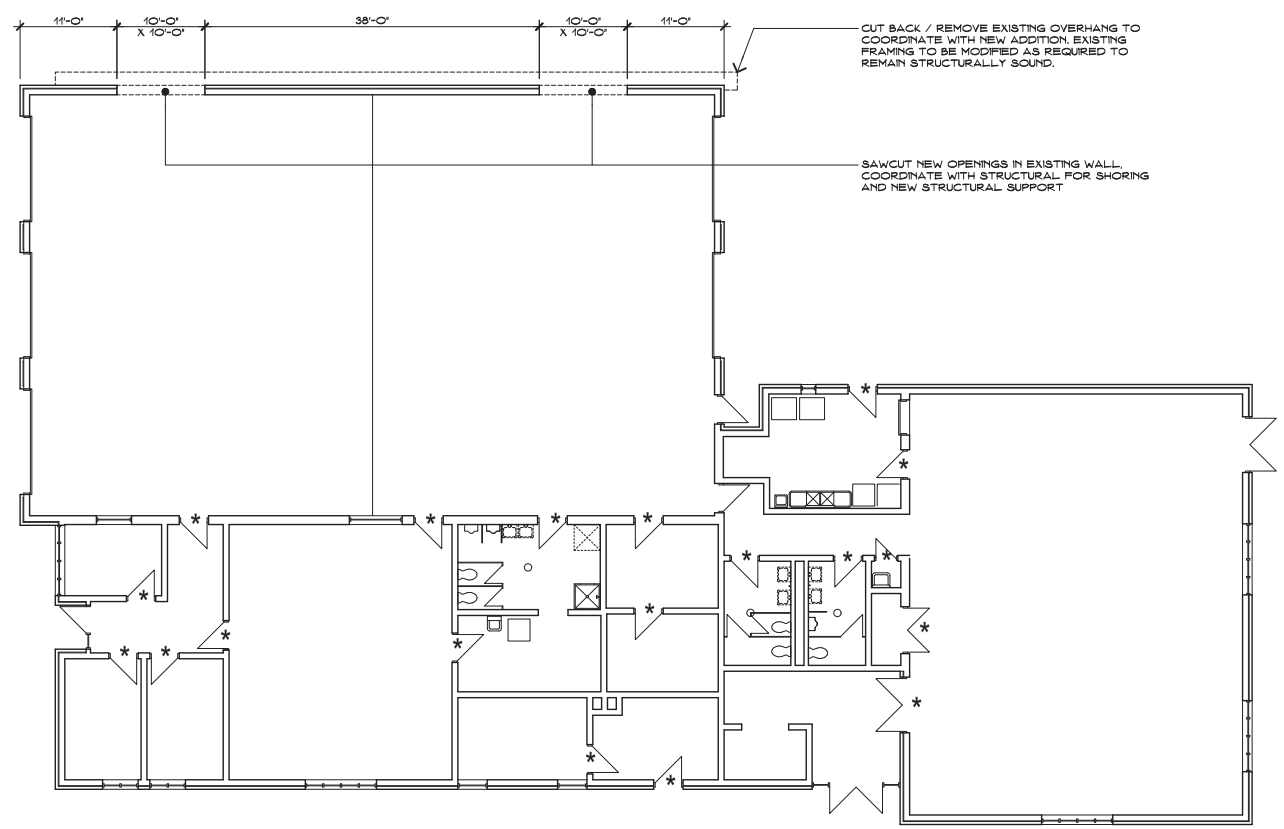
EXISTING WALLS TO BE REMOVED

EXISTING PLUMBING FIXTURES TO BE REMOVED.
SEE ALSO PLUMBING DRAWINGS

DASHED LINES INDICATE REMOVALS. SEE DEMOLITION NOTES ON ARCHITECTURALS AS WELL AS ALL M.E.P. DRAWINGS.

* EXISTING DOORS TO HAVE EXISTING LOCKSETS REMOVED AND RECEIVE NEW HARDWARE.

NOTE:
SEE ALSO MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR ADDITIONAL REMOVALS REQUIRED.



NORTH

DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

1 / A01

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Revision	Description	Date	Revised By

Drawing Title: DEMOLITION PLAN

Date: SEPTEMBER 14, 2015
Scale: 1/8" = 1'-0"
Drawn By: JJM
SPA Project Number: 15.037

Drawing Number: A01

LEGEND:

EXISTING WALLS TO REMAIN

NEW WALLS

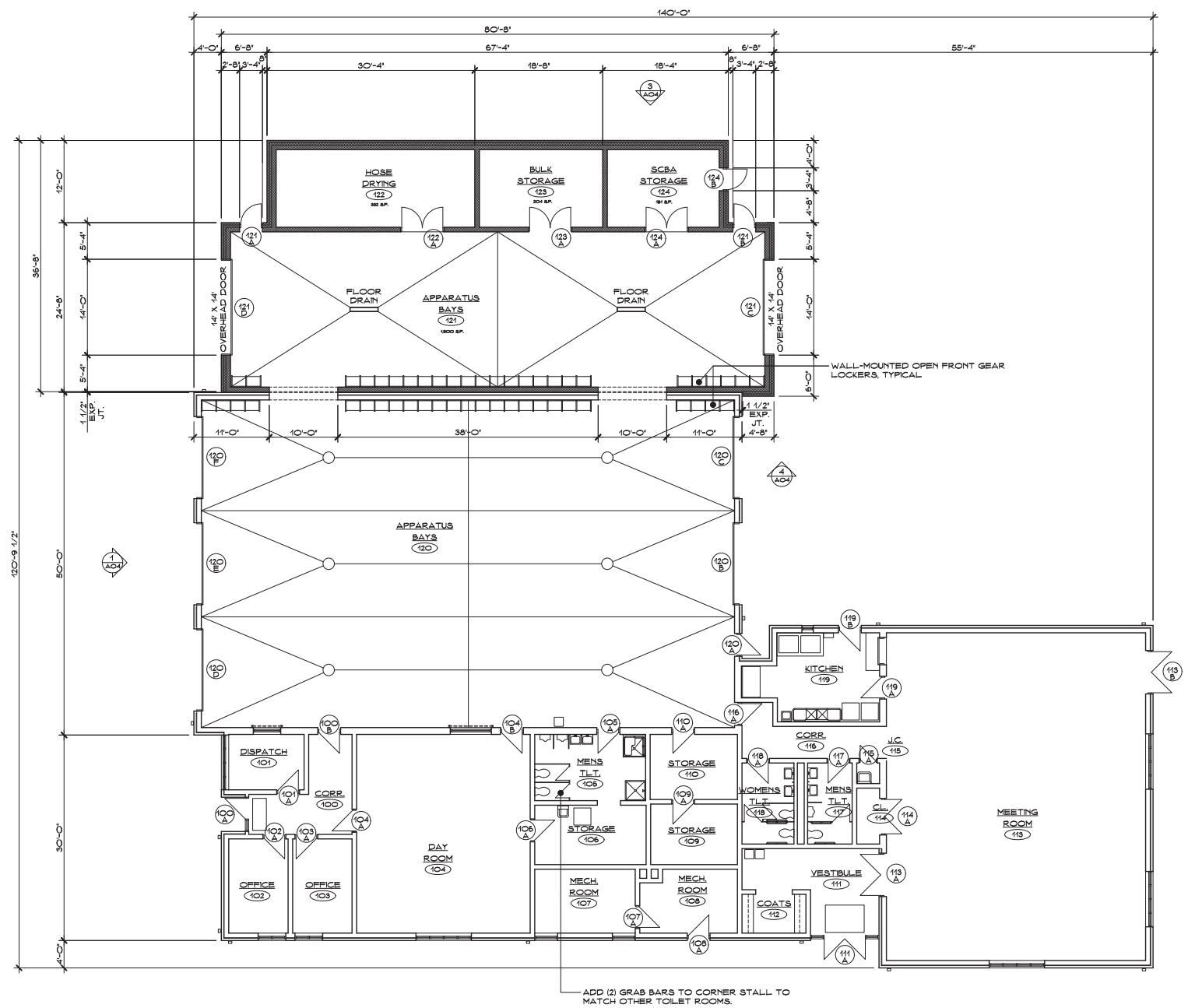
NEW PLUMBING FIXTURES, SEE PLUMBING DRAWINGS

NEW DOOR

NOTE:
SEE ALSO STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR ADDITIONAL WORK REQUIRED.

GENERAL NOTES:

1. EXISTING DOORS TO RECEIVE NEW LOCK SETS. COORDINATE WITH DEMO PLAN FOR LOCATIONS.
2. RELOCATE ALL EXISTING TOILET ACCESSORIES TO MEET ADA MOUNTING HEIGHT STANDARDS IN TOILET ROOMS: 105, 117 AND 118.
3. REMOVE AND REPLACE / PATCH EXISTING WALL CONSTRUCTION AS REQUIRED TO INSTALL NEW TOILET FIXTURES.
4. ALL EXISTING AND NEW SPACES ARE TO RECEIVE ROOM SIGNS PER ADA REQUIREMENTS.



NORTH

FLOOR PLAN
SCALE: 1/8" = 1'-0"
1 / A02

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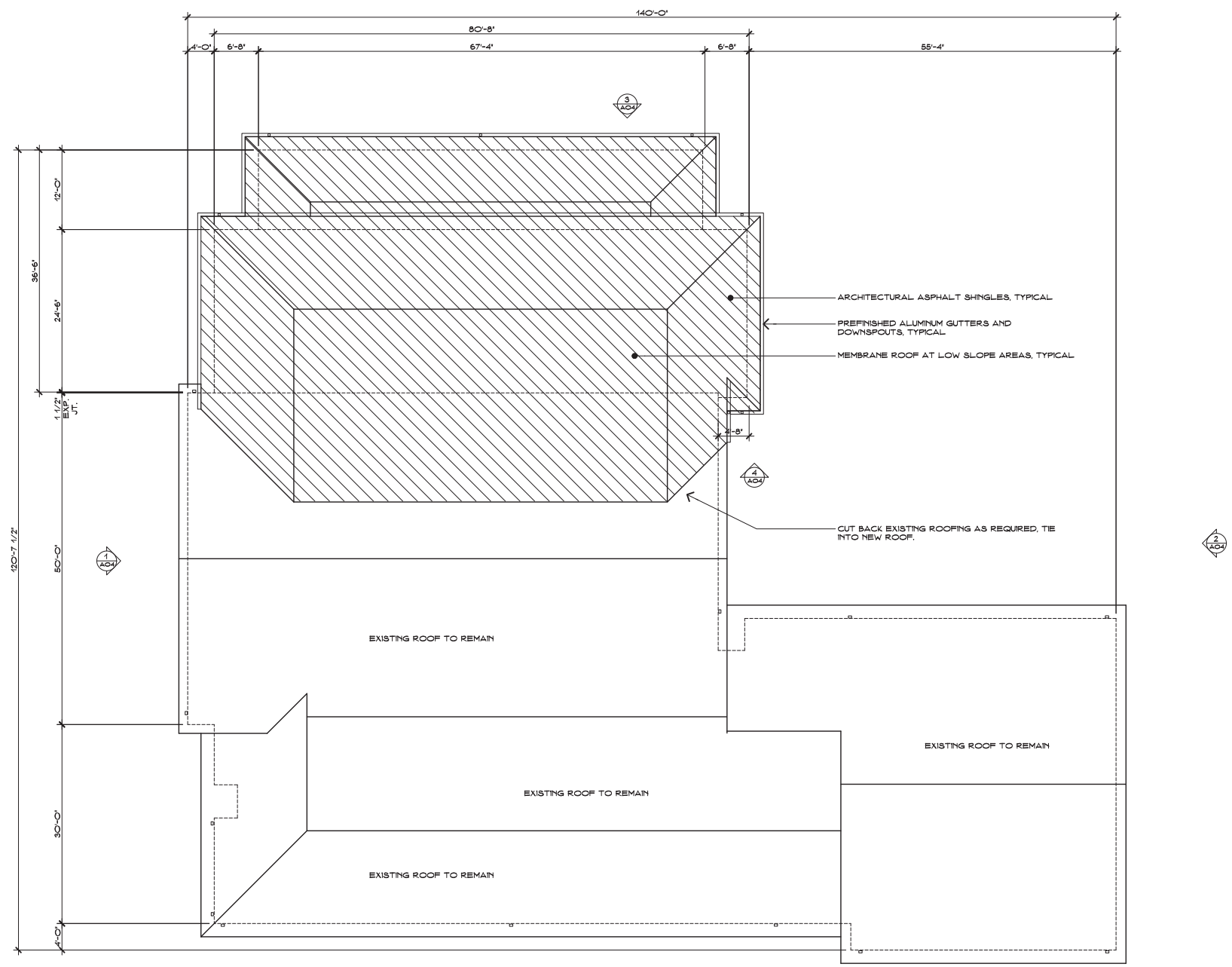
Revision	Description	Date	Revised By

Drawing Title: FLOOR PLAN

Date: SEPTEMBER 14, 2015
Scale: 1/8" = 1'-0"
Drawn By: JJM
SPA Project Number: 15.037

Drawing Number: A02



NORTH

ROOF PLAN

SCALE: 1/8" = 1'-0"

1
A03

Project Title:
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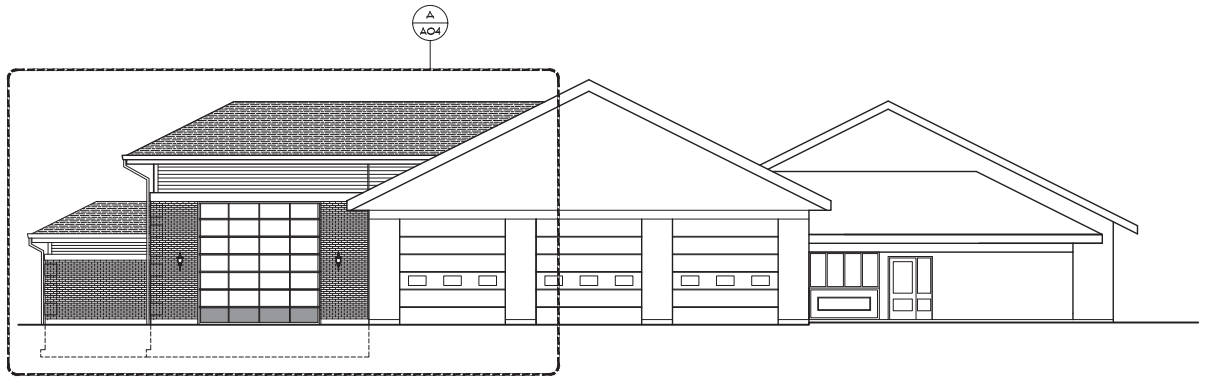
Revision	Description	Date	Revised By

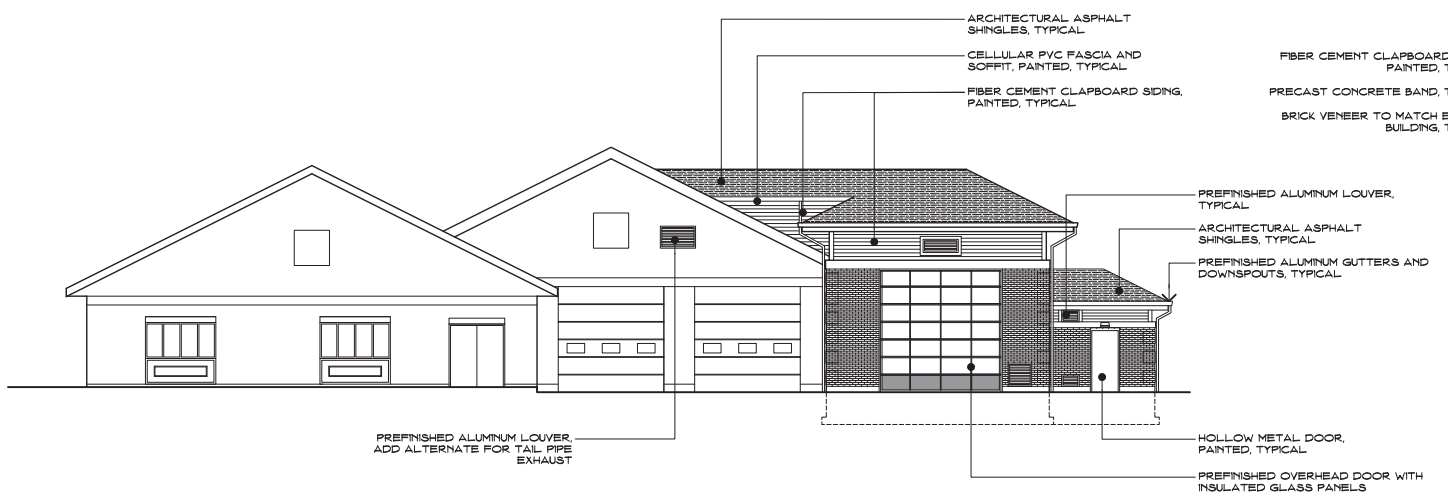
Drawing Title: ROOF PLAN

Date: SEPTEMBER 14, 2015
Scale: 1/8" = 1'-0"
Drawn By: JJM
SPA Project Number: 15.037

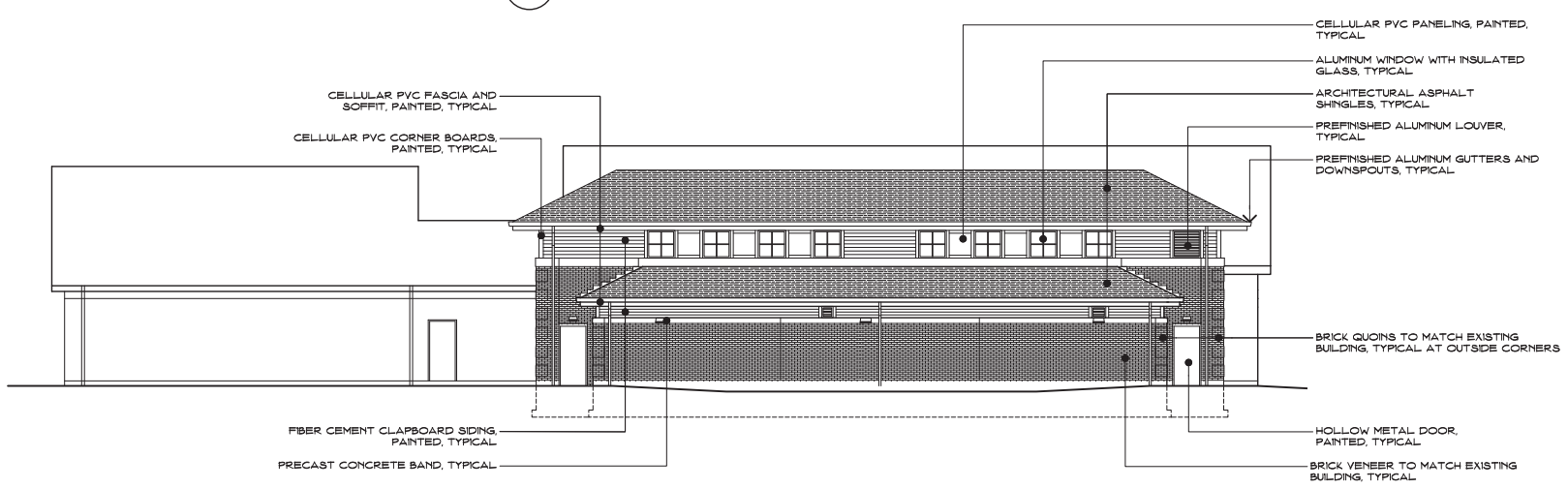
Drawing Number: A03



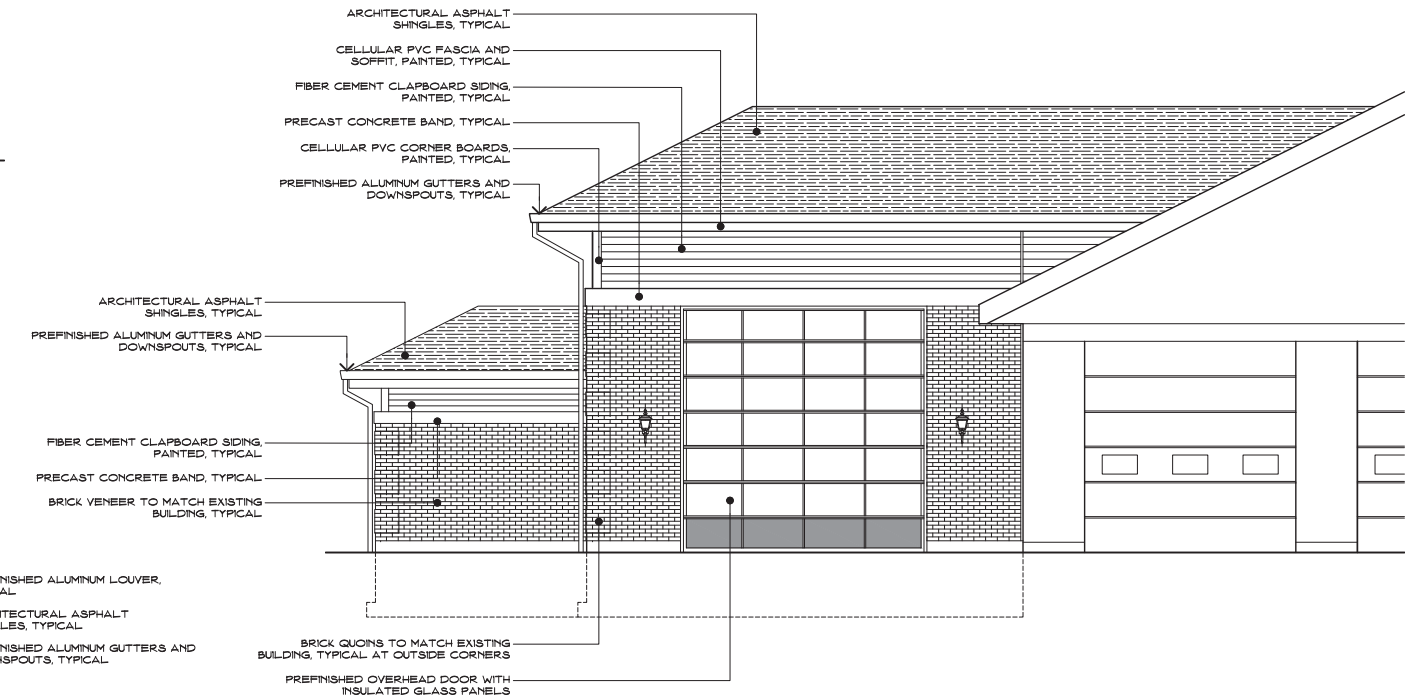
WEST ELEVATION (1 / A04)
SCALE: 1/8" = 1'-0"



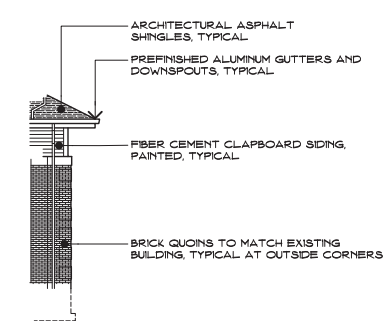
EAST ELEVATION (2 / A04)
SCALE: 1/8" = 1'-0"



NORTH ELEVATION (3 / A04)
SCALE: 1/8" = 1'-0"



ELEVATION DETAIL (A / A04)
SCALE: 1/4" = 1'-0"



SOUTH ELEVATION (PARTIAL) (4 / A04)
SCALE: 1/8" = 1'-0"

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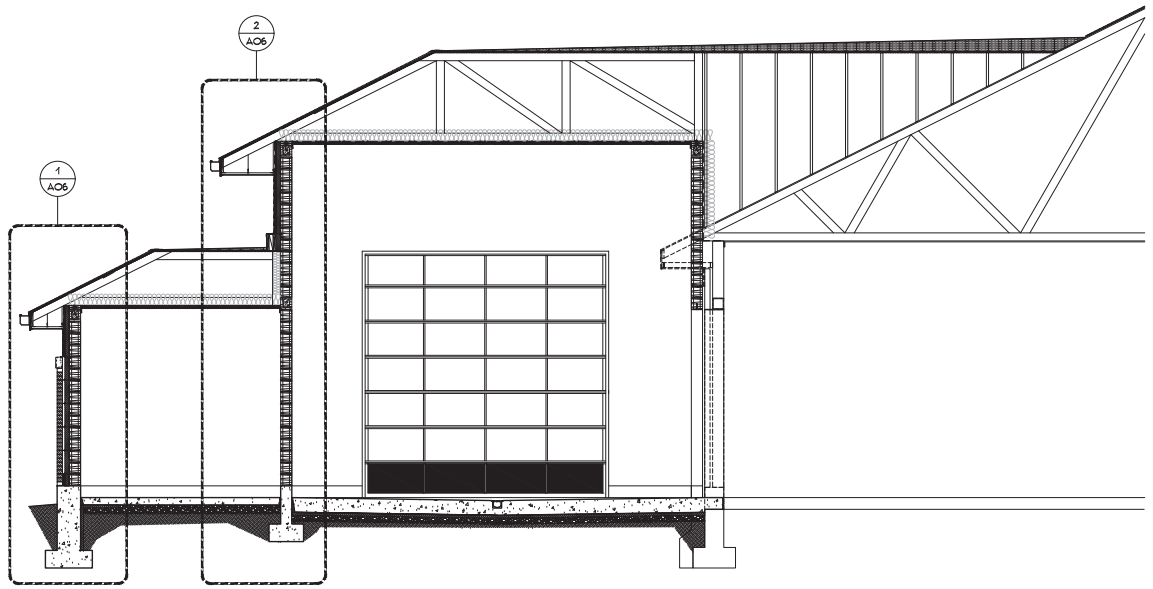
Revision	Description	Date	Revised By

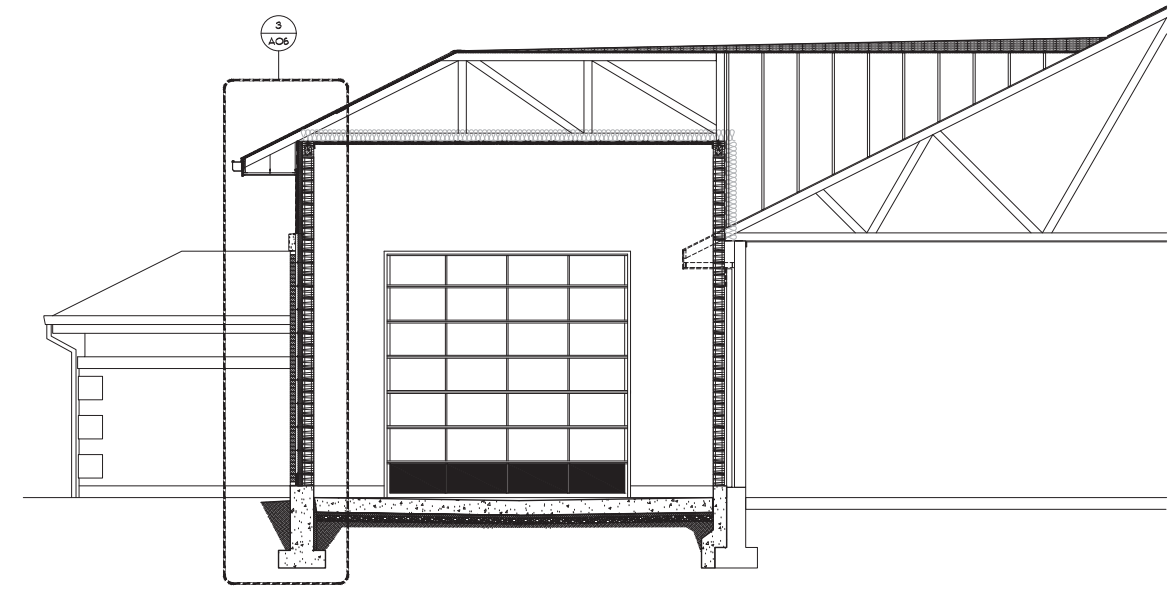
Drawing Title: EXTERIOR ELEVATIONS

Date: SEPTEMBER 14, 2015
Scale: 1/8" = 1'-0"
Drawn By: JJM
SPA Project Number: 15.037

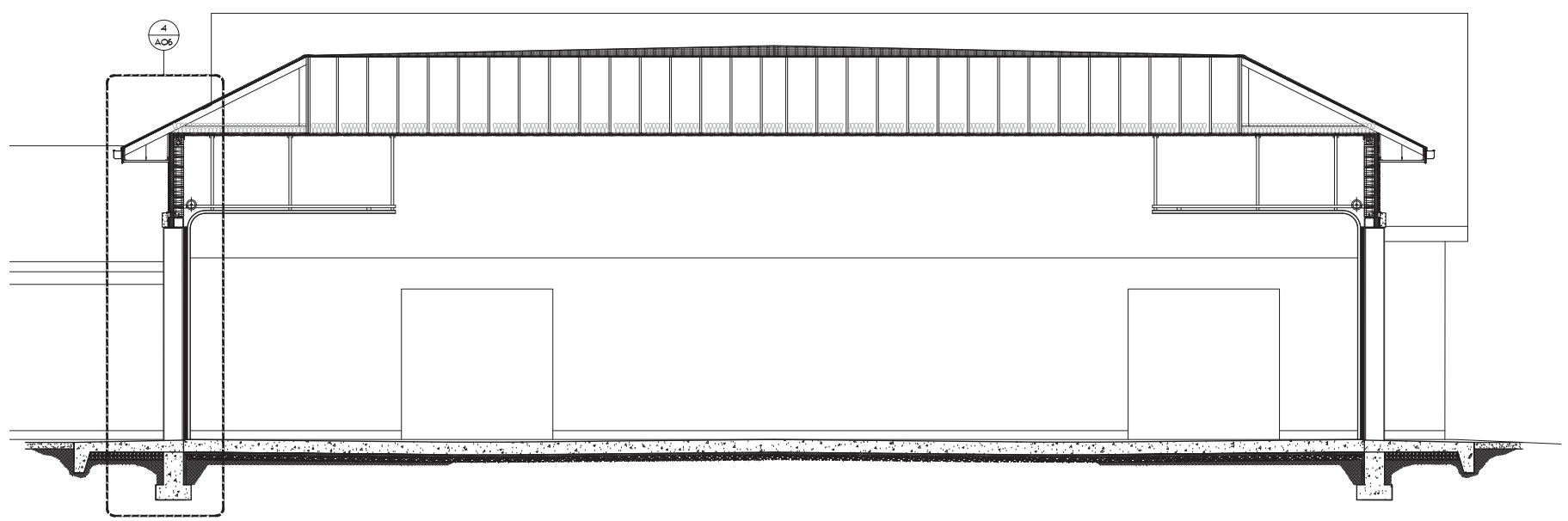
Drawing Number: A04



BUILDING SECTION 1/A05
SCALE: 1/4" = 1'-0"



BUILDING SECTION 2/A05
SCALE: 1/4" = 1'-0"



BUILDING SECTION 3/A05
SCALE: 1/4" = 1'-0"

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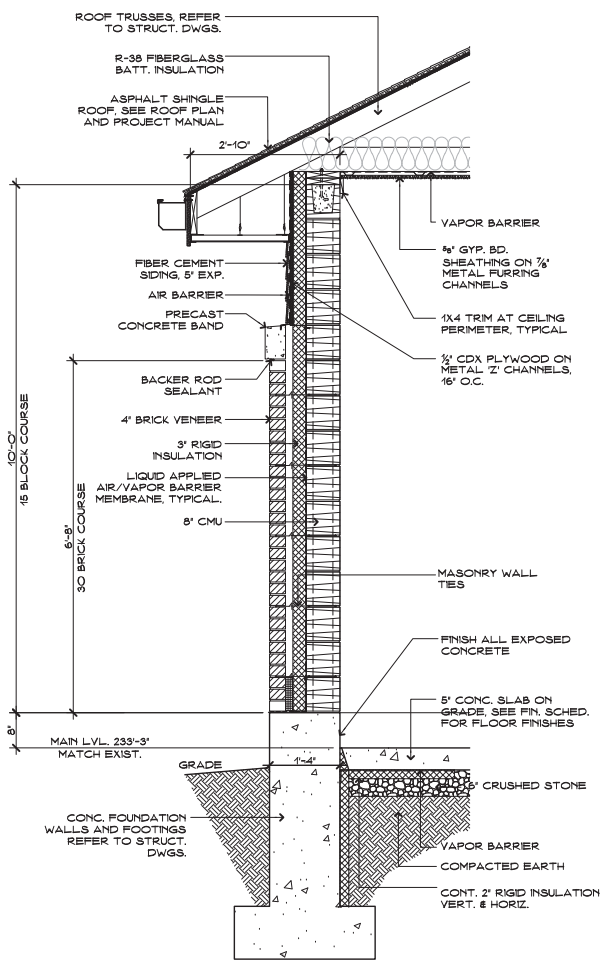
Revision	Description	Date	Revised By

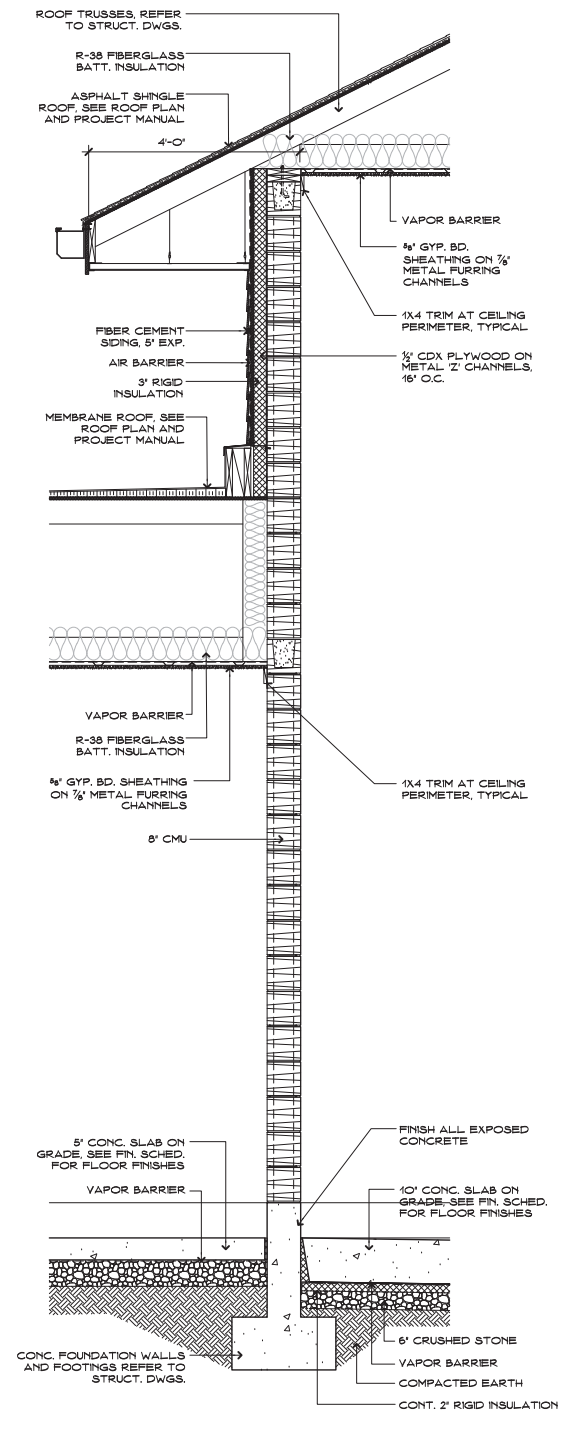
Drawing Title:
BUILDING SECTIONS

Date: SEPTEMBER 14, 2015
Scale: 1/4" = 1'-0"
Drawn By: JJM
SPA Project Number: 15.037

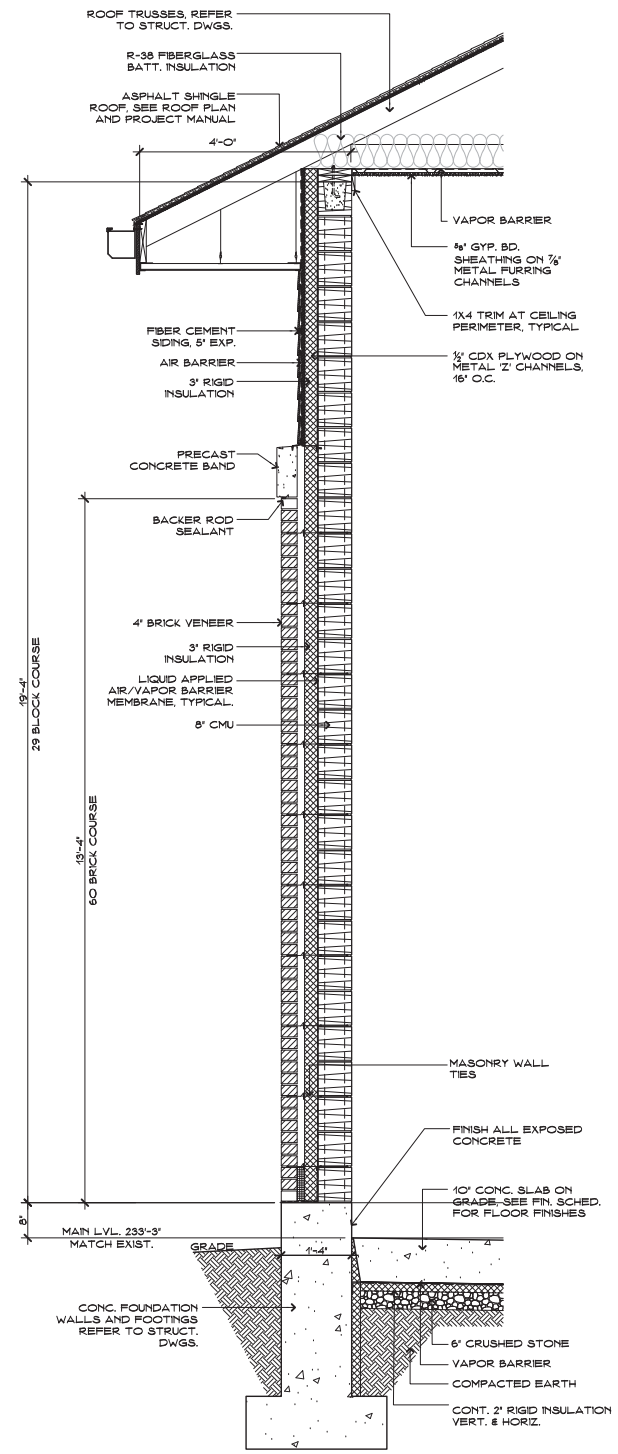
Drawing Number:
A05



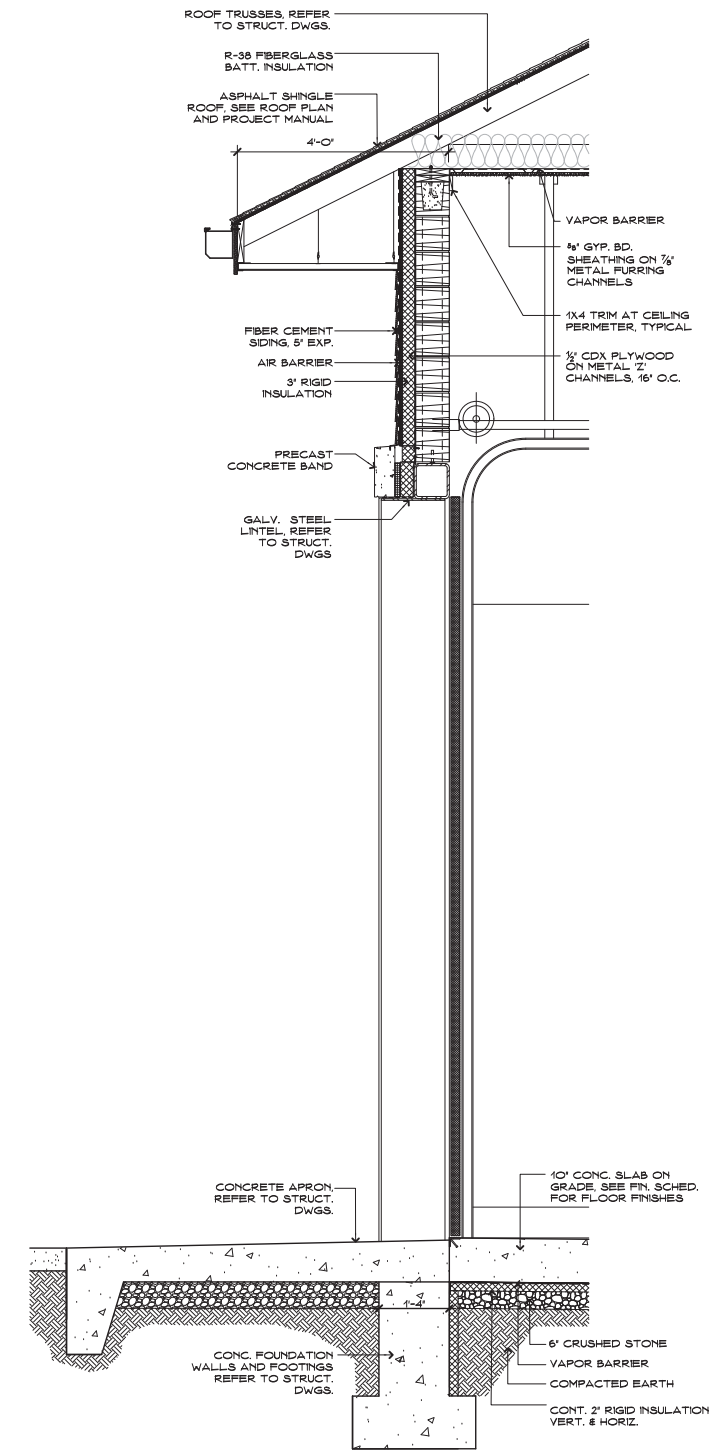
WALL SECTION 1 A06
SCALE: 3/4" = 1'-0"



WALL SECTION 2 A06
SCALE: 3/4" = 1'-0"



WALL SECTION 3 A06
SCALE: 3/4" = 1'-0"



WALL SECTION 4 A06
SCALE: 3/4" = 1'-0"

Project Title:
Addition to

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Architects / Engineers / Interior Designers

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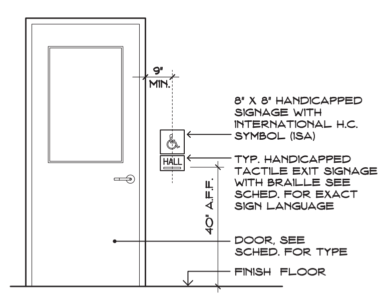
Revision:	Description:	Date:	Revised By:

Drawing Title:
WALL SECTIONS

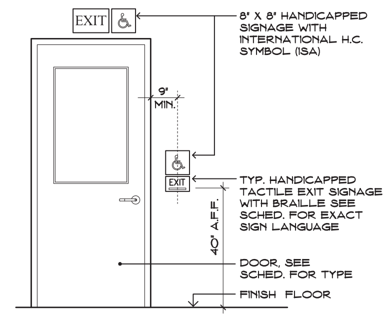
Date: SEPTEMBER 14, 2015
Scale: 3/4" = 1'-0"
Drawn By: JJM
SPA Project Number: 15.037

Drawing Number:
A06



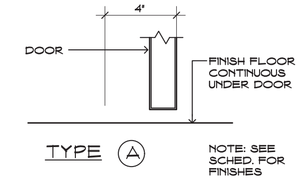
TYP. H.C. DOOR DETAIL (A/A08)

SCALE: 1/2" = 1'-0"
NOTE: APPLICABLE AT SINGLE & DOUBLE DOORS



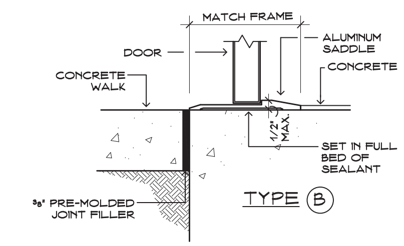
TYP. H.C. EXIT DOOR DETAIL (A1/A08)

SCALE: 1/2" = 1'-0"
NOTE: APPLICABLE AT SINGLE & DOUBLE DOORS



TYPE (A)

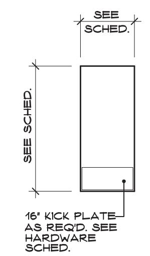
NOTE: SEE SCHED. FOR FINISHES



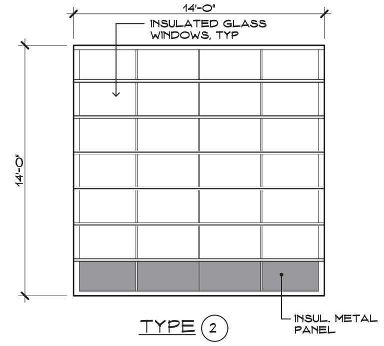
TYPE (B)

SADDLE DETAILS (D/A08)

SCALE: 3" = 1'-0"



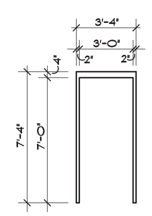
TYPE (1)



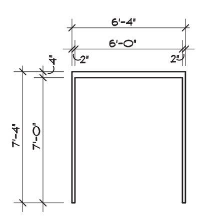
TYPE (2)

DOOR ELEVATIONS (B/A08)

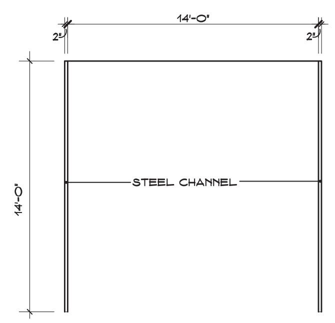
SCALE: 1/4" = 1'-0"



TYPE (A)



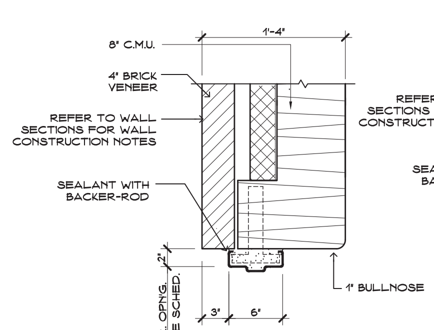
TYPE (B)



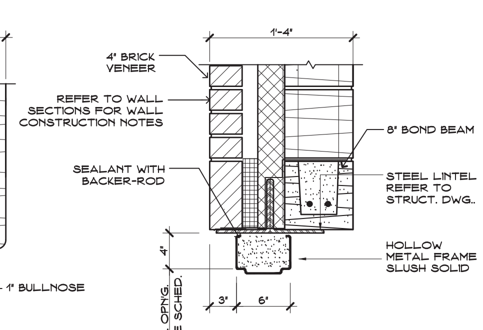
TYPE (C)

HM DOOR FRAME ELEVATIONS (C/A08)

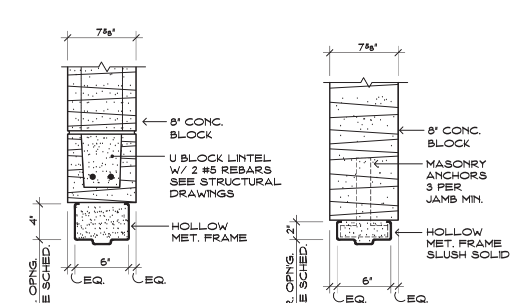
SCALE: 1/4" = 1'-0"



JAMB (A)

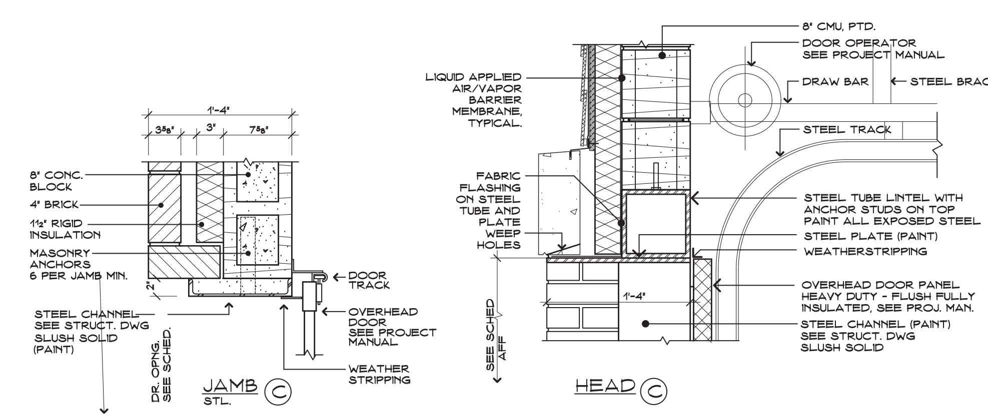


HEAD (A)



HEAD (B)

JAMB (B)



JAMB (C)
STL.

HEAD (C)

HEAD & JAMB DETAILS (E/A08)

SCALE: 1½" = 1'-0"

DOOR SCHEDULE

			DOOR													FRAME						FIRE RATING					HARDWARE - SEE SPECIFICATIONS													REMARKS
			SIZE														DETAIL/SHEET NO.										FIRECODE							DISABLED REQUIREMENTS						
DOOR NUMBER	ROOM NAME	ROOM NUMBER	DOUBLE LEAF DOOR	3'-0" X 7'-0"	2'-6" X 7'-0"	3'-0" X 7'-8"	3'-0" X 3'-10"	3'-6" X 7'-0"	3'-0" X 7'-10"	3'-0" X 3'-2"	EXISTING TO REMAIN	SPECIAL - SEE REMARKS	TYPE	MATERIAL	GLAZING	TYPE - SEE FRAME ELEV.	MATERIAL	HEAD DETAIL	JAMB DETAIL	SADDLE DETAIL	GLAZING	RESISTS PASSAGE OF SMOKE	90 MINUTE LABELED	60 MINUTE LABELED	45 MINUTE LABELED	CONCEALED FLSH BLTS W/PANIC BAR	PANIC RELEASE LATCH	LATCHING/LOCKABLE	AUTOMATIC CLOSER	FLUSH BOLTS TOP/BOTTOM	MAGNET DOOR CATCH	PUSH/PULL/LOCKABLE	SECURITY DEV. SEE ELEC.	POWER ASSIST OPERATOR	LEVER HANDLES/LOCK.	KICK PLATES	TACTILE WARNING	ACCESSIBLE THRESHOLD		
100A	CORRIDOR	100									○																		○				○		○			●		
100B	CORRIDOR	100									○																	●	●						●					
101A	DISPATCH	101									○																	●							●			●		
102A	OFFICE	102									○																	●							●			●		
103A	OFFICE	103									○																	●							●			●		
104A	DAY ROOM	104									○																	●	●						●			●		
104B	DAY ROOM	104									○																	●	●						●					
105A	MEN'S TOILET	105									○																	●	●						●					
106A	STORAGE	106									○																	●	●						●			●		
107A	MECHANICAL ROOM	107									○																	●	●						●		●	●		
108A	MECHANICAL ROOM	108									○																	●	●						●		●	●		
109A	STORAGE	109									○																	●	●						●			●		
110A	STORAGE	110									○																	●	●						●					
111A	VESTIBULE	111	○								○																○	○	○						○			●		
113A	MEETING ROOM	113	○								○																		●			●			●			●		
113B	MEETING ROOM	113	○								○																○	○	○						○			●		
114A	CLOSET	114	○								○																	●							●			●		
115A	JANITOR	115									○																	●	●						●		●	●		
116A	CORRIDOR	116									○																	○	○				○		○					
117A	MEN'S TOILET	117									○																	●	●						●			●		
118A	WOMEN'S TOILET	118									○																	●	●						●			●		
119A	KITCHEN	119									○																	●	●						●			●		
119B	KITCHEN	119									○																	●	●						●					
120A	APPARATUS BAYS	120									○																	○	○				○		○			●		
120B	APPARATUS BAYS	120									○																	○												
120C	APPARATUS BAYS	120									○																	○												
120D	APPARATUS BAYS	120									○																	○												
120E	APPARATUS BAYS	120									○																	○												
120F	APPARATUS BAYS	120									○																	○												
121A	APPARATUS BAYS	121		●									1	HM		A	HM	A	A	B								●	●						●	●		●		
121B	APPARATUS BAYS	121		●									1	HM		A	HM	A	A	B								●	●						●	●		●		
121C	APPARATUS BAYS	121										●	2	STL	1" INSUL.TEMP.	C	STL	C	C	✳	●							●												14'W X 14'H O.H. GARAGE DOOR
121D	APPARATUS BAYS	121										●	2	STL	1" INSUL.TEMP.	C	STL	C	C	✳	●							●												14'W X 14'H O.H. GARAGE DOOR
122A	HOSE DRYING	122	●	●									1	HM		B	HM	B	B	A								●							●	●		●		
123A	BULK STORAGE	123	●	●									1	HM		B	HM	B	B	A								●							●	●		●		
124A	SCBA STORAGE	124	●	●									1	HM		B	HM	B	B	A								●							●	●		●		
124B	SCBA STORAGE	124		●									1	HM		A	HM	A	A	B								●	●						●	●		●		

REMARKS:
● - INDICATES NEW WORK
○ - INDICATES EXISTING TO REMAIN
□ - INDICATES EXISTING TO BE RELOCATED
■ - INDICATES EXISTING TO BE REMOVED
EXISTING DOOR INFO.
NEW DOOR INFO.

LEGEND
HM - HOLLOW METAL
WD - WOOD
AL - ALUMINUM
STL. - STEEL
INSUL. - INSULATED
TEMP. - TEMPERED
EXT. - EXTERIOR
CL - CLAD
GA - GALVANIZED
F.R. - FIRE RATED

GENERAL NOTES:
1. NOTE: ALL GALVANIZED DOORS AND FRAMES SHALL BE PAINTED
2. ✳ SEE DETAIL
3. SEE PROJECT MANUAL FOR GALVANIZED DOOR LOCATIONS.

Project Title:
Addition to
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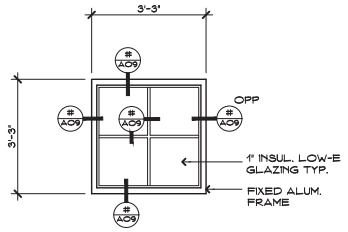
Revision: Description: Date: Revised By:

Drawing Title:
DOOR SCHEDULE
& DETAILS

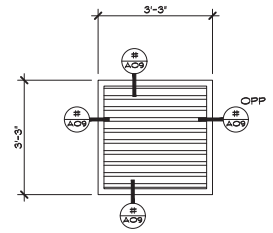
Date: SEPTEMBER 14, 2015
Scale: AS NOTED
Drawn By: JJM
SPA Project Number: 15.037
Drawing Number: A08



TYPE W1

WINDOW TYPE W1/A09

SCALE: 1/2" = 1'-0"

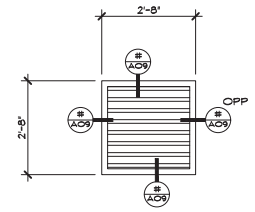


TYPE L1

DRAINABLE EXTRUDED ALUMINUM LOUVER WITH BIRDSCREEN

LOUVER TYPE L1/A09

SCALE: 1/2" = 1'-0"

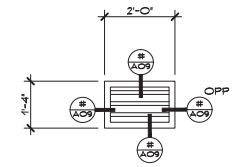


TYPE L2

DRAINABLE EXTRUDED ALUMINUM LOUVER WITH BIRDSCREEN

LOUVER TYPE L2/A09

SCALE: 1/2" = 1'-0"

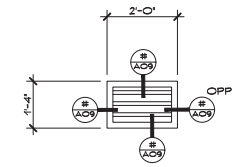


TYPE L3

DRAINABLE EXTRUDED ALUMINUM LOUVER WITH BIRDSCREEN

LOUVER TYPE L3/A09

SCALE: 1/2" = 1'-0"

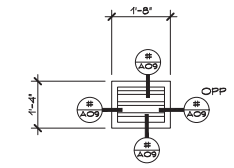


TYPE L3A

DRAINABLE EXTRUDED ALUMINUM LOUVER WITH BIRDSCREEN

LOUVER TYPE L3A/A09

SCALE: 1/2" = 1'-0"

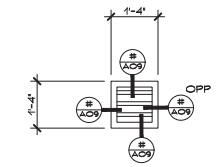


TYPE L4

DRAINABLE EXTRUDED ALUMINUM LOUVER WITH BIRDSCREEN

LOUVER TYPE L4/A09

SCALE: 1/2" = 1'-0"

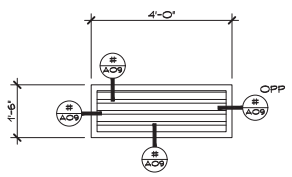


TYPE L5

DRAINABLE EXTRUDED ALUMINUM LOUVER WITH BIRDSCREEN

LOUVER TYPE L5/A09

SCALE: 1/2" = 1'-0"

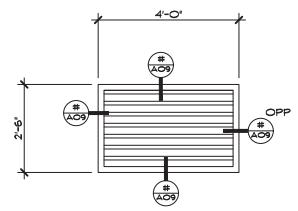


TYPE L6

DRAINABLE EXTRUDED ALUMINUM LOUVER WITH BIRDSCREEN

LOUVER TYPE L6/A09

SCALE: 1/2" = 1'-0"



TYPE L7

DRAINABLE EXTRUDED ALUMINUM LOUVER WITH BIRDSCREEN

ADD ALTERNATE

LOUVER TYPE L7/A09

SCALE: 1/2" = 1'-0"

Project Title
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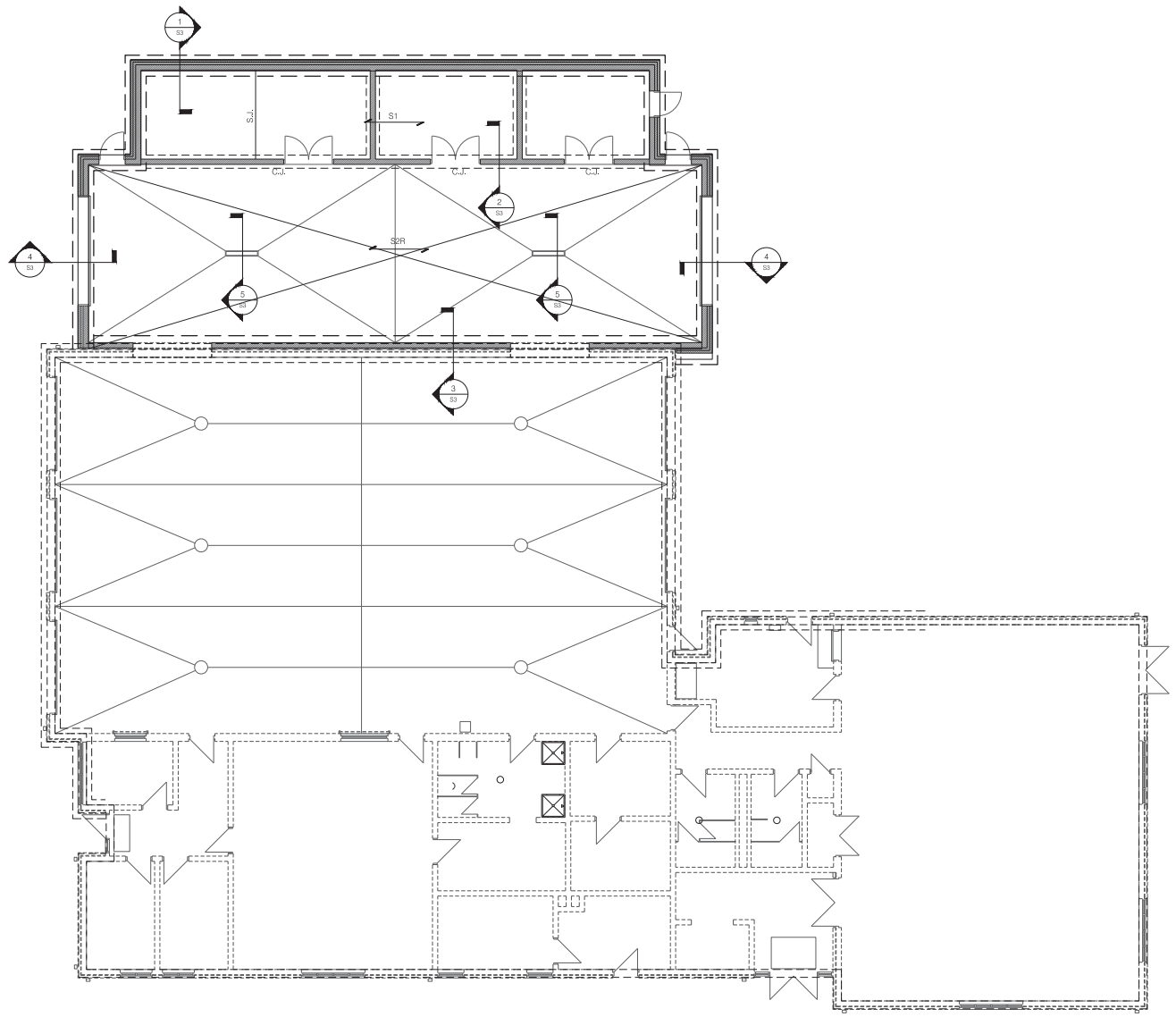
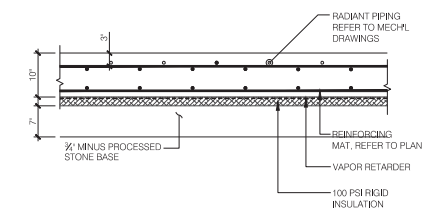
Revision	Description	Date	Revised By

Drawing Title
WINDOW & LOUVER ELEVATIONS AND DETAILS

Date: SEPTEMBER 14, 2015
Scale: AS NOTED
Drawn By: JJM
S/A Project Number: 15.037

Drawing Number: A09





TYPICAL S2R SLAB

Scale: 3/4"= 1'-0"

1. NO SAWCUT JOINTS IN THIS SLAB

FIRST FLOOR AND FOUNDATION PLAN

1/8" = 1'-0"

1. TOP OF CONCRETE SLAB ELEVATION = XX' UNLESS OTHERWISE NOTED (T/S XX'-X") ON PLAN
2. FLOOR CONSTRUCTION:

   S-1 TYPICAL — 5" NORMAL WEIGHT SLAB ON GRADE REINFORCED WITH 6X6-W2.9XW2.9 WELDED WIRE MESH (CHAIRED) OVER A 15 MIL. VAPOR RETARDER OVER MIN. 4" OF COMPACTED CRUSHED STONE FILL. REFER TO GENERAL NOTES FOR SUBGRADE REQUIREMENTS.

   S2R — 10" NORMAL WEIGHT SLAB ON GRADE (PITCHED AS SHOWN ON PLAN) REINFORCED WITH # 4@ 12" O.C. EACH WAY TOP & BOTTOM OVER A 15 MIL. VAPOR RETARDER OVER A MIN. OF 7" OF ¾" MINUS PROCESSED STONE BASE. REFER TO GEOTECHNICAL REPORT FOR SUBGRADE REQUIREMENTS. RADIANT PIPING IN SLAB AT S2R. PROVIDE 100 PSI RIGID INSULATION BELOW VAPOR RETARDER. REFER TO TYPICAL S2R SLAB DETAIL.
3. ELEVATION GIVEN (-X'-XX") ON PLAN IS TO THE TOP OF CONCRETE FOOTING FROM ELEVATION XX
4. (T.S.) INDICATES THICKENED SLAB UNDER MASONRY WALLS - REFER TO TYPICAL DETAIL
5. PROVIDE SAWCUT JOINTS IN SLAB ON GRADE PER NOTE #5 ON DRAWINGS S6
   INDICATES RADON REMOVAL PIT COORDINATE WITH PLUMBING DRAWINGS.

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Revision:	*Description:*	*Date:*	*Revised By:*

MHAI
Michael Horton Associates Inc.
Consulting Structural Engineers
151 Meadow Street
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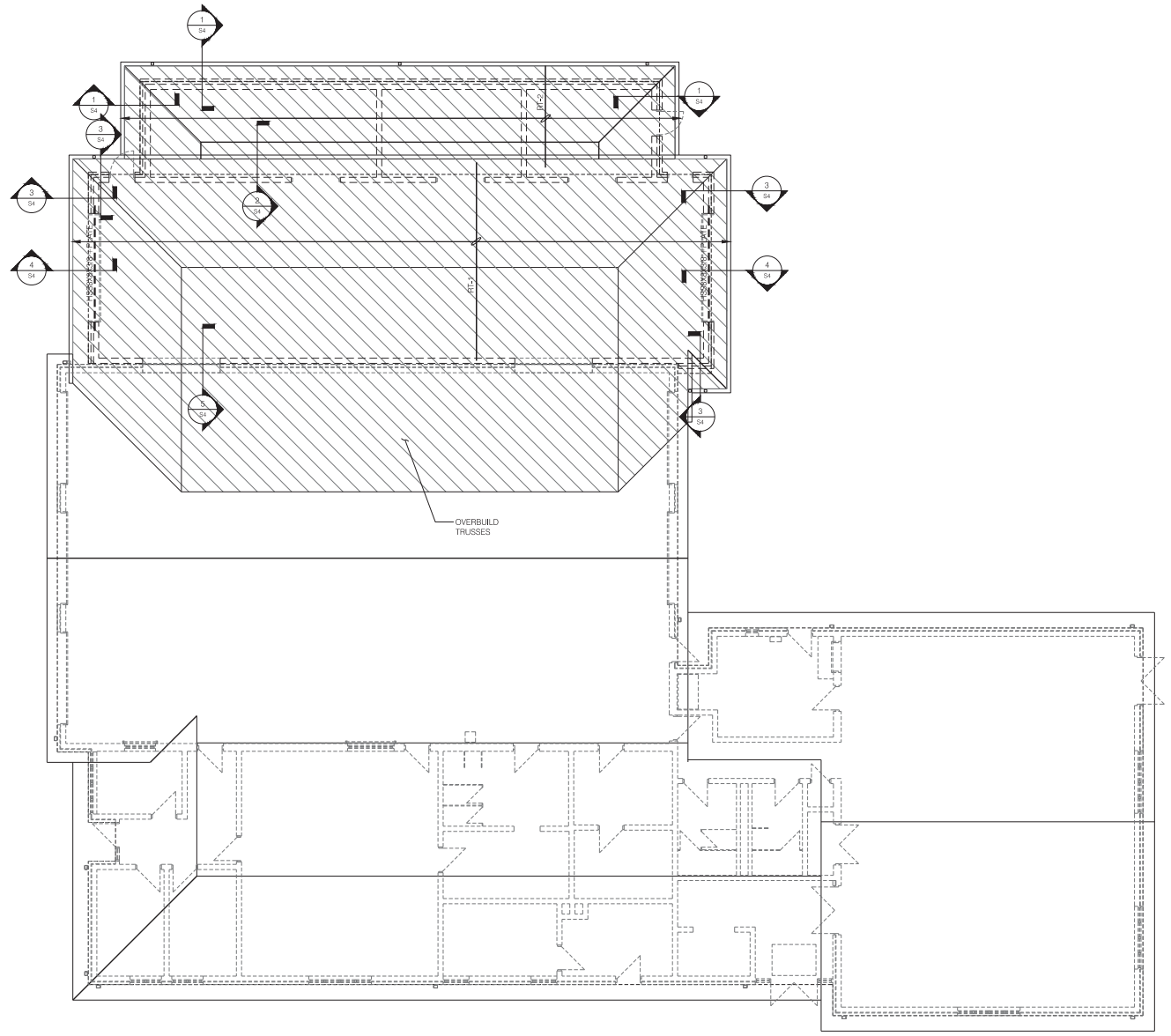
203-481-8800 mhai-eng.com

Drawing Title: FOUNDATION PLAN

Date: september 14, 2015
Scale: as noted
Drawn By: AC
SPA Project Number: 15.037

Drawing Number: S1



ROOF FRAMING PLAN

1/8" = 1'-0"

1. ROOF FRAMING:

   5/8" SHEATHING ON PREFABRICATED WOOD TRUSSES AT 24" O.C.

2. "RT-1" INDICATES PREFABRICATED WOOD STEP DOWN TRUSSES AT 16" O.C.
   "RT-2" INDICATES PREFABRICATED WOOD STEP DOWN TRUSSES AT 16" O.C.

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Revision:	Description:	Date:	Revised By:

MHAI
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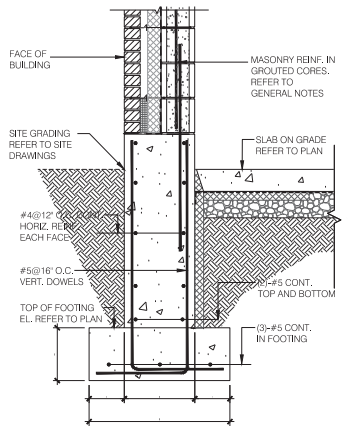
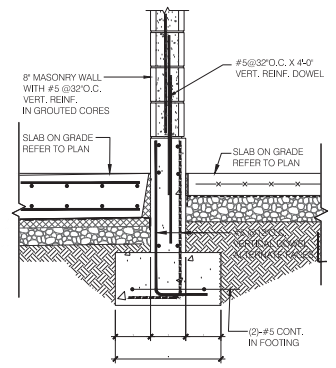
Drawing Title: FOUNDATION PLAN

Date: september 14, 2015
Scale: as noted
Drawn By: AC
SPA Project Number: 15.037

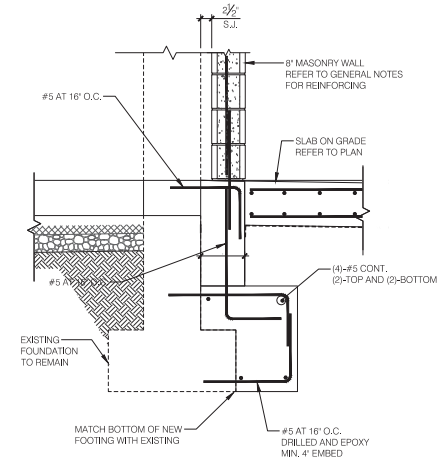
Drawing Number: S2



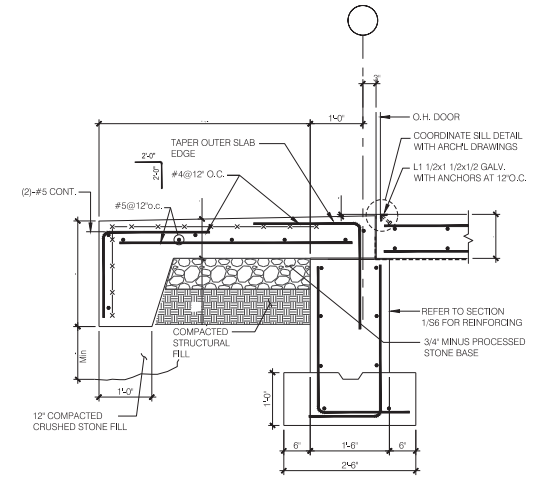
SECTION 1
Scale: 3/4"=1'-0"



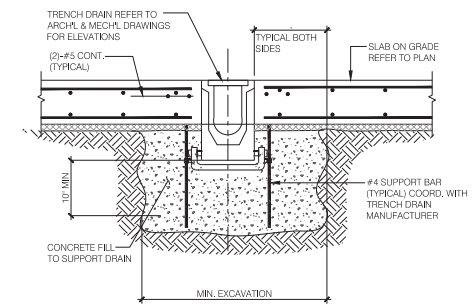
SECTION 2
Scale: 3/4"=1'-0"



SECTION 3
Scale: 3/4"=1'-0"



SECTION 4
Scale: 3/4"=1'-0"



SECTION 5
Scale: 3/4"=1'-0"

Project Title:
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Revision:	Description:	Date:	Revised By:

MHAI
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Consulting Structural Engineers
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Branford, Connecticut 06405
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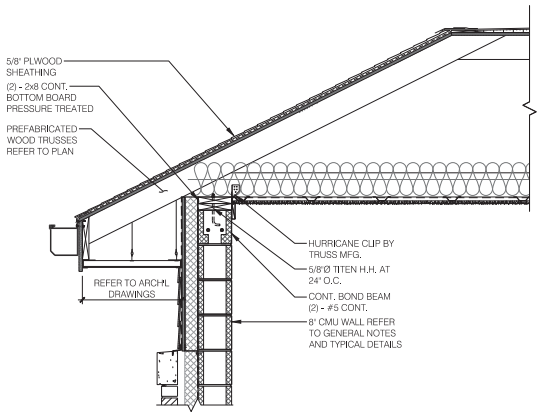
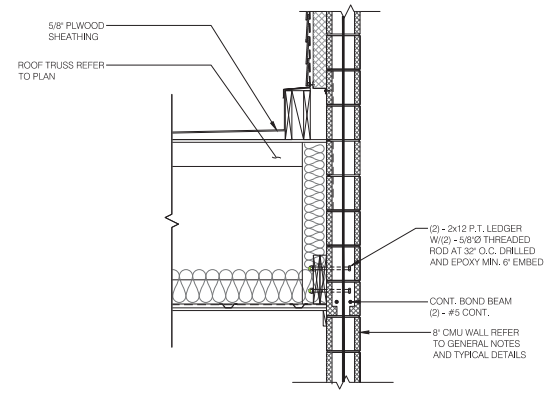
Drawing Title:
FOUNDATION SECTIONS

Date: september 14, 2015
Scale: as noted
Drawn By: AC
SPA Project Number: 15.037

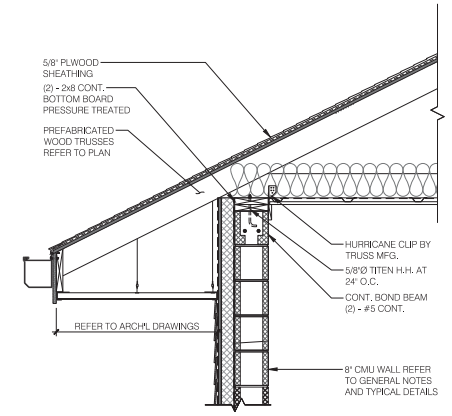
Drawing Number:
S3



SECTION 1
Scale: 3/4" = 1'-0"



SECTION 2
Scale: 3/4" = 1'-0"



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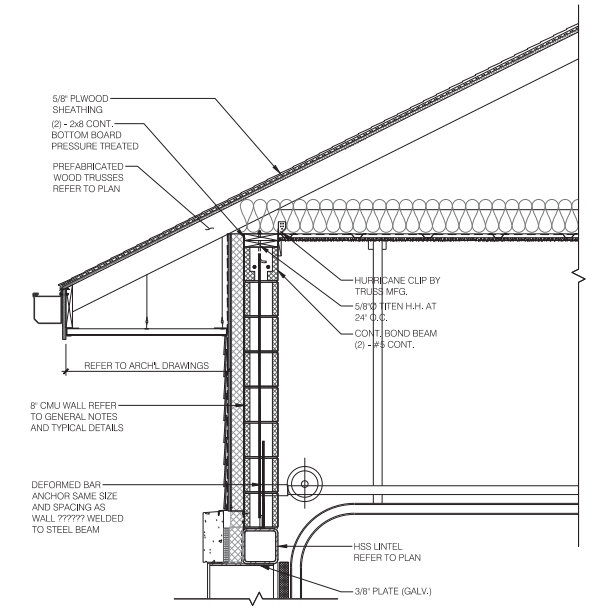
Scale: 3/4" = 1'-0"



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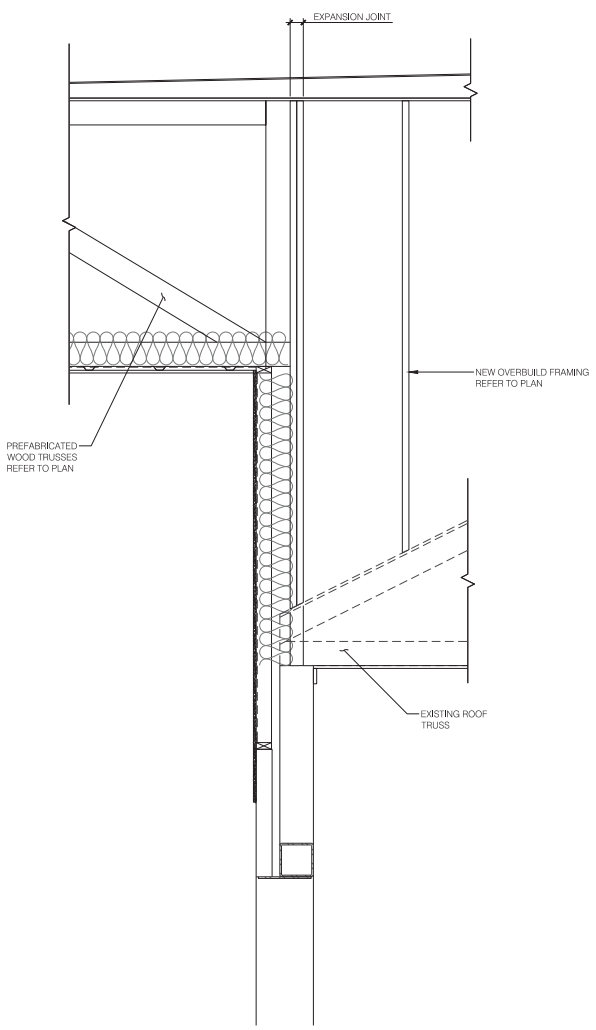

SECTION 5
Scale: 3/4" = 1'-0"

Project Title:
Addition to
Durham Volunteer Fire Co.
41 Main Street
Durham, Connecticut 06422

SILVER / PETRUCELLI + ASSOCIATES
Architects / Engineers / Interior Designers
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Revision:	Description:	Date:	Revised By:

MHAI
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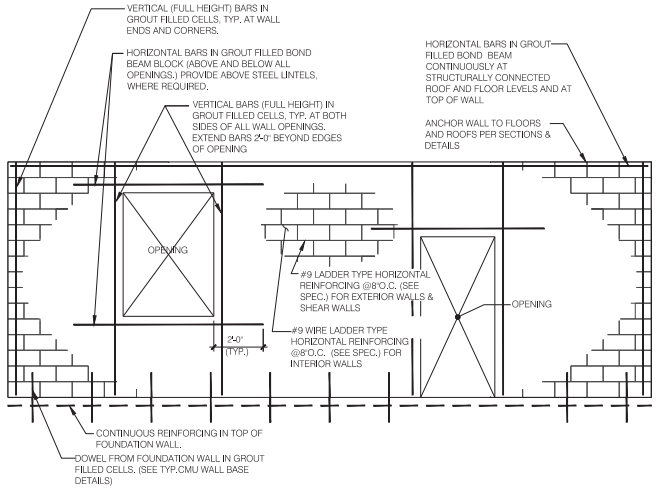
Drawing Title: ROOF SECTIONS

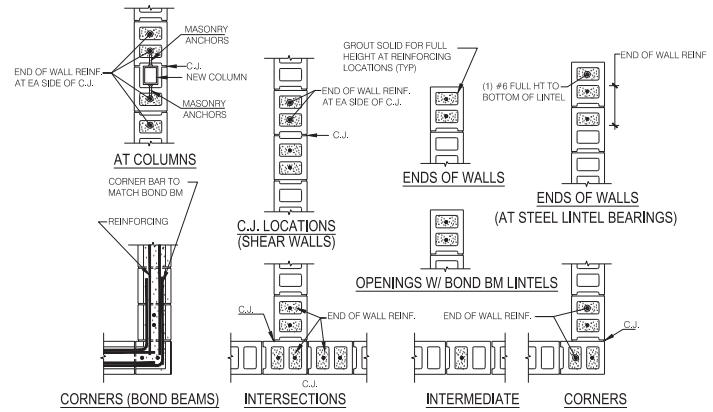
Date: september 14, 2015
Scale: as noted
Drawn By: AC
SPA Project Number: 15.037

Drawing Number: S4



TYPICAL CMU WALL REINFORCEMENT DETAIL

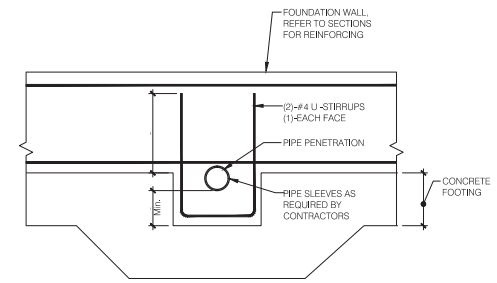
NOTE: REFER TO CONCRETE MASONRY GENERAL NOTES ON DRAWING FOR WALL REINFORCING REQUIREMENTS.



TYPICAL CMU REINFORCING PLAN DETAILS

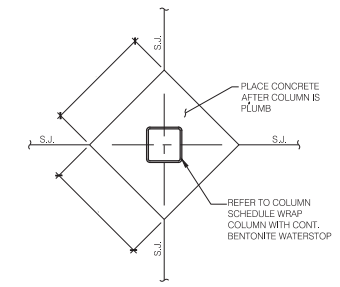
NOT TO SCALE

NOTES:
1. REINFORCING DETAILS APPLY TO ALL CMU WALLS. FOR ACTUAL REINFORCING REQUIREMENTS, REFER TO GENERAL NOTES ON DRAWINGS
2. PROVIDE DOWELS FROM CONCRETE FOUNDATIONS TO CMU WALL ABOVE. SIZE AND NUMBER TO MATCH WALL REINFORCING.

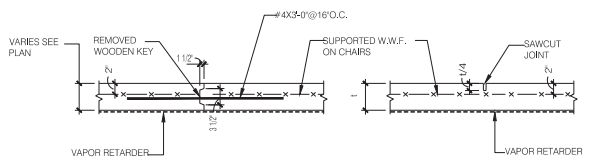


TYPICAL DETAIL OF PIPE PENETRATIONS THRU FOUNDATIONS WALLS

NOTE: DO NOT PLACE PENETRATIONS THROUGH COLUMNS PIERS OR FOOTINGS. REFER TO PLAN FOR LOCATIONS AND COORDINATE WITH SITE, MECHANICAL, PLUMBING, ELECTRICAL, AND FIRE PROTECTION DRAWINGS

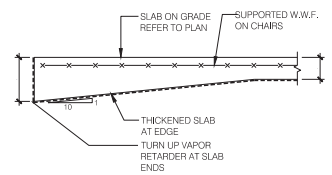


TYPICAL SLAB CONSTRUCTION JOINT AT COLUMNS

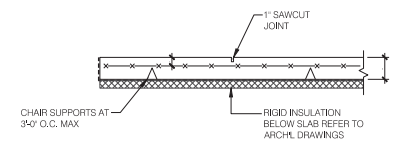


CONSTRUCTION JOINT (NOTED "C.J." ON PLAN)

SAWCUT SLAB JOINT (NOTED "S.J." ON PLAN)



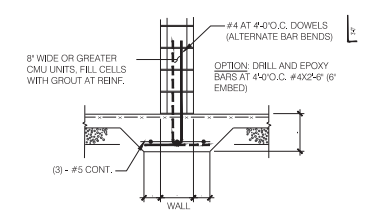
TYPICAL THICKENED EDGE



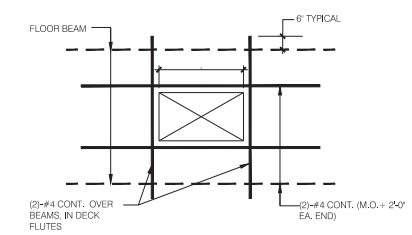
TYPICAL SLAB AT RADIANT HEAT

TYPICAL SLAB ON GRADE DETAILS

NOTE:
CONTRACTOR SHALL SUBMIT A PLAN INDICATING THE PROPOSED LOCATION OF CONTROL AND CONSTRUCTION JOINTS PRIOR TO PLACING CONCRETE FOR SLAB. REFER TO GEOTECHNICAL REPORT BY DR. CLARENCE WELTI, P.C., P.E., DATED NOVEMBER 2, 2009 FOR SUBGRADE PREPERATION. REMOVE ALL FILL MATERIALS BELOW SLAB ON GRADE

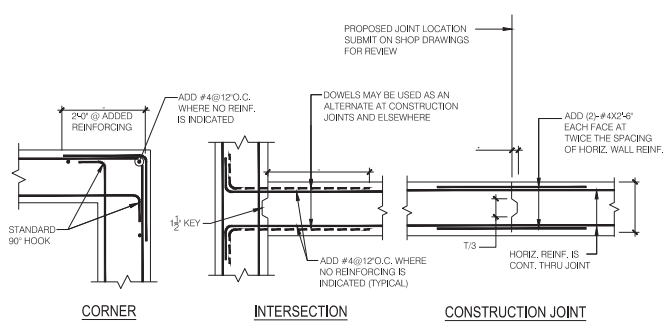


TYPICAL THICKENED SLAB DETAIL

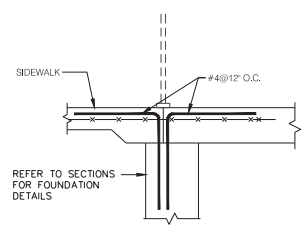


TYPICAL SLAB OPENING

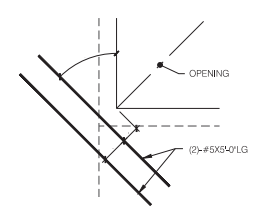
NOTES:
1. FOR OPENINGS WITH 'W' GREATER THAN 4'-0" SUBMIT LOCATION FOR REVIEW.
2. FOR STEEL FRAME, REFER TO TYPICAL FLOOR OPENING DETAIL
3. COORDINATE QUANTITY AND LOCATIONS WITH MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS.



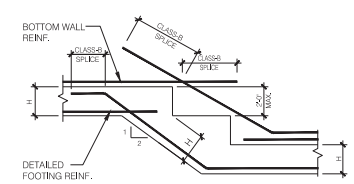
TYPICAL WALL REINFORCING DETAILS



TYPICAL FOUNDATION AT DOORS

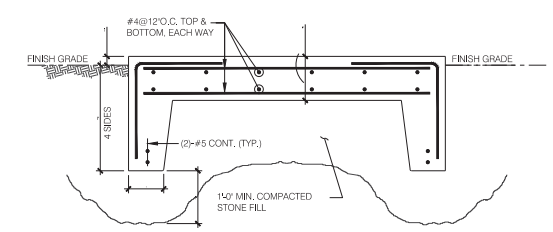


TYPICAL AT REENTRANT SLAB CORNERS



TYPICAL STEPPED FOOTING DETAIL

STEP TO FOLLOW UNDISTURBED SOIL ELEVATION



TYPICAL CONCRETE EQUIPMENT PAD ON GRADE

SCALE: 3/4"=1'-0"

1. COORDINATE WITH MECHANICAL DRAWING FOR QUANTITY, SIZE AND LOCATION.

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Revision:	Description:	Date:	Revised By:

MHAI
Michael Horton Associates Inc.
Consulting Structural Engineers
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203-481-8800 mhai-eng.com

Drawing Title: TYPICAL DETAILS

Date: september 14, 2015
Scale: as noted
Drawn By: AC
SPA Project Number: 15.037

Drawing Number: S5

GENERAL NOTES

GENERAL

GOVERNING CODE: STATE BUILDING CODE, 2005 CONNECTICUT SUPPLEMENT WITH THE 2013 AMENDMENT (2003 INTERNATIONAL BUILDING CODE).

DESIGN LOADS: TOWN OF DURHAM

MINIMUM LIVE LOADS:

ROOF LOAD:

ROOF SNOW LOAD CRITERIA: Pg = 30 PSF, Ce = 0.9 AND Is = 1.0, Ct= 1.0 WITH INCREASES FOR SNOW DRIFTING, UNBALANCES AND SLIDING PER SECTION 1608 (2003 IBC).

MINIMUM ROOF LIVE LOAD = 30 PSF

ROOF DEAD LOAD = 20 PSF

WIND LOAD CRITERIA: SECTION 1609 (2003 IBC) WITH BASIC WIND SPEED = 105 MPH, BUILDING CATEGORY II, Iw = 1.0, EXPOSURE CLASSIFICATION "B".

MINIMUM WIND LOAD ON PRIMARY STRUCTURE = 15 PSF

WIND LOADS ON SECONDARY ELEMENTS SHALL CONFORM WITH ASCE 7-02.

TYPICAL WIND LOAD ON EXTERIOR WALLS = PER ASCE 7-02
MAXIMUM WIND LOAD AT CORNERS = PER ASCE 7-02
NET WIND UPLIFT ON STEEL JOIST ROOFS = PER ASCE 7-02
NET WIND UPLIFT AT OVERHANGS = PER ASCE 7-02

SEISMIC LOAD CRITERIA: AS PER SECTION 1616 (2003 IBC) WITH:
SEISMIC IMPORTANCE FACTOR, Ie = 1.0
SEISMIC USE GROUP = I
Ss = 0.235g, S1 = 0.062g
SOIL SITE CLASS = D
SPECTRAL RESPONSE COEFFICIENTS, Sds = 0.293G, Sd1 = 0.136g
SEISMIC DESIGN CATEGORY, B
BASIC SEISMIC-FORCE-RESISTING SYSTEM: BEARING WALL, LIGHT FRAME WALLS WITH SHEAR PANELS
DESIGN BASE SHEAR, V = 0.054W
RESPONSE MODIFICATION FACTOR, R = 6.5
ANALYSIS PROCEDURE USED: SIMPLIFIED ANALYSIS

ASSUMED BEARING PRESSURE ON UNDISTURBED SOIL: 3000 PSF
ASSUMED BEARING PRESSURE ON COMPACTED FILL: 3000 PSF

1. SHOULD ANY OF THE DETAILED INSTRUCTIONS SHOWN ON THE PLANS CONFLICT WITH THE GENERAL STRUCTURAL NOTES, THE SPECIFICATIONS, OR WITH EACH OTHER, THE STRICTEST PROVISION SHALL GOVERN.

2. THE STRUCTURE IS DESIGNED TO BE SELF_SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND TO INSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, SHEETING, TEMPORARY BRACING, GUYS OR TIEDOWNS WHICH MIGHT BE NECESSARY. SUCH MATERIAL SHALL REMAIN THE CONTRACTOR'S PROPERTY AFTER COMPLETION OF THE PROJECT.

3. THE STRUCTURE UTILIZES SHEAR WALLS TO PROVIDE LATERAL STABILITY. THEREFORE, TEMPORARY BRACING, GUYS, ETC. MUST BE MAINTAINED UNTIL ALL MASONRY SHEAR WALLS HAVE BEEN ERECTED AND ATTACHED TO STEEL FRAMING.

4. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.

5. SHOP DRAWINGS ARE TO BE CHECKED BY THE CONTRACTOR AND SUBCONTRACTOR AND BEAR CHECKER'S INITIALS BEFORE BEING SUBMITTED TO THE ARCHITECT FOR APPROVAL.

6. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES AND EXISTING CONDITIONS BEFORE PROCEEDING WITH ANY WORK.

7. ALL SECTIONS AND DETAILS SHALL BE CONSIDERED TYPICAL AND APPLY FOR THE SAME AND SIMILAR SITUATIONS THROUGHOUT THE BUILDING, UNLESS OTHERWISE SPECIFICALLY NOTED.

8. CONTRACTOR SHALL REVIEW ALL ARCHITECTURAL AND STRUCTURAL DRAWINGS PRIOR TO SUBMITTING THEIR BID FOR REFERENCE TO ALL NOTES ON ARCHITECTURAL DRAWINGS REFERRING TO SEE STRUCTURAL DRAWINGS. IF THE SIZE OF ELEMENTS AND DETAILING OF MEMBERS IS NOT INDICATED, THE CONTRACTOR SHALL CONTACT THE ARCHITECT TO REQUEST THE MISSING INFORMATION IN PREPARATION OF THEIR BID. THESE REFERENCED ITEMS SHALL BE PART OF THE BASE BID.

9. IN CASES OF DISCREPANCIES BETWEEN CONTRACT DOCUMENTS AND SUBMITTED SHOP DRAWINGS, THE CONTRACT DOCUMENTS SHALL GOVERN INSTALLATION OF MATERIALS.

FOUNDATIONS

1. BACKFILLING SHALL BE ACCOMPLISHED TO EQUAL HEIGHTS ON BOTH SIDES OF FOUNDATION WALLS TO PREVENT MOVEMENTS DUE TO UNBALANCED EARTH PRESSURE. WHERE EARTH IS ON ONE SIDE ONLY, BACKFILLING AND COMPACTION SHALL NOT START UNTIL FLOOR SLAB OR ADEQUATE BRACING IS PROVIDED FOR WALL SUPPORT (EXCEPT AT RETAINING WALLS).

2. ALL FOOTINGS ARE TO REST ON UNDISTURBED NATURAL SOIL, AS DEFINED IN THE SPECIFICATIONS, OR CONTROLLED COMPACTED FILL, REGARDLESS OF ELEVATIONS SHOWN ON DRAWINGS. FOOTING BOTTOM ELEVATIONS SHALL NOT BE HIGHER THAN INDICATED ON THE FOUNDATION PLAN, NOR LESS THAN 3'-6" BELOW FINISH GRADES.

3. IF FILL MATERIALS ARE ENCOUNTERED AT FOOTING BEARING ELEVATIONS, ALL FILL MATERIAL SHALL BE EXCAVATED AND DISPOSED OF LEGALLY OFF-SITE. THE OVER EXCAVATION SHALL BE BACKFILLED WITH CONTROLLED COMPACTED FILL TO THE BOTTOM OF FOOTING ELEVATION AS REQUIRED.

4. ALL CONTROLLED COMPACTED BACKFILL UNDER FOOTINGS AND WITHIN THE FOOTPRINT OF THE STRUCTURE SHALL BE COMPACTED TO 95% OF THE MODIFIED OPTIMUM DENSITY.

5. BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE AT LEAST 3'_6" BELOW FINISHED GRADE. PRIOR TO PROCEEDING WITH FOOTING EXCAVATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF FINISH GRADES AND BOTTOM OF EXTERIOR FOOTING ELEVATIONS TO MAINTAIN THE 3'-6" FROST PROTECTION.

6. ALL SOIL SURROUNDING AND UNDER ALL FOOTINGS SHALL BE PROTECTED FROM FREEZING AND FROST ACTION DURING THE COURSE OF CONSTRUCTION.

7. FOOTING BOTTOMS SHALL STEP AT THE RATE OF 1 UNIT VERTICAL TO 2 UNITS HORIZONTAL WITH A MAXIMUM VERTICAL STEP OF 1'_4".

8. WHERE SUBSURFACE PIPING PASSES THROUGH FOUNDATION WALLS, THE TOP OF THE FOOTINGS SHALL BE AT LEAST 8" BELOW THE INVERT ELEVATION OF THE PIPING AND CONDUITS. COORDINATE ALL INVERTS WITH MECHANICAL, PLUMBING, FIRE PROTECTION, ELECTRICAL, SITE AND SITE UTILITY DRAWINGS.

9. WHERE FOOTINGS ARE IN CLOSE PROXIMITY OF SUBSURFACE PIPING OR CONDUIT, BOTTOM OF FOOTINGS SHALL BE AT LEAST 8" BELOW INVERT ELEVATION OF PIPING OR CONDUITS.

1.
10. KEEP FOUNDATION EXCAVATIONS FREE OF WATER AT ALL TIMES.

11. USE LEAN CONCRETE (f'c=1500) OR CONTROLLED COMPACTED FILL FOR OVER_EXCAVATION OF FOOTINGS.

12. PLACEMENT OF ALL COMPACTED FILL MATERIALS MUST BE UNDER SUPERVISION OF AN APPROVED TESTING LABORATORY (SEE SPECIFICATIONS). CONCRETE FOUNDATIONS SHALL NOT BE PLACED UNTIL SUBGRADE HAS BEEN CHECKED IN PLACE AND APPROVED BY TESTING LABORATORY.

13. EXISTING ON-SITE EXCAVATED MATERIALS SHALL NOT BE ACCEPTABLE BACKFILL MATERIAL BELOW BUILDING FOUNDATIONS, SLABS ON GRADE, OR FOR BACKFILLING OF FOUNDATION WALLS , OR WITHIN 2 FEET OF PAVEMENT GRADES.

14. CONTROL JOINT SPACING IN FOUNDATION WALLS SHALL NOT EXCEED 30 FEET. 50% OF HORIZONTAL REINFORCEMENT SHALL EXTEND THROUGH JOINT AND HAVE A CLASS "B" SPLICE (PER ACI 318-95).

15. WHERE REQUIRED, CONSTRUCTION JOINTS SHALL BE KEYED AND OCCUR AT CONTROL JOINT INTERVALS. PROVIDE BENTONITE WATERSTOP FULL HEIGHT IN ALL WALL CONSTRUCTION JOINTS BELOW GRADE.

16. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF BRICK OR CONCRETE MASONRY BLOCK SHELF ELEVATIONS IN THE FOUNDATION WALLS.

17. THE FOUNDATION DESIGN OF THE STRUCTURE HAS BEEN PREPARED BASED ON THE SITE GRADING PLAN PREPARED BY ------------------, DATED ------------------, IT IS THE CONTRACTORS RESPONSIBILITY TO REVIEW THE DRAWING PRIOR TO PREPARING HIS BID TO ASSURE HE UNDERSTANDS THE SITE CONDITIONS AND THE REQUIREMENTS OF THE SITE ENGINEER.

18. FOUNDATION DESIGN SITE PREPARATION: THE FOUNDATION DESIGN AS INDICATED ON THE STRUCTURAL DRAWINGS HAS BEEN BASED ON THE FOLLOWING SITE PREPARATION. THE SITE HAS BEEN PREPARED BY THE EXCAVATION AND REMOVAL FROM THE SITE OF ALL EXISTING FILL AND CONTAMINATED SOILS. THE FOUNDATION DESIGN IS BASED ON THE CONTROLLED BACKFILLING OF THE SITE EXCAVATION WITH CONTROLLED FILL COMPACTED TO AT LEAST 95% OF THE MODIFIED OPTIMUM DENSITY IN ACCORDANCE WITH ASTM D1557.

SLAB ON GRADE

1. ALL SLABS ON GRADE SHALL BEAR ON A VAPOR RETARDER OVER A MINIMUM OF 4 INCHES OF 3/4" COMPACTED PROCESSED AGGREGATE FILL, OVER A MINIMUM OF 6 INCHES OF COMPACTED GRAVEL FILL. ALL JOINTS OF THE VAPOR RETARDER SHALL BE SEALED WITH TAPE.

2. IF FILL MATERIALS ARE ENCOUNTERED SLAB SUBGRADE ELEVATIONS, ALL FILL MATERIAL SHALL BE EXCAVATED AND DISPOSED OF LEGALLY OFF-SITE. THE OVER EXCAVATION SHALL BE BACKFILLED WITH CONTROLLED COMPACTED FILL TO THE BOTTOM OF THE SLAB SUBGRADE AS REQUIRED. ALL CONTROLLED COMPACTED BACKFILL UNDER SLABS WITHIN THE FOOTPRINT OF THE STRUCTURE SHALL BE COMPACTED TO 95% OF THE MODIFIED OPTIMUM DENSITY.

3. EXISTING ON-SITE EXCAVATED MATERIALS SHALL NOT BE ACCEPTABLE BACKFILL MATERIAL BELOW BUILDING SLABS ON GRADE.

4. CONTROL JOINTS ARE TO BE CREATED IN SLABS ON GRADE. JOINTS SHALL BE SAW CUT 1/8" WIDE AND TO A DEPTH EQUAL TO 1/4 OF THE SLAB THICKNESS. LOCATE JOINTS A MAXIMUM OF 15'_0" ON CENTER IN EACH DIRECTION, IN ADDITION TO THOSE LOCATIONS INDICATED ON PLAN.

5. CONSTRUCTION JOINTS AS REQUIRED SHALL BE KEYED AND DOWELED AND LOCATED AT INTERVALS OF A MAXIMUM OF 75 FEET ON CENTER.

6. SEE ARCHITECTURAL DRAWINGS FOR LOCATION AND SIZE OF DEPRESSED AREAS IN CONCRETE SLABS AND FOR CONCRETE PADS. MAINTAIN FULL SLAB THICKNESS IN DEPRESSED AREAS, UNLESS OTHERWISE SHOWN.

7. SEE ARCHITECTURAL DRAWINGS FOR LOCATION OF ALL MASONRY WALLS FOR WHICH NO FOOTING IS SHOWN. SEE DETAILS FOR SLAB REINFORCING REQUIREMENTS AT ALL WALL LOCATIONS.

8. CONTRACTOR SHALL CONSOLIDATE ALL SLAB CONCRETE USING VIBRATIONAL METHODS IN CONFORMANCE WITH ACI 309, GUIDE FOR CONSOLIDATION OF CONCRETE.

CONCRETE

MATERIALS:

CONCRETE SHALL DEVELOP STRENGTH IN 28 DAYS AS FOLLOWS:

LOCATION	STRENGTH (PSI)
FOUNDATIONS	3000
WALLS	3000
SLABS ON GRADE	3500

1. ALL DETAILING, FABRICATION AND ERECTION OF REINFORCING BARS MUST FOLLOW THE LATEST ACI CODE AND THE LATEST ACI "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES".

2. REINFORCING STEEL SHALL BE 60,000 PSI YIELD.

3. NO TACK WELDING OF REINFORCING WILL BE PERMITTED.

4. UNLESS NOTED OTHERWISE, ALL LAP SPLICES SHALL BE CLASS B, IN ACCORDANCE WITH ACI 318-02.

5. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A_185.

6. WIRE MESH REINFORCEMENT MUST LAP ONE MESH SIZE AT SIDES AND ENDS AND BE WIRED TOGETHER.

1.
7. WELDED WIRE FABRIC SIDE LAPS SHALL BE STAGGERED TO AVOID FOUR MESH THICKNESS AT COINCIDING END LAP AND SIDE LAP LOCATION.

8. NO CALCIUM CHLORIDE OR ADMIXTURES CONTAINING MORE THAN 0.1% CHLORIDE BY WEIGHT OF ADMIXTURE SHALL BE USED IN THE CONCRETE.

9. BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE AT LEAST 3'_6" BELOW FINISHED GRADE. PRIOR TO PROCEEDING WITH FOOTING FORMWORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF BOTTOM OF EXTERIOR FOOTING ELEVATIONS WITH THE FINISH GRADES AND MAINTAINING THE 3'-6" FROST PROTECTION. WHERE SUBSURFACE PIPING PASSES THROUGH FOUNDATION WALLS, THE TOP OF FOOTINGS SHALL BE AT LEAST 8" BELOW THE INVERT ELEVATION OF THE PIPING AND CONDUITS. COORDINATE ALL INVERTS WITH MECHANICAL, PLUMBING, FIRE PROTECTION, ELECTRICAL, SITE AND SITE UTILITY DRAWINGS. PIPING OR CONDUITS SHALL NOT PASS THROUGH COLUMNS OR PIERS.

10. ALL HORIZONTAL STEEL SHOWN IN SECTIONS AND DETAILS SHALL BE CONTINUOUS, UNLESS OTHERWISE NOTED. ALL LAPS SHALL BE CLASS B SPLICES IN ACCORDANCE WITH ACI 318.

11. AT INTERSECTIONS OF REINFORCED CONCRETE WALLS, PROVIDE CORNER DOWELS OF SAME SIZE AND AT THE SAME SPACING AS THE SMALLER HORIZONTAL REINFORCING. DOWELS SHALL HAVE A CLASS B LAP WITH HORIZONTAL REINFORCING IN EACH DIRECTION.

12. PROVIDE DRILLED AND EPOXIED DOWELS OF SAME SIZE TO MATCH NEW REINFORCING WHERE NEW CONSTRUCTION ABUTS EXISTING CONCRETE CONSTRUCTION. LENGTH SHALL BE THE REQUIRED EMBEDMENT DEPTH PER THE ANCHOR BOLT/EPOXY MANUFACTURER PLUS A CLASS B LAP SPLICE FOR THE SIZE OF BAR.

13. PROVIDE CORROSION RESISTANT ACCESSORIES IN ALL EXPOSED CONSTRUCTION.

14. ALL KEYS IN CONCRETE WALLS SHALL BE 2 X 4 UNLESS NOTED OTHERWISE.

15. SEE ARCHITECTURAL, MECHANICAL, PLUMBING, FIRE PROTECTION, ELECTRICAL, SITE, SITE UTILITY AND EQUIPMENT DRAWINGS FOR CONCRETE PADS, SLEEVES, OPENINGS, RECESSES, AND BUILT-IN WORK IN CONCRETE ELEMENTS.

16. THE CONTRACTOR SHALL FURNISH, LOCATE AND INSTALL ALL ACCESSORIES FOR PROPER ANCHORAGE OF WOOD AND METAL FRAMING, WOOD BLOCKING, BRICK WORK AND MASONRY UNITS. HE SHALL BE SOLELY RESPONSIBLE FOR FURNISHING, LOCATING AND ENSURING PROPER QUANTITY OF ALL FASTENING DEVICES.

17. ALL CONCRETE TO REMAIN EXPOSED TO VIEW SHALL RECEIVE A SMOOTH RUBBED FINISH (SEE SPECIFICATIONS).

18. ALL CONCRETE CORNERS WITH BOTH SIDES EXPOSED TO VIEW SHALL BE SQUARE UNLESS OTHERWISE SHOWN OR NOTED. THE EDGE SHALL BE RUBBED, PRODUCING A SMOOTH, DENSE SURFACE WITHOUT PITS OR IRREGULARITIES.

19. PROVIDE CONTINUOUS VERTICAL DOVETAIL SLOTS AT 16 INCH CENTERS HORIZONTALLY FOR ALL CONCRETE WALLS ABUTTING A MASONRY WALL OR MASONRY VENEER, UNLESS OTHERWISE NOTED.

20. PROVIDE CLEARANCE FROM EDGE OF REINFORCING TO EDGE OF CONCRETE AS FOLLOWS:

FOOTINGS (AGAINST EARTH)	3"
WALLS, INTERIOR FACE	3/4"
WALLS, EXTERIOR FACE (#5 AND SMALLER)	1 1/2"
WALLS, EXTERIOR FACE (#6 AND LARGER)	2"
SLABS (INTERIOR)	3/4"
SLABS (EXTERIOR)	1 1/2"
SLABS ON GRADE (W.W.F.)	1/3 X THK. FROM TOP SURFACE

21. PROVIDE THE FOLLOWING AT OPENINGS IN ALL CONCRETE WALLS UNLESS OTHERWISE INDICATED:

1-#5 AT EACH FACE ON EACH SIDE OF OPENING, EXTENDING 2'-0" BEYOND OPENING.

1-#5 X 4'-0" LONG AT EACH FACE DIAGONALLY AT EACH CORNER.

22. REINFORCING STEEL SHOP DRAWINGS SHALL INDICATE THE SEQUENCE IN WHICH LAYERS OF CROSSING REINFORCING SHOULD BE PLACED, IN ORDER TO PRODUCE THE CORRECT OUTERMOST LAYER AS INDICATED ON THE DRAWINGS.

CONCRETE MASONRY

MATERIALS:

HOLLOW LOAD BEARING UNITS: ASTM C 90
MORTAR: (TYPE S) ASTM C 270
(COMPRESSIVE STRENGTH OF MASONRY, fm = 1500 PSI)
GROUT FOR REINFORCED MASONRY: ASTM C 476
(COMPRESSIVE STRENGTH AT 28 DAYS = 2500 PSI)
GROUT FOR REINFORCED MASONRY: ASTM C 476
SOLID LOAD BEARING UNITS: (GRADE N-I) ASTM C 145
CONCRETE BRICK: (GRADE N-I) ASTM C 55

1. WALLS INDICATED ON STRUCTURAL DRAWINGS ARE FOR REFERENCE ONLY. SEE ARCHITECTURAL DRAWINGS FOR LOCATION, THICKNESS AND COMPOSITION OF MASONRY WALLS.

2. ALL EXTERIOR MASONRY WALLS SHALL CONTAIN THE FOLLOWING REINFORCING:

1-#5 VERTICAL BAR AT 32" ON CENTER.

2-#6 VERTICAL BARS AT BOTH SIDES OF DOOR, WINDOW AND MECHANICAL OPENINGS.

2-#5 HORIZONTAL BAR MINIMUM ABOVE AND BELOW ALL WINDOW AND MECHANICAL OPENINGS AND ABOVE ALL DOOR OPENINGS. PROVIDE ADDITIONAL BARS ABOVE DOORS, WINDOWS AND MECHANICAL OPENINGS AS REQUIRED IN ACCORDANCE WITH LINTEL SCHEDULE ON ARCHITECTURAL DRAWINGS.

2-#5 HORIZONTAL AT TOP OF ALL WALLS, AND AT BOND BEAMS CONNECTED TO FLOORS AND ROOFS, UNLESS OTHERWISE INDICATED.

2_#6 VERTICAL BARS AT ENDS OF ALL WALLS, AND EACH SIDE OF CONTROL JOINTS.

STANDARD LADUR TYPE DESIGN DUR_O_WAL HORIZONTAL REINFORCING @ 16" O.C. VERTICAL. SIDE WIRE SIZE SHALL BE #9 GAGE WIRE.

3. ALL OTHER INTERIOR MASONRY WALLS SHALL CONTAIN THE FOLLOWING MINIMUM REINFORCING:

1-#4 VERTICAL BAR AT 48" ON CENTER.

1_#4 VERTICAL AND HORIZONTAL AT ALL SIDES OF DOORS, WINDOW AND MECHANICAL OPENINGS.

1-#4 HORIZONTAL BAR MINIMUM ABOVE AND BELOW ALL WINDOW AND MECHANICAL OPENINGS AND ABOVE ALL DOOR OPENINGS. PROVIDE ADDITIONAL BARS ABOVE DOORS, WINDOWS AND MECHANICAL OPENINGS AS REQUIRED IN ACCORDANCE WITH LINTEL SCHEDULE ON ARCHITECTURAL DRAWINGS.

1-#4 VERTICAL AT ENDS OF ALL WALLS, AND EACH SIDE OF CONTROL JOINTS.

1-#4 HORIZONTAL AT TOP OF ALL WALLS.

1-#4 HORIZONTAL IN BOND BEAMS CONNECTED TO ROOFS .

STANDARD LADUR TYPE DESIGN DUR_O_WAL HORIZONTAL REINFORCING @ 16" O.C. VERTICAL. SIDE WIRE SIZE SHALL BE #9 GAGE WIRE.

4. PROVIDE VERTICAL DOWELS FROM CONCRETE WALLS INTO ALL CMU WALLS. SIZE AND SPACING OF THE DOWELS SHALL MATCH THE VERTICAL REINFORCING AS SPECIFIED IN THESE GENERAL NOTES, UNLESS OTHERWISE NOTED ON THE DRAWINGS. DOWEL LENGTHS SHALL BE THE REQUIRED CONCRETE DEVELOPMENT LENGTH PLUS THE REQUIRED BAR LAP SPLICE LENGTH FOR MASONRY AS SPECIFIED IN THESE GENERAL NOTES.

5. ALL VERTICAL WALL REINFORCING SHALL BE CONTINUOUS FOR THE FULL HEIGHT OF MASONRY WALLS, INCLUDING THROUGH CONTINUOUS MASONRY BOND BEAMS UNLESS OTHERWISE INDICATED.

6. ALL GROUTING OF MASONRY WALLS SHALL BE ASSUMED TO BE COMPLETED BY LOW LIFT GROUTING METHODS. IF THE CONTRACTOR PROPOSES TO UTILIZE HIGH LIFT GROUTING METHODS THEY SHALL SUBMIT THEIR PROPOSED HIGH LIFT GROUTING PROCEDURE FOR REVIEW PRIOR TO STARTING ANY GROUTING ON THE PROJECT SITE.

7. REINFORCING ABOVE WINDOWS, DOORS AND MECHANICAL OPENINGS IN THE EXTERIOR WALLS SHALL BE IN A BOND BEAM COURSE ABOVE THE STEEL LINTELS PROVIDED AT THESE OPENINGS. BOND BEAMS SHALL EXTEND 2'-0" BEYOND THE OPENING.

8. CELLS CONTAINING REINFORCING BARS AND ALL CELLS BELOW GRADE SHALL BE GROUTED SOLID. ALL OTHER CELLS SHALL REMAIN HOLLOW EXCEPT WHERE NOTED. THE CONTRACTOR SHALL NOT RUN CONDUIT OR PIPE IN CELLS CONTAINING REINFORCING.

9. ALL BOLTS OR ANCHORS SHALL BE SOLIDLY EMBEDDED IN MORTAR OR GROUT. IF BOND BEAM IS NOT LOCATED AT BOLT OR ANCHOR ELEVATION, PROVIDE LATH AND FILL CELL LOCALLY TO PROVIDE SUBSTRATE FOR BOLT OR ANCHOR. GROUT CELL ABOVE ALL MASONRY ANCHORS.

10. USE 2 COURSES (16") OF SOLID MASONRY OR GROUTED SOLID MASONRY BELOW EACH BEAM OR LINTEL BEARING EXCEPT AS NOTED.

11. USE 1 COURSE (8") OF SOLID MASONRY OR GROUTED SOLID MASONRY BELOW EACH STEEL JOIST BEARING EXCEPT AS NOTED.

12. HOLLOW UNITS SHALL BE LAID WITH FULL MORTAR COVERAGE ON HORIZONTAL AND VERTICAL FACE SHELLS, EXCEPT THAT WEBS SHALL ALSO BE BEDDED IN ALL COURSES OF BEARING AND SHEAR WALLS, PIERS, COLUMNS AND PILASTERS, AND IN THE STARTING COURSE ON FOOTINGS AND SOLID FOUNDATION WALLS, AND WHERE ADJACENT TO CELLS OR CAVITIES WHICH ARE TO BE REINFORCED AND/OR FILLED WITH GROUT.

13. MORTAR PROTRUSIONS EXTENDING INTO CELLS OR CAVITIES TO BE REINFORCED AND/OR GROUTED SHALL BE REMOVED.

14. ALL MASONRY WALLS SHALL BE BRACED AT THE TOP WHERE MASONRY ENDS AT THE UNDERSIDE OF FLOOR OR ROOF CONSTRUCTION. REFER TO TYPICAL DETAILS.

15. ALL MASONRY WALLS THAT DO NOT EXTEND TO BOTTOM OF THE ROOF STRUCTURE ABOVE SHALL BE BRACED AT THE TOP, UNLESS BRACED HORIZONTALLY BY COLUMNS OR INTERSECTING WALLS AT A MAXIMUM SPACING OF 11 FEET FOR 4" WALLS, 17 FEET FOR 6" WALLS, 23 FEET FOR 8" WALLS, AND 33 FEET FOR 12" WALLS. THE ENDS OF THE WALLS MUST BE ANCHORED TO INTERSECTING WALLS BY EITHER TOOTHING OR MECHANICAL ANCHORS. THERE SHALL BE NO VERTICAL CONTROL JOINTS WITHIN THE HORIZONTAL SPAN OF THE WALL BETWEEN THE INTERSECTING WALLS.

16. IN MASONRY WALLS, NO CHASES, RISERS, CONDUITS, OR TOOTHING OF MASONRY SHALL OCCUR WITHIN 17" OF CENTERLINE OF BEAM BEARING OR LOAD CONCENTRATION.

17. SOLID UNITS SHALL BE LAID WITH FULL HEAD AND BED JOINTS.

18. COLLAR (VERTICAL LONGITUDINAL) JOINTS BETWEEN THE FACING AND BACKING WYTHES IN WALLS SHALL BE COMPLETELY FILLED WITH MORTAR OR GROUT AND WORKED IN WITH A TROWEL.

19. ALL INTERSECTING LOAD BEARING WALLS SHALL BE TIED TOGETHER IN MASONRY BOND UNLESS NOTED OTHERWISE.

20. MINIMUM DEVELOPMENT LENGTH AND SPLICE LENGTH OF MASONRY REINFORCING SHALL BE AS FOLLOWS:

BAR SIZE	DEVELOPMENT LENGTH	SPLICE LENGTH
JOINT REINFORCING	9	12
#4	18	24
#5	25	30
#6	27	36
#7	32	42

21. SUBMIT SHOP DRAWINGS INDICATING THE PLACEMENT OF ALL REINFORCING REQUIRED IN MASONRY WALLS. REFER TO SPECIFICATIONS FOR SUBMITTAL REQUIREMENTS. SHOP DRAWINGS SHALL INDICATE THE LOCATION OF ALL CONTROL JOINTS, AND THE REQUIRED LAP SPLICES FOR ALL REINFORCING.

WOOD FRAMING

1. LUMBER FOR WOOD JOISTS, RAFTERS AND BEAMS SHALL BE DOUG-FIR, NUMBER 2 GRADE, WITH 19% MAXIMUM MOISTURE CONTENT AND MINIMUM SAFE STRENGTH CAPACITY OF:

Fb = 875 PSI FOR BENDING
Fc (perp.) = 625 PSI FOR COMPRESSION PERP. TO GRAIN
Fc (par.) = 1300 PSI FOR COMPRESSION PARALLEL TO GRAIN
Fv = 95 PSI FOR HORIZONTAL SHEAR
E = 1,600,000 PSI MODULUS OF ELASTICITY

2. LUMBER FOR WOOD STUDS SHALL BE DOUG-FIR, NUMBER 2 GRADE, WITH 19% MAXIMUM MOISTURE CONTENT AND MINIMUM SAFE CAPACITY OF:

Fb = 875 PSI FOR BENDING
Fc (perp.) = 625 PSI FOR COMPRESSION PERP. TO GRAIN
Fc (par.) = 1300 PSI FOR COMPRESSION PARALLEL TO GRAIN
Fv = 95 PSI FOR HORIZONTAL SHEAR
E = 1,600,000 PSI MODULUS OF ELASTICITY

3. ALL LUMBER IN CONTACT WITH MASONRY, CONCRETE, OR WITHIN 8" OF GRADE SHALL BE PRESSURE TREATED LUMBER.

4. ROUGH PLYWOOD: CONFORM TO THE REQUIREMENTS OF U.S. PRODUCT STANDARD PS 1 AND THE AMERICAN PLYWOOD ASSOCIATION. PRODUCTS CONFORMING TO EQUIVALENT GRADING BY TECO OR PITTSBURGH TESTING LABORATORY IS ALSO APPROVED. DO NOT USE PARTICLE PANEL PRODUCTS OR OTHER FABRICATED WOOD PRODUCTS.

5. CORNER POSTS SHALL BE THE EQUIVALENT OF NOT LESS THAN THREE PIECES OF 2" X 6" STUDS AT 6" STUD WALLS AND 2" X 4" STUDS AT 4" STUD WALLS, BRACED BY APPROVED SHEATHING APPLIED VERTICALLY IN PANELS NOT LESS THAN 4'-0" X 8'-0".

6. PROVIDE WOOD POSTS BELOW BEAMS, MULTIPLE WIDTH WOOD MEMBERS, AND GIRDER TRUSSES THAT SHALL MATCH THE WIDTH OF THE MEMBER TO BE SUPPORTED.

7. CUTTING AND NOTCHING: IN BEAMS, JOISTS AND RAFTERS, CUTS SHALL NOT BE DEEPER THAN SHOWN ON DRAWINGS, AND IN NO CASE DEEPER THAN 1/6 THE DEPTH OF THE BEAM, JOIST OR RAFTER.

8. CONNECTIONS AND FASTENINGS: ALL MEMBERS SHALL BE FASTENED AT THEIR JUNCTIONS WITH APPROVED CONNECTORS, SPIKES, NAILS, STRAPS, OR OTHER DEVICES. ALL CONNECTORS AND FASTENERS FOR USE WITH PRESSURE TREATED WOOD SHALL BE HOT DIPPED GALVANIZED OR STAINLESS STEEL. ALL BOLTS IN CONTACT WITH PRESSURE TREATED LUMBER SHALL BE HOT DIPPED GALVANIZED OR STAINLESS STEEL.

9. NAILING SHALL BE IN ACCORDANCE WITH THE "FASTENING SCHEDULE", IN CHAPTER 23 OF THE 2003 IBC CODE PER THE STATE OF CONNECTICUT BUILDING CODE.

10. DOUBLE UP JOISTS AND RAFTER UNDER ALL HVAC UNITS, UNDER ALL PARTITIONS, AND ELSEWHERE AS INDICATED ON THE DRAWINGS.

11. ALL OPENINGS SHALL BE FRAMED WITH DOUBLE POSTS, DOUBLE JOISTS OR DOUBLE RAFTERS AND HEADERS ON END (UPRIGHT), UNLESS OTHERWISE INDICATED.

12. CONNECT ALL WOOD SILL PLATES TO CONCRETE OR MASONRY WITH A MINIMUM OF (1)-5/8" DIAMETER ANCHOR BOLT WITH WASHERS AT 4'-0" ON CENTER MAXIMUM AND A MINIMUM OF 8" EMBEDMENT INTO CONCRETE OR MASONRY, AND BOLTS A MAXIMUM OF 6" FROM EACH END OF INDIVIDUAL WOOD PLATES AND ADJACENT TO PLATE LAPS, UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

13. CONNECT RAFTERS, JOISTS AND HEADERS FRAMING INTO THE SIDES OF OTHER WOOD MEMBERS WITH FORMED "SADDLE" TYPE JOIST HANGERS, MADE FROM 18 GA. GALVANIZED STEEL PER ASTM A93. INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

14. ALL PREFABRICATED STEEL CONNECTORS INDICATED ON THE DRAWINGS SHALL BE AS MANUFACTURED BY SIMPSON STRONG-TIE OR APPROVED EQUAL. ALL SUBSTITUTIONS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO PLACEMENT ON THE PROJECT. CONTRACTOR SHALL ANTICIPATE THE LEAD TIMES REQUIRED FOR OBTAINING THE CONNECTORS INDICATED ON THE DRAWINGS AND ALLOW SUFFICIENT TIME TO ORDER AND OBTAIN IN ORDER AS TO NOT DELAY THE WORK.

15. SIZE, SPACING AND DETAIL OF WOOD STUDS SHALL BE AS INDICATED ON THE ARCHITECTURAL DRAWINGS.

16. MEMBERS INDICATED THUS: "LVL" SHALL BE LAMINATED VENEER LUMBER, OR EQUIVALENT PSL PARALLEL STRAND LUMBER "PARALLAM" SECTIONS WITH THE FOLLOWING MINIMUM MATERIAL PROPERTIES:

Fb = 2600 PSI
Fc (perp.) = 750 PSI
Fc (par.) = 2510 PSI
Fv = 285 PSI
E = 1,900,000 PSI

WOOD TRUSSES

1. DESIGN ROOF TRUSSES FOR THE FOLLOWING LOAD:

LIVE LOAD 30 PSF (+ DRIFT)
DEAD LOAD - TOP CHORD 15 PSF
DEAD LOAD - BOTTOM CHORD 5 PSF
PLUS WEIGHTS OF ALL MECHANICAL UNITS HUNG FROM TRUSSES, COORDINATE WITH MECHANICAL CONTRACTOR PRIOR TO DESIGNING TRUSSES.

2. ROOF TRUSSES SHALL BE DESIGNED BY THE TRUSS FABRICATOR TO SUPPORT THE LOADS ABOVE WITH DEFLECTIONS NOT TO EXCEED L/360 UNDER COMBINED DEAD LOAD + LIVE LOAD NOR L/360 UNDER LIVE LOAD ALONE. TRUSS DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF CONNECTICUT.

3. TRUSS LUMBER SHALL BE ANY SOFTWOOD SPECIES OF SPECIFIED GRADE, CONFORMING TO STRENGTH AND MODULUS REQUIREMENTS OF PS 20 "AMERICAN SOFTWOOD LUMBER STANDARD."

MOISTURE CONTENT: SEASONED, WITH 19% MAXIMUM MOISTURE CONTENT AT TIME OF INSTALLATION.
GRADE FOR CHORD MEMBERS: NO. 2 MINIMUM
GRADE FOR WEB MEMBERS: NO. 3 MINIMUM

4. TRUSS JOINT CONNECTIONS SHALL BE MADE USING LIGHT GAGE METAL PLATES WITH EXTENDED TEETH PRESSED INTO WOOD OVER BOTH SIDES OF THE JOINT TO TRANSFER LOAD.

5. TRUSS BRACING: VERTICAL TRUSS BRACING SHALL CONSIST OF 1"x4" MEMBER SLOPING AT ABOUT 45 DEGREES, EXTENDING FROM THE TOP CHORD TO BOTTOM CHORD ELEVATION AND NAILED TO EACH TRUSS WEB MEMBER THAT IT PASSES. ANCHOR ENDS OF CONTINUOUS 1"x4" DIAGONAL BRACE TO FRAMING PERPENDICULAR TO TRUSSES.

6. STRUTS SHALL BE INSTALLED BETWEEN BOTTOM CHORDS AT THE SAME TRUSS PANELS AS THE VERTICAL SWAY BRACING, AND SHALL EXTEND CONTINUOUSLY FROM END WALL TO END WALL.

7. FABRICATOR SHALL SUBMIT SHOP DRAWINGS INDICATING ALL ELEMENT CONNECTIONS, SPLICES AND DETAILS, WITH CRITERIA SHOWN FOR CONNECTION DESIGN. FABRICATOR SHALL CERTIFY THAT CONNECTIONS ARE DESIGNED FOR TRUSS FORCES SHOWN ON THE SHOP DRAWINGS.

8. CUT ALL MEMBERS TO FIT AND BUTT TIGHT.

9. ROOF TRUSS SPACING SHALL NOT EXCEED 2'-0" CENTER TO CENTER.

10. FABRICATOR SHALL PROVIDE ALL STEEL CONNECTORS TO CONNECT TRUSSES TO THE SUPPORTING STRUCTURE ADEQUATE FOR ALL GRAVITY AND UPLIFT LOADS AS INDICATED ON THE SIGNED AND SEALED TRUSS SHOP DRAWINGS. FABRICATOR SHALL CERTIFY THAT CONNECTORS ARE DESIGNED FOR TRUSS FORCES SHOWN ON THE SHOP DRAWINGS. CONNECTORS SHALL BE BY SIMPSON STRONG-TIE OR ACCEPTED EQUAL.

Project Title:
Addition to
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41 Main Street
Durham, Connecticut 06422

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Revision: *Description:* *Date:* *Revised By:*

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Drawing Title: GENERAL NOTES

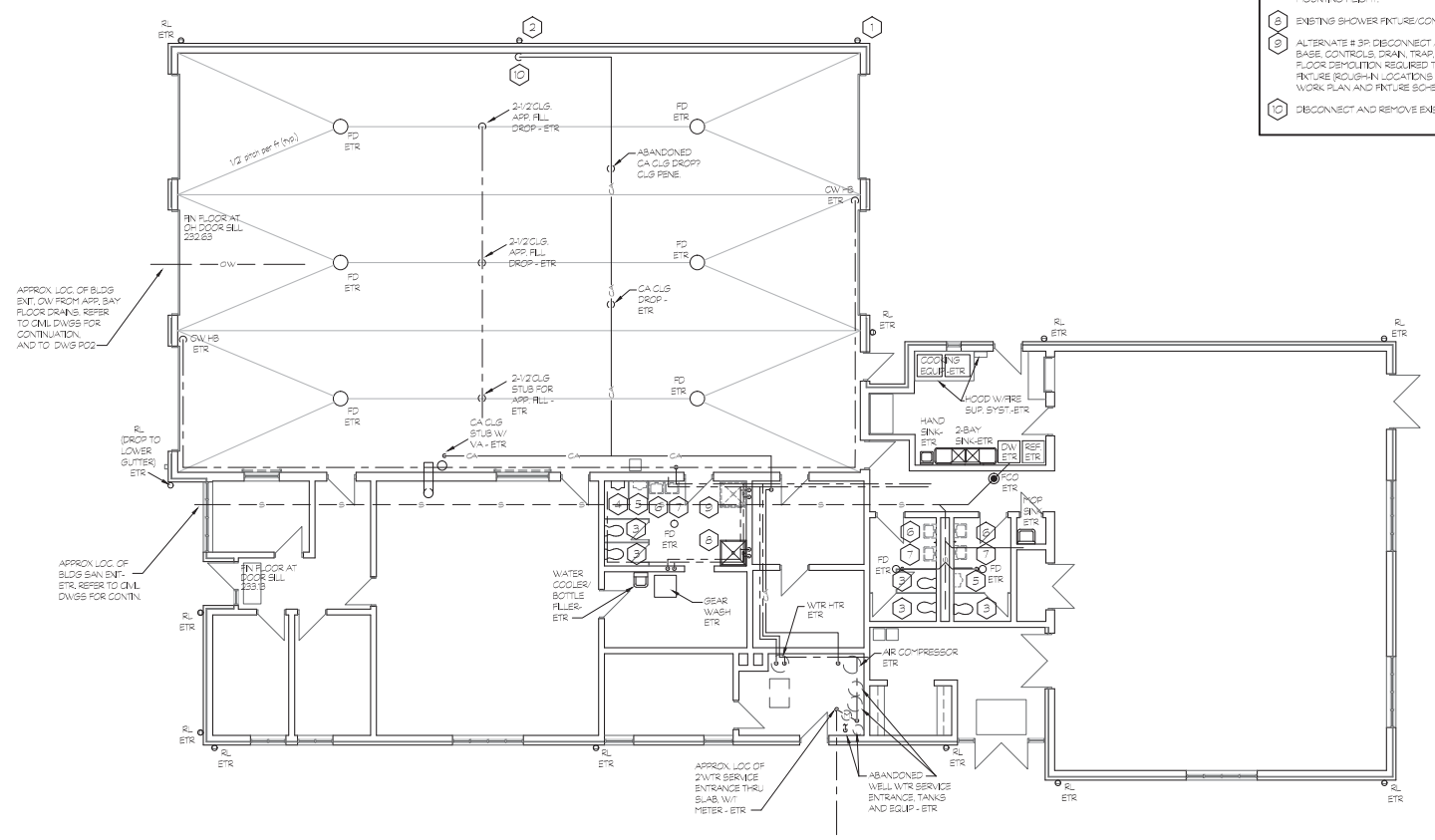
Date: september 14, 2015
Scale: as noted
Drawn By: AC
SPA Project Number: 15.037

Drawing Number: S6

DEMOLITION PLAN KEY NOTES

GENERAL:
REFER TO ARCHITECTURAL DRAWINGS FOR EXACT EXTENT OF DEMOLITION WORK. VIF ALL EXISTING SYSTEMS AND ADJUST FINAL DEMOLITION AND NEW WORK TO COORDINATE WITH SAME.

1. DISCONNECT AND OFFSET EXISTING EXTERIOR RAIN LEADER IN CONFLICT WITH NEW CONSTRUCTION - REFER TO P02 PLUMBING NEW WORK PLAN AND CIVIL DRAWINGS. REMOVE EXISTING LEADER DROP TO BELOW GRADE AND COORDINATE ABANDONMENT OF RELATED BRANCH SITE STORM PIPING WITH THE SITE CONTRACTOR.
2. DISCONNECT AND REMOVE EXISTING EXTERIOR RAIN LEADER IN CONFLICT WITH NEW CONSTRUCTION. REMOVE EXISTING LEADER DROP TO BELOW GRADE AND COORDINATE ABANDONMENT OF RELATED BRANCH SITE STORM PIPING WITH THE SITE CONTRACTOR.
3. EXISTING 1.6 GPF TANK TYPE ADA-COMPLIANT WATER CLOSET TO REMAIN.
4. EXISTING FLUSH VALVE BATTERY POWERED SENSOR-OPERATED URINAL TO REMAIN.
5. DISCONNECT AND REMOVE EXISTING URINAL, FLUSH VALVE, FIXTURE SUPPORT, ETC. COORDINATE WALL/CHASE DEMOLITION REQUIRED TO MODIFY ROUGH-IN AND FIXTURE SUPPORT FOR NEW ADA COMPLIANT FIXTURE (ROUGH-IN LOCATIONS AND MOUNTING HEIGHT WILL CHANGE). REFER TO P02 PLUMBING NEW WORK PLAN, FIXTURE SCHEDULE, AND TO ARCHITECTURAL DRAWINGS FOR NEW MOUNTING HEIGHT.
6. DISCONNECT AND REMOVE EXISTING LAVATORY, FAUCET, DRAIN, TRAP, FIXTURE SUPPORT, ETC. COORDINATE WALL/CHASE DEMOLITION REQUIRED TO MODIFY ROUGH-IN AND FIXTURE SUPPORT FOR NEW LAV. FIXTURE (ROUGH-IN LOCATIONS AND MOUNTING HEIGHT MAY CHANGE). REFER TO P02 PLUMBING NEW WORK PLAN, FIXTURE SCHEDULE, AND TO ARCHITECTURAL DRAWINGS FOR NEW MOUNTING HEIGHT.
7. DISCONNECT AND REMOVE EXISTING LAVATORY, FAUCET, DRAIN, TRAP, FIXTURE SUPPORT, ETC. COORDINATE WALL/CHASE DEMOLITION REQUIRED TO MODIFY ROUGH-IN AND FIXTURE SUPPORT FOR NEW ADA COMPLIANT FIXTURE (ROUGH-IN LOCATIONS AND MOUNTING HEIGHT MAY CHANGE). REFER TO P02 PLUMBING NEW WORK PLAN, FIXTURE SCHEDULE, AND TO ARCHITECTURAL DRAWINGS FOR NEW MOUNTING HEIGHT.
8. EXISTING SHOWER FIXTURE/CONTROLS/DRAIN AND BASE TO REMAIN
9. ALTERNATE # 3P: DISCONNECT AND REMOVE EXISTING SHOWER ENCLOSURE AND BASE, CONTROLS, DRAIN, TRAP, ACCESSORIES, ETC. COORDINATE ADDITIONAL FLOOR DEMOLITION REQUIRED TO MODIFY ROUGH-IN FOR NEW ADA COMPLIANT FIXTURE (ROUGH-IN LOCATIONS WILL CHANGE). REFER TO P02 PLUMBING NEW WORK PLAN AND FIXTURE SCHEDULE.
10. DISCONNECT AND REMOVE EXISTING COMPRESSED AIR DROP BACK TO ATTIC.



NORTH

PLUMBING DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

1 / P01

Project Title:
Addition to
Durham Volunteer Fire Co.
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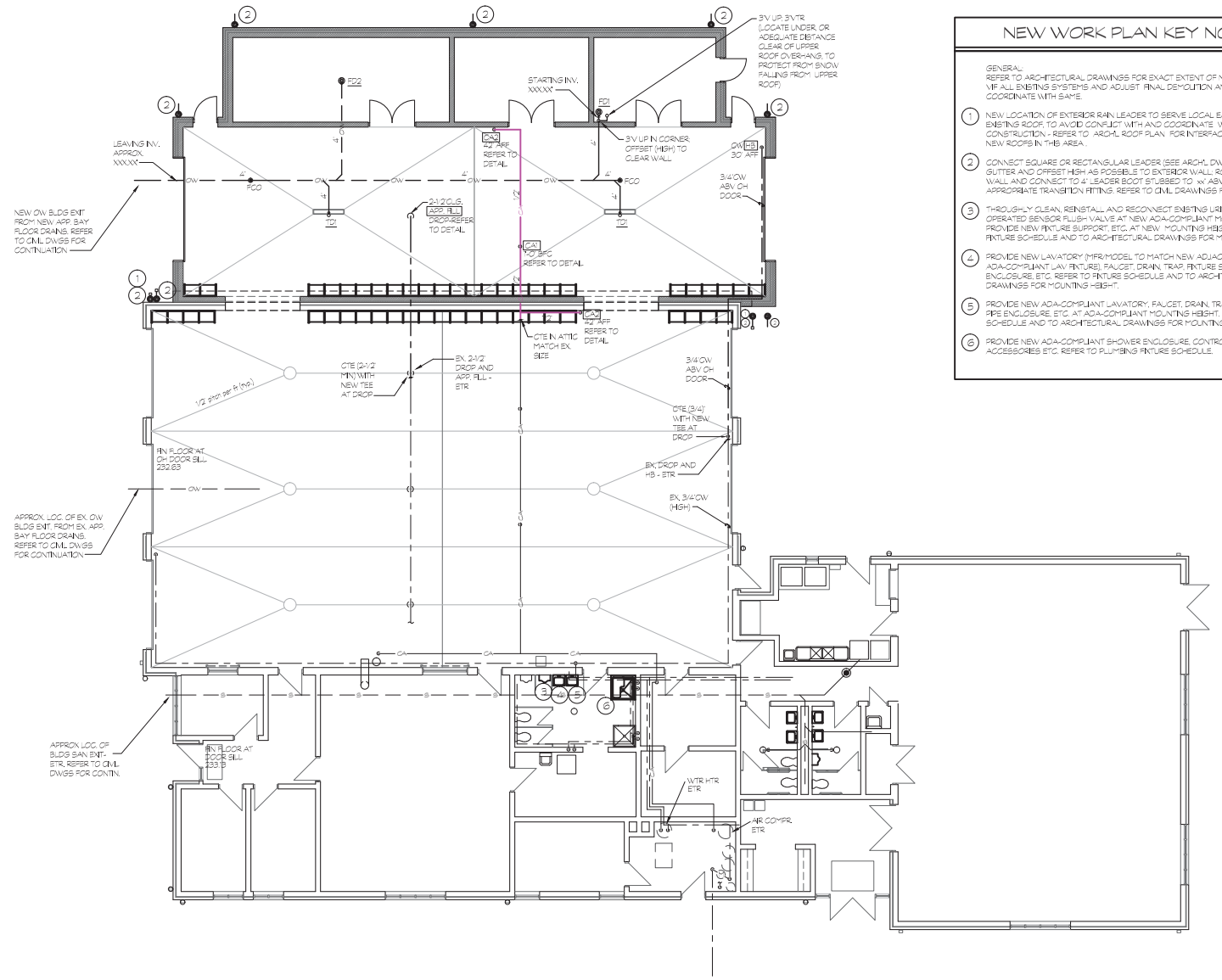
Drawing Title:
PLUMBING DEMOLITION PLAN

Date: SEPTEMBER 14, 2015
Scale: 1/8" = 1'-0"
Drawn By: MBQ
SPA Project Number: 15.037

Drawing Number: P01



NEW WORK PLAN KEY NOTES

(GENERAL)
REFER TO ARCHITECTURAL DRAWINGS FOR EXACT EXTENT OF NEW WORK.
VIF ALL EXISTING SYSTEMS AND ADJUST FINAL DEMOLITION AND NEW WORK TO COORDINATE WITH SAME.

1. NEW LOCATION OF EXTERIOR RAIN LEADER TO SERVE LOCAL EAST PORTION OF EXISTING ROOF, TO AVOID CONFLICT WITH AND COORDINATE WITH NEW CONSTRUCTION - REFER TO ARCHL ROOF PLAN FOR INTERFACE OF EXISTING AND NEW ROOFS IN THIS AREA .
2. CONNECT SQUARE OR RECTANGULAR LEADER (SEE ARCHL DWGS/SPECS) TO GUTTER AND OFFSET HIGH AS POSSIBLE TO EXTERIOR WALL, ROUTE DOWN ON WALL AND CONNECT TO 4" LEADER BOOT STUBBED TO 1'-6" ABV FIN. GRADE WITH APPROPRIATE TRANSITION FITTING. REFER TO CIVIL DRAWINGS FOR CONTINUATION.
3. THOROUGHLY CLEAN, REINSTALL AND RECONNECT EXISTING URINAL/BATTERY OPERATED SENSOR FLUSH VALVE AT NEW ADA-COMPLIANT MOUNTING HEIGHT. PROVIDE NEW FIXTURE SUPPORT, ETC. AT NEW MOUNTING HEIGHT. REFER TO FIXTURE SCHEDULE AND TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT.
4. PROVIDE NEW LAVATORY (MFR/MODEL TO MATCH NEW ADJACENT ADA-COMPLIANT LAV FIXTURE), FAUCET, DRAIN, TRAP, FIXTURE SUPPORT, PIPE ENCLOSURE, ETC. REFER TO FIXTURE SCHEDULE AND TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT.
5. PROVIDE NEW ADA-COMPLIANT LAVATORY, FAUCET, DRAIN, TRAP, FIXTURE SUPPORT, PIPE ENCLOSURE, ETC. AT ADA-COMPLIANT MOUNTING HEIGHT. REFER TO FIXTURE SCHEDULE AND TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT.
6. PROVIDE NEW ADA-COMPLIANT SHOWER ENCLOSURE, CONTROLS, DRAIN, ACCESSORIES ETC. REFER TO PLUMBING FIXTURE SCHEDULE.

NORTH

PLUMBING NEW WORK PLAN

SCALE: 1/8" = 1'-0"

1 / P02

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Revision:	Description:	Date:	Revised By:

Drawing Title:
PLUMBING
NEW WORK PLAN

Date: SEPTEMBER 14, 2015
Scale: 1/8" = 1'-0"
Drawn By: MBQ
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P02

PLUMBING SYMBOL LEGEND

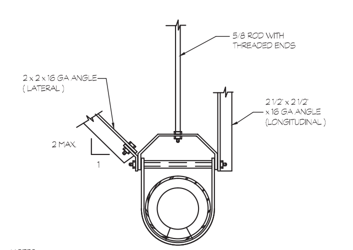
SYMBOL	DESCRIPTION
	AIR ADMITTING VALVE
	BALANCING VALVE
	BALL VALVE
	VALVE IN UNDERGROUND BOX
	BACKWATER VALVE
	CHECK VALVE
	GAS VALVE
	PRESSURE REGULATING VALVE
	THERMOSTATIC MIXING VALVE
	GATE VALVE
	SUPPLY VALVE
	METER
	REDUCED PRESSURE BACKFLOW PREVENTER
	CLOTHES WASHER CONNECTION
	FLOOR CLEANOUT
	WALL CLEANOUT
	YARD CLEANOUT
	FLOOR DRAIN
	FLOOR DRAIN WITH FUNNEL
	FLOOR SINK WITH FULL GRATE
	FLOOR SINK WITH HALF GRATE
	FLOOR SINK WITH THREE-QUARTER GRATE
	HUB DRAIN
	ROOF DRAIN
	ROOF OVERFLOW DRAIN
	TRENCH DRAIN
HB	HOSE BIBB
	POINT OF NEW CONNECTION
	POINT OF DISCONNECTION
	VENT THROUGH ROOF
	RECIRCULATION PUMP
	WATER HAMMER ARRESTOR
TP	TRAP PRIMER
	'P' TRAP
WH	WALL HYDRANT
	PIPE DOWN
	PIPE UP
	CAPPED PIPE
	CLEANOUT PLUG
	UNION
	DIRECTION OF FLOW
✕ ✕ ✕ ✕ ✕	PIPE OR EQUIPMENT TO BE DEMOLISHED
XXX	PLUMBING FIXTURE
XXX-A	ADA COMPLIANT PLUMBING FIXTURE

PLUMBING ABBREVIATIONS

ABBREVIATION	DESCRIPTION
ADA	AMERICAN DISABILITIES ACT
A.F.F.	ABOVE FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE
B.F.F.	BELOW FINISHED FLOOR
BFP	BACKFLOW PREVENTER
BIV	BUTTERFLY INDICATING VALVE
BLDG	BUILDING
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR
C.E.	CIVIL ENGINEER
CONT	CONTINUED
COP	CLEANOUT PLUG
CPVC	CHLORINATED POLYVINYL CHLORIDE
CV	CHECK VALVE
CW	COLD WATER
D.F.U.	DRAINAGE FIXTURE UNITS
DIA.	DIAMETER
DN	DOWN
DWG	DRAWING
EA	EACH
E.C.	ELECTRICAL CONTRACTOR
EWH	ELECTRIC WATER HEATER
EX.	EXISTING
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDF	FLOOR DRAIN WITH FUNNEL
FDF-R	FLOOR DRAIN WITH ROUND FUNNEL
F.F.	FINISHED FLOOR
F.F.E.	FINISHED FLOOR ELEVATION
FLR.	FLOOR
F.P.C.	FIRE PROTECTION CONTRACTOR
FS	FLOOR SINK
FSB	FLOOR SINK WITH SEDIMENT BUCKET
FSH	FLOOR SINK WITH HALF GRATE
FSQ	FLOOR SINK WITH THREE-QUARTER GRATE
FT	FEET
F.U.	FIXTURE UNITS
GAL	GALLONS
G.C.	GENERAL CONTRACTOR
GPF	GALLONS PER FLUSH
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GWH	GAS WATER HEATER
HD	HUB DRAIN
HP	HORSEPOWER
HR	HOUR
HW	HOT WATER
HWR	HOT WATER RECIRCULATION
KW	KILOWATTS
MAX.	MAXIMUM
MBTUH	THOUSANDS OF BTU PER HOUR
M.C.	MECHANICAL CONTRACTOR
MIN.	MINIMUM
MISC.	MISCELANNEOUS
NC	NORMALLY CLOSED
N.I.C.	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
P.C.	PLUMBING CONTRACTOR
P.R.A.	PROJECTED ROOF AREA
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
RAD.	RADIUS
RD	ROOF DRAIN
RO	ROOF OVERFLOW
RPBFP	REDUCED PRESSURE BACKFLOW PREVENTER
RL	RAINWATER LEADER
S.C.	SITE CONTRACTOR
SF	SQUARE FEET
SS	SANITARY SEWER STACK
TB	THRUST BLOCK
TD	TRENCH DRAIN
TP	TRAP PRIMER
TYP.	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
V	VENT
VB	VACUUM BREAKER
V.I.F.	VERIFY IN FIELD
VS	VENT STACK
VTR	VENT THROUGH ROOF
WCO	WALL CLEANOUT
WH	WALL HYDRANT
WS	WASTE STACK
YCO	YARD CLEANOUT
Ø	DIAMETER

PLUMBING PIPING SYSTEM LEGEND

EXISTING	NEW	DESCRIPTION
		DOMESTIC COLD WATER
		DOMESTIC HOT WATER SUPPLY
140°	140°	DOMESTIC 140°F HOT WATER SUPPLY
		DOMESTIC HOT WATER RETURN
S	S	SANITARY WASTE
S	S	SANITARY WASTE BELOW SLAB
V	V	SANITARY VENT
ST	ST	STORM DRAIN
ST	ST	STORM DRAIN BELOW SLAB
OS	OS	OVERFLOW STORM
G	G	NATURAL GAS
G	G	NATURAL GAS BELOW SLAB
RV	RV	RADON VENT
CA	CA	COMPRESSED AIR
CD	CD	CONDENSATE DRAIN
FM	FM	FORCE MAIN
FM	FM	FORCE MAIN BELOW SLAB
IW	IW	INDIRECT WASTE
GW	GW	GREASE WASTE
GW	GW	GREASE WASTE BELOW SLAB
AW	AW	ACID WASTE
AW	AW	ACID WASTE BELOW SLAB
AV	AV	ACID VENT
OW	OW	OIL WASTE
OW	OW	OIL WASTE BELOW SLAB



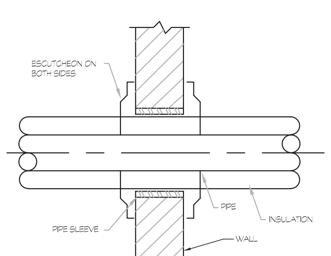
NOTES:

1. PROVIDE LONGITUDINAL AND LATERAL BRACING ON PIPING 2 1/2" AND GREATER, GAS PIPING 1" I.D. AND GREATER AND PIPING IN BOILER AND MECHANICAL ROOMS 1 1/4" AND GREATER, WHERE SUSPENDED 12" OR MORE FROM SUPPORTING STRUCTURE.

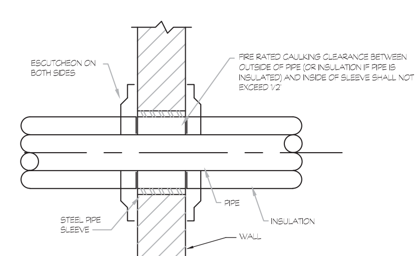
2. PROVIDE SIMILAR BRACING ON ALL DUCTWORK WITH CROSS-SECTIONAL AREA OF 6 SF OR GREATER OR DIAMETER OF 28 IN. OR GREATER WHERE SUSPENDED 12" OR MORE FROM SUPPORTING STRUCTURE.

3. MAKE END CONNECTIONS TO EXISTING STRUCTURAL STEEL WITH 1/2" BOLTS OR TO CONCRETE DECK PER CONNECTION TO CONCRETE DETAIL ABOVE.

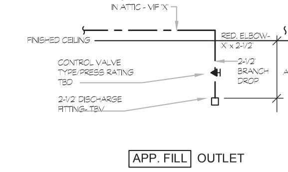
(5) PIPE SUPPORT DETAIL
SCALE: NONE



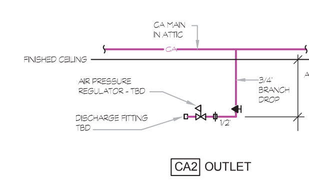
(4) PIPE PENETRATION DETAIL NON-RATED WALL
SCALE: NONE

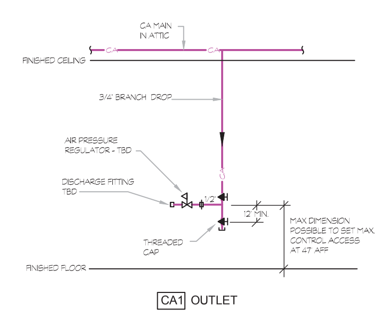


(3) PIPE PENETRATION DETAIL -FIRE RATED WALL
SCALE: NONE



(2) APPARATUS FILL DETAIL
SCALE: NONE





NOTE: DO NOT LOCATE DRIP LEGS WHERE SUBJECT TO FREEZING

(1) COMPRESSED AIR DETAILS
SCALE: NONE

PLUMBING FIXTURE/EQUIPMENT SCHEDULE

MARK	FIXTURE, MODEL NUMBER AND DESCRIPTION	ROUGH-IN WASTE/ SANITARY	ROUGH-IN VENT	ROUGH-IN CW	ROUGH-IN HW
P02 KEY NOTE #3 ACCESSIBLE URINAL	THOROUGHLY CLEAN, REINSTALL AND RECONNECT EXISTING WALL-MOUNTED URINAL AND BATTERY-POWERED SENSOR FLUSH VALVE AT NEW LOWER ADA-COMPLIANT MOUNTING HEIGHT, PROVIDING NEW WALL HANGER. ALL PIPING ROUGH-IN MODIFICATIONS SHALL BE MADE WITHIN THE WALL/CHASE. NO EXPOSED OFFSETS ARE PERMITTED. COORDINATE NEW MOUNTING HEIGHT WITH ARCHITECT PRIOR TO INSTALLATION.	2"	2"	3/4"	--
P02 KEY NOTE #4 LAVATORY	LAVATORY, WALL-MOUNT, VITREOUS CHINA WITH OVERFLOW AND MANUFACTURER'S WALL HANGER, LESS THAN 19-1/2 WIDE, FAUCET HOLES ON 4' CENTERS, AMERICAN STANDARD DECLYN MODEL 0321.026, OR KOHLER CHESAPEAKE MODEL K-1728, PROVIDE SYMMONS 'SCOT' S-20-2-G-FRAW SINGLE EXTRA LONG LEVER FAUCET WITH GRID STRAINER DRAIN, 0.5 GPM FLOW RESTRICTOR. PROVIDE 1-1/2" CHROME PLATED CAST BRASS P-TRAP, SUPPLIES, CHROME-PLATED BRASS ANGLE STOPS WITH LOOSE KEY OPERATION, ETC. FOR COMPLETE INSTALLATION. COORDINATE NEW MOUNTING HEIGHT WITH ARCHITECT PRIOR TO INSTALLATION. PROVIDE TRUEBRO LAVSHIELD ENCLOSURE TO CONCEAL PIPING BELOW LAV	1-1/2	1-1/2	1/2"	1/2"
P02 KEY NOTE #5 ACCESSIBLE LAVATORY	LAVATORY, ADA-COMPLIANT, WALL-MOUNT, VITREOUS CHINA WITH OVERFLOW AND MANUFACTURERS WALL HANGER, LESS THAN 19-1/2 WIDE, FAUCET HOLES ON 4' CENTERS, AMERICAN STANDARD DECLYN MODEL 0321.026, OR KOHLER CHESAPEAKE MODEL K-1728, PROVIDE SYMMONS 'SCOT' S-20-2-G-FRAW SINGLE EXTRA LONG LEVER FAUCET WITH GRID STRAINER DRAIN, 0.5 GPM FLOW RESTRICTOR. PROVIDE 1-1/2" CHROME PLATED CAST BRASS P-TRAP, SUPPLIES, CHROME-PLATED BRASS ANGLE STOPS WITH LOOSE KEY OPERATION, ETC. FOR COMPLETE INSTALLATION. COORDINATE NEW ADA MOUNTING HEIGHT WITH ARCHITECT PRIOR TO INSTALLATION. PROVIDE TRUEBRO LAVSHIELD ENCLOSURE TO CONCEAL PIPING BELOW LAV	1-1/2	1-1/2	1/2"	1/2"
P02 KEY NOTE #6 ACCESSIBLE SHOWER	SHOWER ASSEMBLY, ADA-COMPLIANT, SHOWER ENCLOSURE: AQUATIC # 3636BFS-ADA, FULLY EQUIPPED FOR ADA COMPLIANCE: 36"X36"X80"H I.D., ACRYLIC, WIDE-FRAMED ENTRY OPENING, 1/2" INSIDE THRESHOLD, ADA L-SHAPED GRAB BAR AND L-SHAPED FOLD-UP SEAT, CHROME-PLATED PRESSURE-BALANCING MIXING VALVE, HAND-HELD 1.5 GPM SHOWER ASSEMBLY WITH 24" SLIDE BAR AND 60" HOSE. PROVIDE MFR'S SOAP DISH, CURTAIN ROD AND CURTAIN, AND BRASS DRAIN. ENCLOSURE COLOR SELECTION BY ARCHITECT.	2"	2"	1/2"	1/2"
HB	INTERIOR HOSE BIBB, ADA-COMPLIANT WOODFORD MODEL 40HT-LH, LEVER HANDLE, 1/2 TURN OPERATION, INTEGRAL VACUUM BREAKER. SECURE AT TOP, AT BASE AND AT INTERMEDIATE POINTS ALONG PIPE DROP FOR COMPLETELY RIGID DROP AND FIXTURE INSTALLATION.	--	--	3/4"	--
FP-HB	FREEZE PROOF HOSE BIBB, WOODFORD MODEL 65, CAST BRONZE NON-FREEZE WALL HYDRANT WITH LOOSE TEE KEY OPERATION, 3/4" INLET, 3/4"NPT OUTLET, INTEGRAL ASSE 1011 ANTI-SIPHON VACUUM BREAKER	--	--	3/4"	--
SA	WATER HAMMER ARRESTOR, PRECISION PLUMBING PRODUCTS (PPP) SC SERIES, 1/2"-1", SIZE AND LOCATE PER MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS	--	--	1/2"-1"	--
TP	ELECTRIC TRAP PRIMER, PRECISION PLUMBING PRODUCTS (PPP) MP-500 SERIES, CONSISTING OF CIRCUIT BREAKER (MIN. 2 AMP), SWITCH TIMER, SOLENOID VALVE, ANTI-SIPHON ATMOSPHERIC VACUUM BREAKER, 120V, SINGLE PHASE, SURFACE OR RECESSED CABINET BASED ON WALL CONDITIONS (REFER TO DWGS.) COORDINATE ACCESS PANEL FINISH WITH ARCHITECT. COORDINATE NUMBER OF OUTLETS AS REQUIRED BY QUANTITY OF DRAINS. INSTALL PER MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS	--	--	1/2"	--

NOTES:
1. LAVATORY SUPPLIES SHALL BE BRASS W/ BRASS ANGLE STOPS FOR 1/2" WATER SUPPLY LINES, W/ LOOSE KEY (W/CAP), AND WALL FLANGE. ALL COMPONENTS SHALL BE POLISHED CHROME FINISH. MANUFACTURER: BRASS CRAFT OR APPROVED EQUAL.

2. CAST BODY 'P' TRAP 1-1/2" x 1-1/2" WITH HEAVY CAST J-BEND & FLAT CLEANOUT PLUG, SLIP NUTS AND WALL FLANGE. ALL COMPONENTS SHALL BE POLISHED CHROME FINISH. MANUFACTURER: BRASS CRAFT OR APPROVED EQUAL.

3. STRAINERS SHALL BE FURNISHED WITH FIXTURES AS REQUIRED. FOR H/C LAVATORY OR SINKS PROVIDE OFFSET TAILPIECE.

4. PROVIDE TRUEBRO LAVSHIELD ENCLOSURE FOR ALL ADA-COMPLIANT LAVATORY INSTALLATIONS. PROVIDE TRUEBRO IPS SOFTGUARD PLUS ASTM E 84 PIPE INSULATION KIT FOR EXPOSED PIPING BELOW FIXTURE, ALL ADA COUNTERSET AND WALL-MOUNT SINK INSTALLATIONS.

5. THE PLUMBING FIXTURE VENDOR(S) SHALL COORDINATE WITH THE PLUMBING AND GENERAL CONTRACTOR ALL PLUMBING FIXTURES ROUGH IN DIMENSIONS BEFORE CONSTRUCTION BEGINS.

6. REFER TO ARCHITECTURAL DRAWINGS FOR STANDARD AND A.D.A. MOUNTING HEIGHTS. REFER TO ARCHITECTURAL FOR LOCATION OF A.D.A COMPLIANT SHOWER SEAT AND SHOWER BARS

7. CONTRACTOR TO PROVIDE AN EXTRA 10% OF BATTERIES, AERATORS, CARTRIDGES, ETC.

DRAIN SCHEDULE

MARK	FIXTURE, MODEL NUMBER AND DESCRIPTION	ROUGH-IN TRAP	ROUGH-IN WASTE	ROUGH-IN VENT
FD1	FLOOR DRAIN (SCBA STORAGE), WADE 1103ER7-39, CAST IRON FLOOR DRAIN WITH FLANGE, INTEGRAL CLAMPING COLLAR, SEEPAGE OPENINGS, 1/2" PRIMER TAP, AND ADJUSTABLE 7" DIAMETER NICKEL BRONZE STRAINER WITH EXTENDED RIM AND VANDALPROOF SCREWS. PROVIDE (-39) OPTION (GALVANIZED IRON PARTS).	3"	3"	CDV SYSTEM; REFER TO DRWGS
FD2	FLOOR DRAIN (HOSE DRYING), WADE 1003-STD7-39, CAST IRON FLOOR DRAIN WITH FLANGE, INTEGRAL CLAMPING COLLAR, SEEPAGE OPENINGS, 1/2" PRIMER TAP, AND ADJUSTABLE 7" DIAMETER SATIN FINISH NICKEL BRONZE STRAINER WITH VANDALPROOF SCREWS. PROVIDE (-39) OPTION (GALVANIZED IRON PARTS).	3"	3"	CDV SYSTEM; REFER TO DRWGS
FD3	SHOWER DRAIN (SHOWER ENCLOSURE, (IF NOT FURNISHED INTEGRAL TO ENCLOSURE), WATTS FD-100-A5-7, HEAVY DUTY CAST IRON BODY, BOTTOM OUTLET, 5" DIAMETER NICKELBRONZE TOP, TRAP PRIMER CONNECTION, SEEPAGE PAN AND COMBINATION MEMBRANE FLASHING CLAMP. PROVIDE (-39) OPTION (GALVANIZED IRON PARTS).	2"	2"	2"
TD1	12" WIDE CAST IRON MULTIPLE SECTION TRENCH DRAIN, WITH FLANGE AND SPECIAL DUTY (OVER 10,000 LBS) DUCTILE IRON LOOSE SET GRATES. WADE MODEL 2920, 24" SEGMENT WITH 4" BOTTOM OUTLET, AND 2920 1-FT EXTENSION AT EACH END FOR A TOTAL LENGTH OF 4 FT. PROVIDE (-39) OPTION (GALVANIZED IRON PARTS). CONTRACTOR SHALL COORDINATE THE LOCATION, PROVISION AND INSTALLATION OF ALL CONCRETE CONTROL JOINTS AT ALL TRENCH DRAINS WITH MFR'S BEST RECOMMENDATIONSS AND STRUCTURAL ENGINEER'S REQUIREMENTS.	4"	4"	CDV SYSTEM; REFER TO DRWGS.

NOTES:
1. PROVIDE TRAP PRIMERS FOR ALL FLOOR AND TRENCH DRAINS EXCEPT DRAINS INCORPORATING A CONSTANT AND REGULAR WASTE ARE NOT REQUIRED TO INTEGRATE TRAP PRIMERS (I.E. SHOWER DRAINS) NEED NOT BE PROVIDED WITH TRAP PRIMER SERVICE.

2. TRANSITION COUPLINGS AND NO-HUB PIPE SHALL NOT BE INSTALLED BELOW SLAB OR IN ANY BURIED CONDITIONS IN CONTACT WITH EARTH

Project Title:
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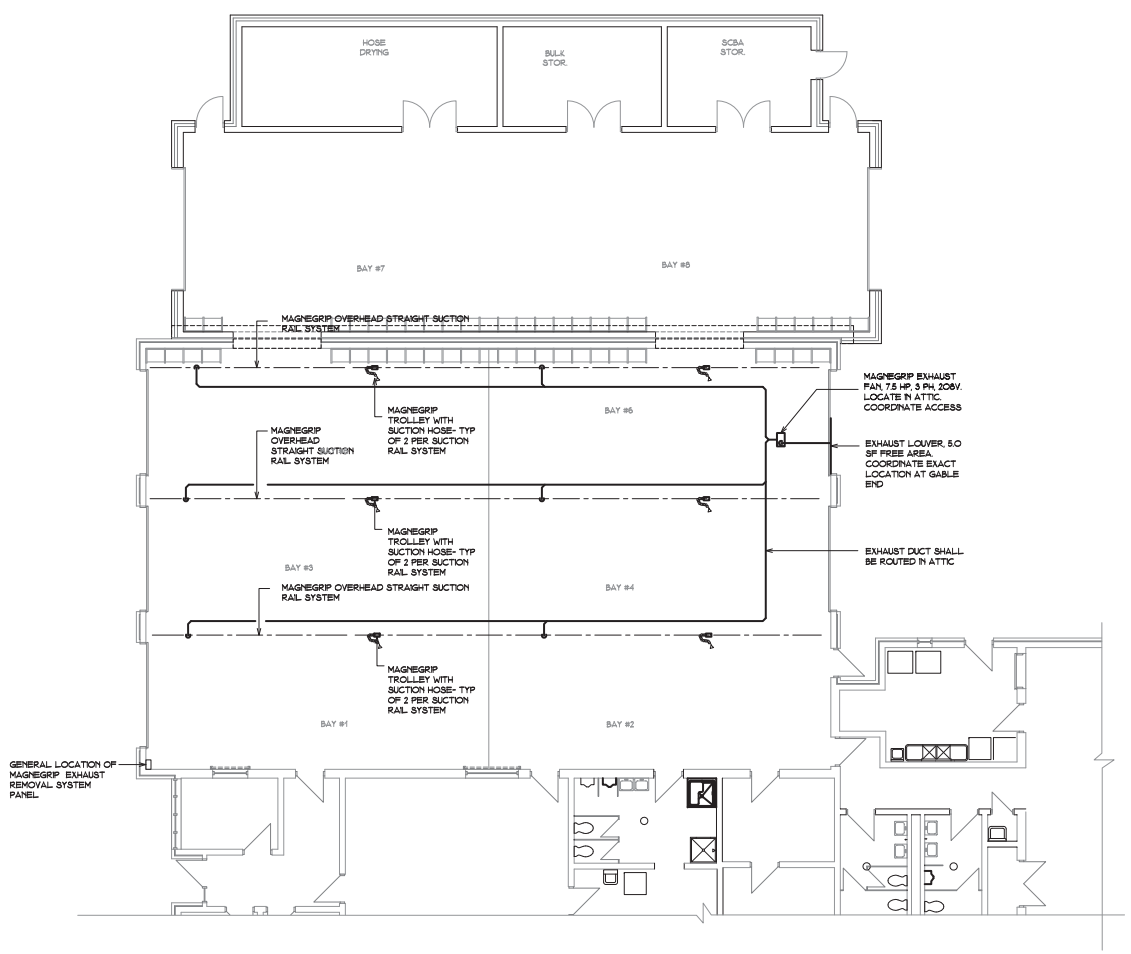
Revision:	Description:	Date:	Revised By:

Drawing Title:
PLUMBING NOTES, LEGENDS, SCHEDULES, AND DETAILS

Date: SEPTEMBER 14, 2015
Scale: NOT TO SCALE
Drawn By: MBQ
SPA Project Number: 15.037

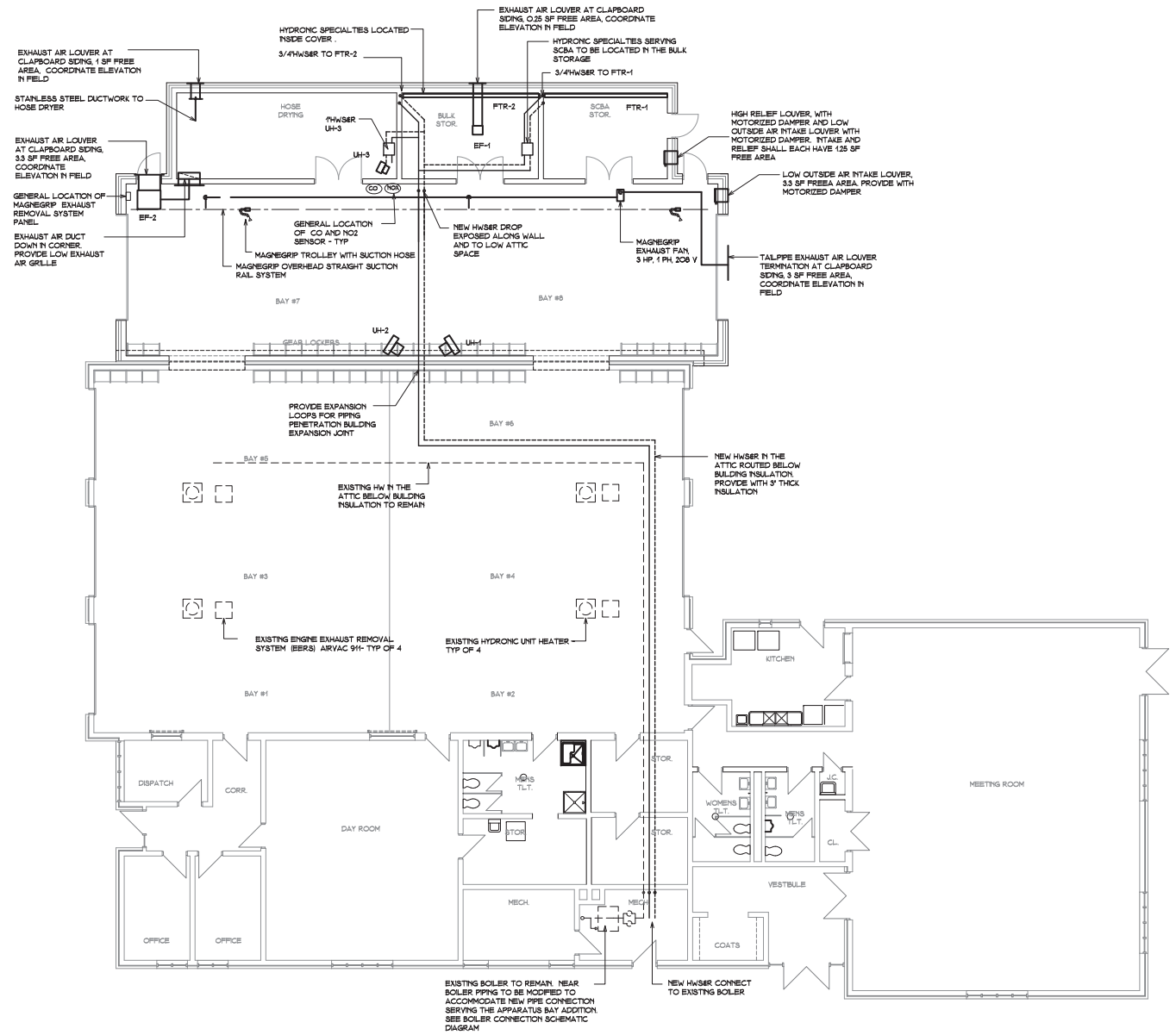
Drawing Number: P03



ADD ALTERNATE: NEW TAILPIPE EXHAUST AT EXISTING BAYS

SCALE: 1/8" = 1'-0"

2 / M01



MECHANICAL PLAN

SCALE: 1/8" = 1'-0"

1 / M01

NORTH

Project Title:
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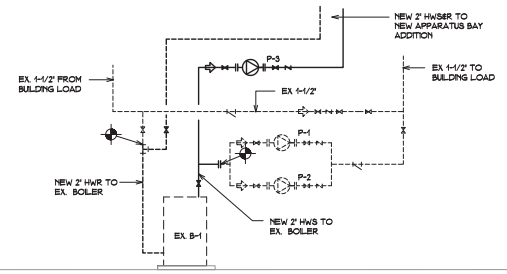
Revision:	Description:	Date:	Revised By:

Drawing Title: MECHANICAL PLAN

Date: SEPTEMBER 14, 2015
Scale: 1/8" = 1' - 0"
Drawn By: AMG
SPA Project Number: 15.037

Drawing Number: M01



EXISTING BOILER CONNECTION DIAGRAM

NOT TO SCALE

EXHAUST FAN SCHEDULE

TAG	AREA SERVED	TYPE	CFM	STATIC PRESS (IN. WG.)	FAN RPM	ELECTRICAL VOLTS/	ELECTRICAL HP	ELECTRICAL OPERATING POWER	MOTOR RPM	MODEL	SONES	NOTES
EF-1	STORAGE	CEILING	150	0.375	1160	115/1	111W	-	-	GC-164	3.7	1,2
EF-2	APPARATUS BAY	IN-LINE	2700	0.75	1216	115/1	1 HP	-	-	SQ- 160- VG	-	1,3

REMARKS:
1. SUPPORT FROM STRUCTURE. PROVIDE WITH VIBRATION ISOLATION AND SEISMICALLY SUPPORT.
2. PROVIDE CEILING FANS WITH DISCONNECT SWITCH, ALUMINUM INTAKE GRILLE, VIBRATION ISOLATION, BACKDRAFT DAMPER, SOLID STATE SPEED CONTROLLER, INTERLOCK EXHAUST FAN WITH LIGHT SWITCH BY DIV 16.
3. PROVIDE DIRECT DRIVE INLINE FANS WITH: ELECTRONIC COMMUTATION TYPE MOTOR WITH 0-10V CONTROL WIRE INPUT, VIBRATION ISOLATOR, DISCONNECT SWITCH, FAN HOUSING WITH 0.5 INCH THICK INSULATION, MOTORIZED DAMPER.INTERLOCK WIRING OF MOTORIZED DAMPER AND EXHAUST FAN BY DIV 26.

UNIT HEATER SCHEDULE

(BASED ON MODINE)

SYMBOL	LOCATION	HEATING CAPACITY (MBH)	WATER DATA GPM	WATER DATA WPD(FT)	WATER DATA EWT(F)	AIR DATA CFM	AIR DATA EAT (F)	AIR DATA LAT (F)	ELECTRICAL VOLTAGE/HZ/PH	ELECTRICAL HP	MODEL	REMARKS
UH-1	APPARATUS BAY	121.0	13.5	-	180	3240	60	95	115/60/1	1/2	HC 165	1 TO 3
UH-2	APPRATUS BAY	121.0	13.5	-	180	3240	60	95	115/60/1	1/2	HC 165	1 TO 3
UH-2	APPRATUS BAY	17.55	4.7	-	180	630	60	95	115/60/1	1/25	HC 33	1 TO 3

REMARKS
1. SEISMICALLY SUPPORT
2. DISCONNECT SWITCH BY DIVISION 26
3. CAPACITY BASED ON -- % GLYCOL SOLUTION

FINNED TUBE RADIATION SCHEDULE

(BASED ON MODINE)

SYMBOL	LOCATION	MODEL	HEATING ELEMENT AT 170F MEAN WATER TEMP (BTUH/LF)	ROWS OF ELEMENT	TUBE DIAMETER (IN)	ENCLOSURE HEIGHT (IN)	BARE HEATING ELEMENT FIN SIZE	BARE HEATING ELEMENT FIN/FT	ELEMENT ACTIVE LENGTH (QTY X L)	REMARKS
FTR-1	SCBA	MODEL SS	870	1	3/4	18	4- 1/4 SQ	42	2 X 6 FT	1 TO 2
FTR-2	BULK STO	MODEL SS	870	1	3/4	18	4- 1/4 SQ	42	2 X 8 FT	1 TO 2

REMARKS
1. DOUBLE SLOPE
2. MOUNT AT 7'-0" MINIMUM AFF

PUMPS SCHEDULE

TAG	SERVICE	MANUFACTURER/ MODEL	GPM	HEAD (FT)	PH	VOLTAGE	HZ	HP	REMARKS
P-3	PUMP FOR NEW ADDITION	TACO VIRIDIAN VR20	35	30	1	110- 240	47 - 63	0.035 - 1.088	1,6

REMARKS
1 SUPPORT FROM STRUCTURE. PROVIDE WITH RESTRAINED SPRING VIBRATION ISOLATOR
2 VARIABLE SPEED

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Revision:	Description:	Date:	Revised By:

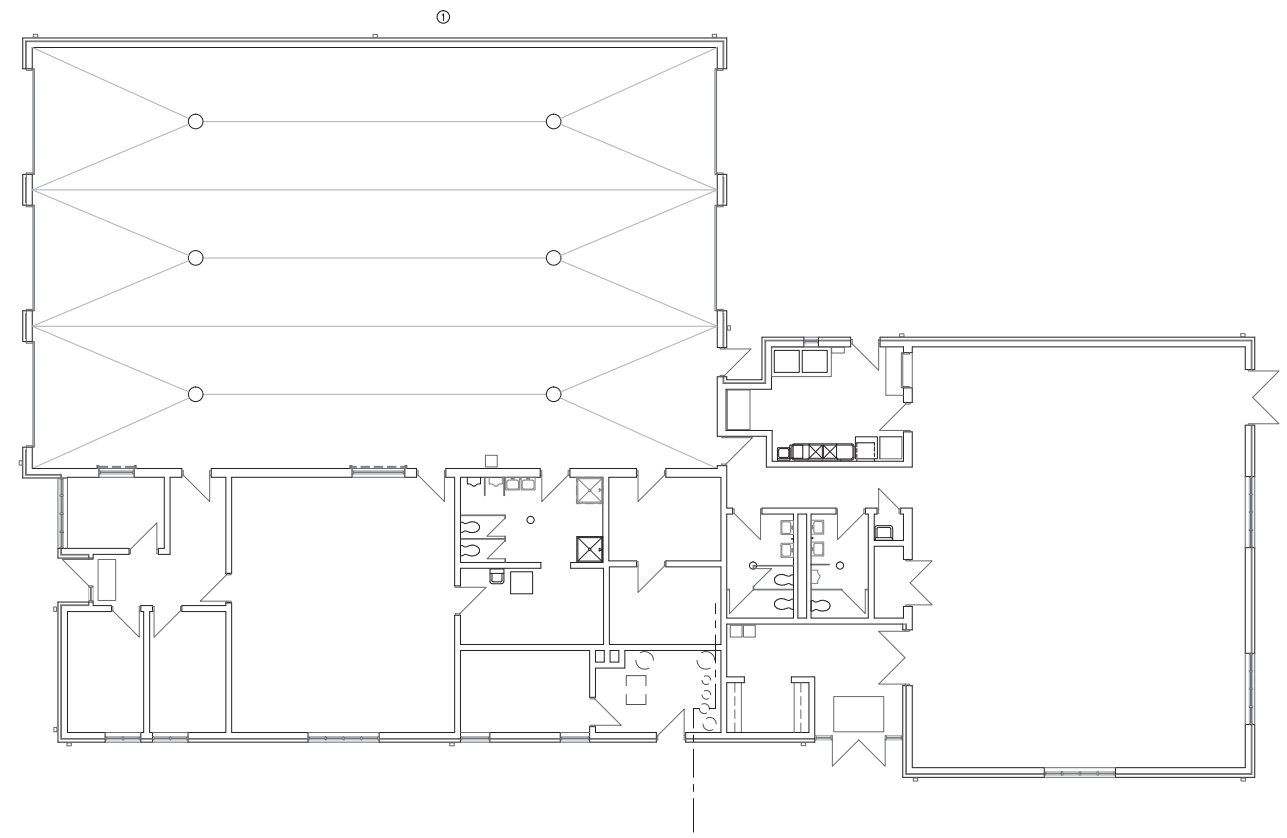
Drawing Title:
SCHEDULE AND BOILER DIAGRAM

Date: SEPTEMBER 14, 2015
Scale: NONE
Drawn By: AMG
SPA Project Number: 15.037

Drawing Number: M02

GENERAL DEMOLITION NOTES

1. ELECTRICAL DEMOLITION TO BE SUPERVISED BY LICENSED ELECTRICAL CONTRACTOR. EACH CIRCUIT TO BE VERIFIED "COLD" AND DISCONNECCTED FROM ELECTRICAL SERVICE PRIOR TO COMMENCING REMOVAL.
2. REMOVE EXISTING ELECTRICAL EQUIPMENT & MATERIALS AS REQUIRED TO ACCOMMODATE ARCHITECTURAL WORK AND AS SPECIFICALLY NOTED ON THE DEMOLITION DRAWINGS.
3. ALL MATERIALS BEING REMOVED SHALL BE HANDLED IN A MANNER COMPLYING WITH ALL PERTINENT LAWS, CODES AND ENVIRONMENTAL REGULATIONS.
4. WHERE ELECTRICAL EQUIPMENT & DEVICES ARE BEING REMOVED, COORDINATE AND FIELD VERIFY IF BRANCH CIRCUIT FEEDS THROUGH TO EQUIPMENT/DEVICES TO REMAIN. BRANCH CIRCUITS SHALL BE SPLICED OR RELOCATED TO MAINTAIN CONTINUATION OF SERVICES.
5. WHERE EXISTING DEVICES ARE REMOVED & NO NEW DEVICES ARE INSTALLED IN THE SAME LOCATION, REMOVE ALL WIRING FROM BOX & PROVIDE PROPERLY SIZED BLANK COVER PLATE.
6. CONTRACTOR SHALL REMOVE ALL FLUORESCENT LIGHT FIXTURE BALLASTS & IDENTIFY THOSE CONTAINING PCB'S, ON ALL REMOVED LIGHTING FIXTURES.
7. REFER TO ABATEMENT SCOPE FOR HANDLING OF MATERIALS. ALL REMOVED COMPONENTS SHALL BE LEGALLY DISPOSED OF BY CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE.
8. ELECTRICAL DEMOLITION SCOPE SHALL BE 100% COMPLETE INCLUDING ALL EQUIPMENT, WIRE, CABLE, DEVICES, AND EXPOSED CONDUIT & BOXES, UNLESS THE ELECTRICAL PANELS OR DEVICES INDICATED IN THIS ELECTRICAL DEMOLITION PLAN TO REMAIN. CONDUIT & BOXES RECESSED IN EXISTING WALLS THAT REMAIN CAN NOT BE ABANDONED IN PLACE. REMOVE ALL ASSOCIATED WIRE & CABLES. COORDINATE WITH OWNER, ELECTRICAL ENGINEER OR ARCHITECTS.
9. COORDINATE ALSO WITH MECHANICAL AND PLUMBING DEMO PLANS FOR EQUIPMENT BEING REMOVED. DISCONNECT POWER AND REMOVE CONDUIT AND WIRING BACK TO PANEL.
10. THE SITE SHALL BE BROOM-CLEANED AT THE END OF EACH WORKDAY.



NORTH

ELECTRICAL DEMOLITION PLAN (1 / ED)

SCALE: 1/8" = 1'-0"

PLAN ELECTRICAL DEMO NOTES

1. REMOVE AND DISPOSE ALL EXISTING ELECTRICAL LIGHTING FIXTURES, LIGHTING AND POWER DEVICES, (AS SWITCHES, POWER OUTLETS, DATA OUTLETS, ELECTRICAL CLOCK ETC.) AND FIRE ALARM DEVICES (SMOKE DETECTORS, HORN/STROBES) AND ASSOCIATED BRANCH CIRCUITS, WIRING OR CONDUITS, IN THE OUTDOOR GARAGE AND EXTERIOR EXISTING WALL ON NORTH ELEVATION. COORDINATE IN FIELD ALL MECHANICAL AND PLUMBING FIXTURES TO BE REMOVED WITH DIV. 22 AND 23.

REFER TO DRAWING "E3" FOR ELECTRICAL SYMBOL LEGEND.

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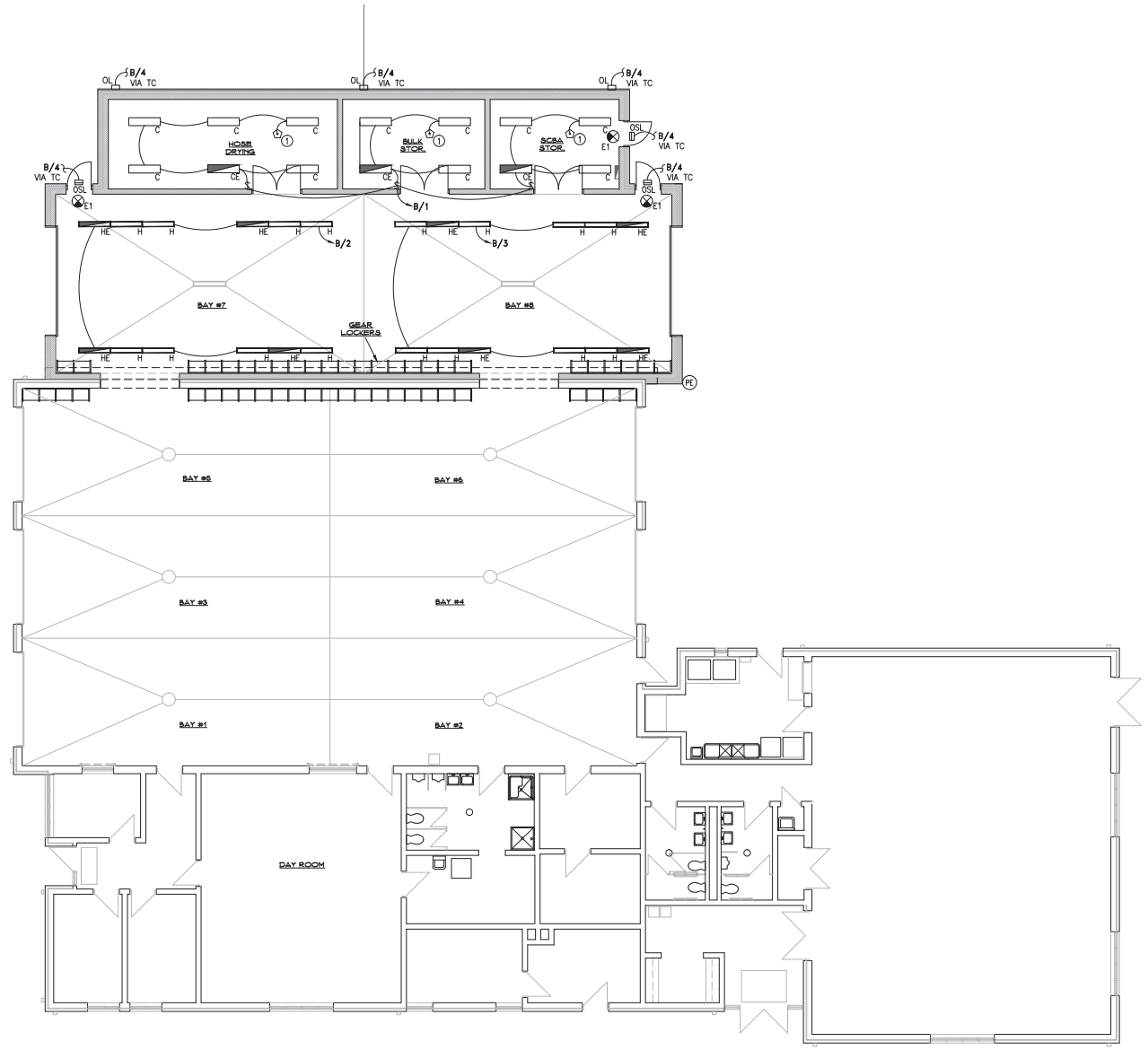
Revision:	Description:	Date:	Revised By:

Drawing Title:
ELECTRICAL DEMOLITION PLAN

Date: SEPTEMBER 14, 2015
Scale: 1/8" = 1'-0"
Drawn By: MS - ELE. ENG.
SPA Project Number: 15.037

Drawing Number:
ED1



NORTH

LIGHTING PLAN (1 / E1)

SCALE: 1/8" = 1'-0"

LIGHTING PLAN NOTES

1. PROVIDE MOTION DETECTOR SWITCH TO OPERATE LIGHT FIXTURE(S) WITHIN THE INTENDED ROOM. COORDINATE WITH OWNER FOR LENGTH OF TIME DELAY SETTING. SEE DETAILS ON DRAWING 'E5'.

REFER TO DRAWING 'E4' FOR ELECTRICAL SYMBOL LEGEND.

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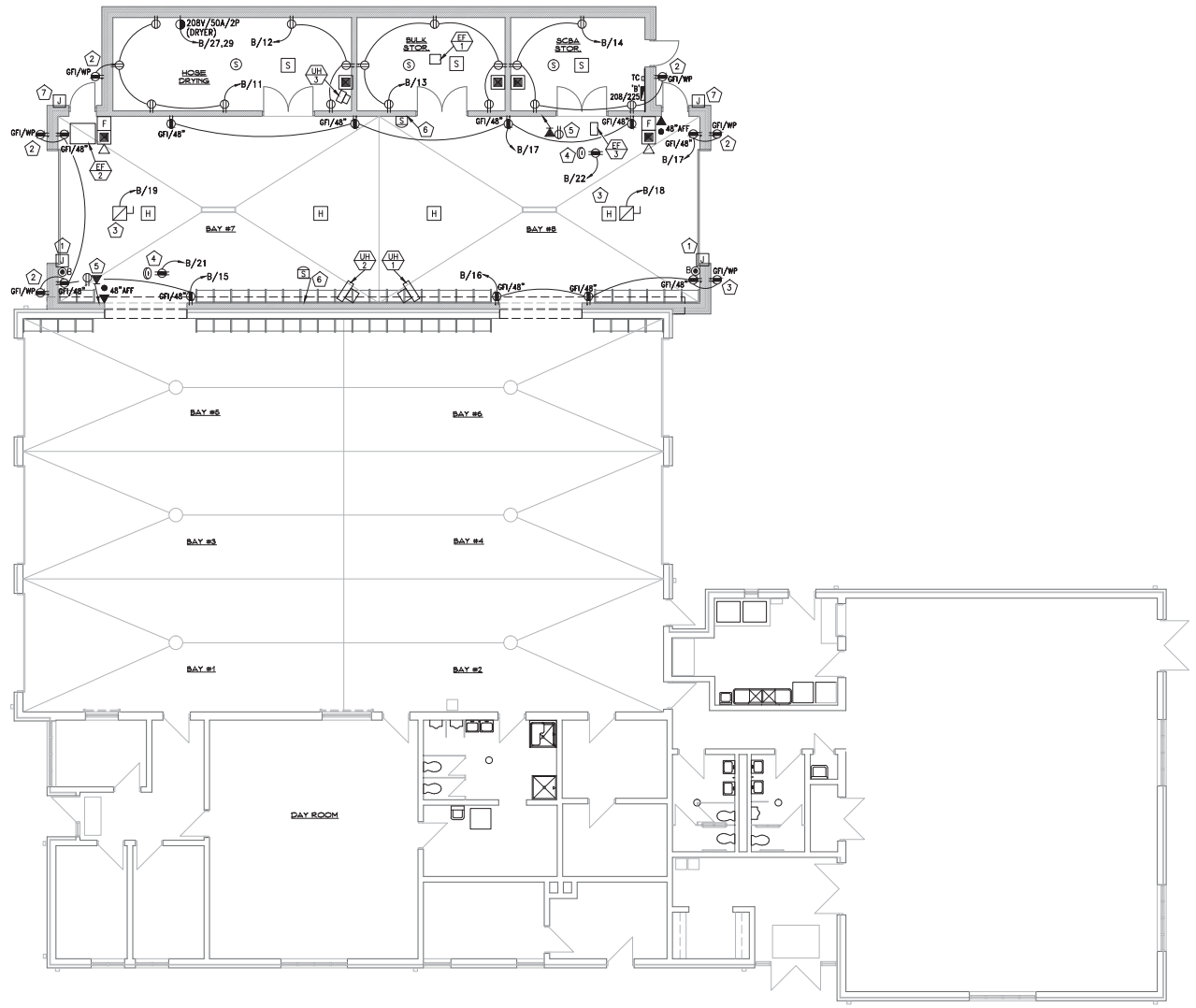
Revision:	Description:	Date:	Revised By:

Drawing Title: LIGHTING PLAN

Date: SEPTEMBER 14, 2015
Scale: 1/8" = 1'-0"
Drawn By: MS- ELE. ENG.
SPA Project Number: 15.037

Drawing Number: E1



POWER PLAN NOTES

1. CONTRACTOR SHALL PROVIDE BOX AND CONDUIT FOR ALL OVERHEAD DOOR OPERATORS. COORDINATE EXACT LOCATIONS AND REQUIREMENTS WITH DOOR INSTALLER. APPARATUS BAY DOORS CAN ALSO BE CONTROLLED BY TBD SYSTEM. PROVIDE ONE 16/4 CABLE FROM EACH DOOR OPERATORS TO EXISTING RADIO ROOM FOR CONNECTION TO RELAYS FURNISHED BY OTHERS.
2. PROVIDE OUTDOOR RECEPTACLE GFCI, WATER-PROOF AND 'WHILE-IN-USE' COVER, HUBBELL MODEL RW57300 OR EQUAL TO MATCH RECEPTACLE.
3. PROVIDE BRANCH CIRCUIT, DISCONNECT SWITCH & CONNECTION TO OVERHEAD DOOR OPERATOR.
4. PROVIDE RECEPTACLE ON CEILING AND CORD REEL FOR VEHICLE CHARGING DROP. USE REELCRAFT L-4545-123-3 OR EQUAL WITH 12/3 CORD AND FEMALE CORD CAP. CONFIRM EXACT LOCATIONS WITH OWNER PRIOR TO ROUGH-IN.
5. PROVIDE RECEPTACLE & BOX FOR DATA JACK AT 8'-6" AFF FOR MONITOR. GROUP DATA JACK CONDUITS & EXTEND TO ACCESSIBLE CEILING. CONNECT RECEPTACLE TO CIRCUIT SERVING OTHER DEVICE AT THIS LOCATION.
6. PROVIDE 1-GANG BOX AT 15' AFF WITH DAISY-CHAINED 3/4" CONDUIT TO EXISTING IT CLOSET FOR PA LOUDSPEAKER.
7. PROVIDE DEDICATED CIRCUIT 'B-24' AND 'B-25' FOR POWER TO DOOR STRIKES WHERE SHOWN. PROVIDE FLUSH 1-GANG BOX AND 3/4" CONDUIT TO CEILING SPACE FOR CARD READER.

REFER TO DRAWING 'E3' FOR ELECTRICAL SYMBOL LEGEND.

NORTH

POWER PLAN (1 / E2)

SCALE: 1/8" = 1'-0"

Project Title:
Addition to
Durham Volunteer Fire Co.
41 Main Street
Durham, Connecticut 06422

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Drawing Title: POWER PLAN

Date: SEPTEMBER 14, 2015
Scale: 1/8" = 1'-0"
Drawn By: MS- ELE. ENG.
SPA Project Number: 15.037

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BAY LIGHTING FIXTURES MOUNTED EXAMPLE

LIGHTING FIXTURE SCHEDULE

DESIGNATION	DESCRIPTION	MANUFACTURER/ MODEL NUMBER	LAMP TYPE	LAMP COLOR TEMP	LAMP NO	ELECTRICAL BALLAST	ELECTRICAL VOLTAGE	ELECTRICAL WATTS	ELECTRICAL LUMENS	NOTES
C	LED LINEAR WRAPAROUND, 4000LM, 4', 4000K, UNIV	PHILIPS LIGHTING DAY-BRITE OWL-4-40L-840-UNIV-CS-500	LED	4000K	---	NO BALLAST	120	47	4000	1
CE	LED LINEAR WRAPAROUND, 4000LM, 4', 4000K, UNIV – W/INTEGRAL BATTERY PACK	PHILIPS LIGHTING DAY-BRITE OWL-4-40L-840-UNIV-CS-500-EMLED	LED	4000K	---	NO BALLAST	120	47	4000	1 2
E	EXIT LIGHT – LED, SINGLE FACE SELF-CONTAINED, END/BACK/TOP MOUNT	EVENLITE-SENTRY CCDS-AC-R-1-WW-CN	LED	---	---	NO BALLAST	120	4		3
EU	EXIT LIGHT & ILLUM. SIGN (COMBO) FOR ACCESSIBLE EXIT W/UNIVERSAL WHEELCHAIR SYMBOL, SELF-CONT.	TELESIS-EVENLITE TLA-AC-R-1-W-CN	LED	---	---	NO BALLAST	120	4		3 4
EXIT	EXIT LIGHT – LED, SINGLE FACE SELF-CONTAINED, END/BACK/TOP MOUNT	EVENLITE-RAZOR RZMR-EM-R-1-WW-W-SLC	LED	---	---	NO BALLAST	120	4		
H	VAPORLUME LED APPARATUS BAY FIXTURE 4', PENDANT, FOR WET LOCATION	PHILIPS LIGHTING DAY-BRITE VZWAE43L840-4-UNV-MD360W	LED	4000K	---	NO BALLAST	120	49	4300	6
HE	VAPORLUME LED APPARATUS BAY FIXTURE 4', PENDANT, FOR WET LOCATION	PHILIPS LIGHTING DAY-BRITE VZWAE43L840-4-UNV-MD360W-EMLED	LED	4000K	---	NO BALLAST	120	49	4300	2 6
OL	EXTERIOR FULL CUTOFF, 101 PERFORMANCE SCONCE LED, WALL MOUNTED	PHILIPS LIGHTING GARDCO 101L-4-55LA-NW-UNIV	LED	4000K	---	NO BALLAST	120	55	4158	5
OSL	EXTERIOR FULL CUTOFF WALL FIXTURE, MINI SCONCE LED, WALL MOUNTED	PHILIIPS LIGHTING-GARDCO 111L-3-40LA-NW-UNIV	LED	4000K	---	NO BALLAST	120	38	2735	5
WM	LED SHADES LED WALL MOUNTED DECORATIVE GOOSENECK STYLE	ANP LIGHTING ORB218-MO311LD-D-W-40K-RTC-WM35-PC/SWL-64	LED	4000K	---	NO BALLAST	120	31	3348	7

LIGHTING SCHEDULE NOTES

1. PROVIDE AIRCRAFT CABLE OR CHAIN AND SUSPEND TO THE CEILING. FIXTURE MUST HAVE MANUFACTURER PROVISION FOR CHAIN OR CABLE MOUNTING.
2. FURNISH W/ FACTORY INTEGRAL BATTERY PACK FOR 90 MINUTES EMERGENCY LIGHTING.
3. PROVIDE W/ FEATURES AND ACCESSORIES NECESSARY FOR UNIVERSAL (TOP, BACK, & END) MOUNTING AND DIRECTIONAL ARROW KNOCKOUTS. ARROWS ON PLANS INDICATE DIRECTION OF CHEVRONS. SHADING INDICATES FIXTURE FACE. CHEVRON & LETTERING SHALL COMPLY W/ NFPA 101.
4. FURNISH EXIT LIGHT COMBINATION WITH UNIVERSAL WHEELCHAIR SYMBOL, MINIMUM 6" HIGH IN ACCORDANCE WITH IBC 1011.1.2., MOUNT AT THE SAME HEIGHT AS EXIT LIGHT.
5. FINISH COLOR SHALL BE SELECTED BY ARCHITECT.
6. CONTRACTOR TO SUPPLY A UL LISTED GRID-BOX ADJUSTABLE AIRCRAFT SUPPORT ASSEMBLY (CANOPY BOX) OR EQUIVALENT, FOR PENDANT LUMINAIRES SUSPENDED. PENDANT FIXTURES TYPE 'H' SHALL BE INSTALLED TYPICAL AT 15'-6" AFF TO THE BOTTOM OF THE FIXTURES.
7. PROVIDE OTHER ACCESSORIES FOR MOUNTING THE LIGHTING FIXTURE, PC BUTTON PHOTO CELL, BACK PLATE, SWLGR18 WIRE GRILL. FINISH: 64 CANDY APPLE RED -116 MARINE GRADE – THERE WILL BE NO EXCEPTIONS GRANTED.
8. ALL EXTERIOR AND INTERIOR FIXTURES IN UNHEATED SPACES SHALL BE CAPABLE OF OPERATING IN COLD TEMP (0° F).
9. TYPICAL ELECTRONIC BALLAST SHALL HAVE MAXIMUM TOTAL HARMONIC DISTORTION OF TEN PERCENT (10
10. FIXTURE MOUNTED IN T-BAR CEILING (GRID) SHALL BE PROVIDED WITH Q1033 (SET OF TWO) (2) 24" EXPANDABLE T-GRID OR WOOD JOIST (PAIR) BAR HANGERS. E.C. TO DETERMINE NUMBERS OF FIXTURES IN FIELD.

NOTES:

VERIFY IN FIELD THE HEIGHT OF FIXTURES 'H' AND 'HE' THE CORD/CABLE LENGTH PRIOR INSTALLATION. VERIFY WITH VENDORS PRIOR TO ORDERING EQUIPMENT.

EXIT = EU, MOUNT ABOVE DOOR.

ELECTRICAL LEGEND

(NOT ALL SYMBOLS ARE USED)

- ELECTRICAL PANEL, 120/208 VOLT.
- PANELBOARD FLUSH MOUNTED.
- PANELBOARD SURFACE MOUNTED.
- NON-FUSED DISCONNECT SWITCH.
- FUSED DISCONNECT SWITCH.
- J JUNCTION BOX, ACCORDING TO NEC REQUIREMENTS.
- MOTOR STARTER. COORDINATE EXACT REQUIREMENTS WITH MOTOR FURNISHED.
- RECESSED LIGHT FIXTURE; SUBLETTER INDICATES FIXTURE TYPE.
- RECESSED LIGHT FIXTURE WITH INTEGRAL BATTERY PACK FOR 90 MINUTE EMERGENCY LIGHTING.
- TYPICAL RECESSED FLUORESCENT TROFFER; SUBLETTER INDICATES FIXTURE TYPE & SIZE.
- LIGHT FIXTURES WITH INTEGRAL BATTERY PACK FOR 90 MINUTE EMERGENCY LIGHTING.
- TYPICAL SURFACE MOUNTED OR CABLE HUNG FLUORESCENT FIXTURE; SUBLETTER INDICATES FIXTURE TYPE & SIZE.
- WALL MOUNTED FIXTURE; SUBLETTER INDICATES FIXTURE TYPE.
- WALL MOUNTED FIXTURE WITH INTEGRAL BATTERY PACK FOR 90 MINUTE EMERGENCY LIGHTING; SUBLETTER INDICATES FIXTURE TYPE.
- E1 CEILING MOUNTED EXIT SIGN. SHADING INDICATES DIRECTION OF FIXTURE FACE. ARROW INDICATES DIRECTION OF CHEVRON. PROVIDE UNSWITCHED POWER FROM AREA LIGHTING CIRCUIT.
- E1 WALL MOUNTED EXIT SIGN. INSTALL AT 7'-6" AFF OR ON EXISTING LOCATION.
- E2 DOUBLE FACE EXIT SIGN.
- E3 WALL MOUNTED OUTDOOR WET LOCATION EXIT SIGN. INSTALL AT 7'-6" AFF OR ON EXISTING LOCATION.
- EU COMBINATION EXIT AND HANDICAP SIGN INSTALL AT 7'-6" AFF OR AS NOTED. ARROW INDICATES OF CHEVRON. PROVIDE UNSWITCHED POWER FROM AREA EMERGENCY LIGHTING CIRCUIT.
- FLOOR PROXIMITY EXIT SIGN, INSTALL 1'-6" AFF.
- TWIN HEAD EMERGENCY LIGHT WITH INTEGRAL BATTERY FOR 90 MINUTE EMERGENCY LIGHTING.
- $ SINGLE-POLE SWITCH; MOUNT AT 48" AFF.
- $3 3-WAY SWITCH; MOUNT AT 48" AFF.
- $4 4-WAY SWITCH; MOUNT AT 48" AFF.
- $M SINGLE-POLE, MOTION SENSOR SWITCH; MOUNT AT 48" AFF.
- $D FLUORESCENT DIMMING CONTROL COMPATIBLE WITH DIMMING BALLASTS.
- $K/$3K KEYED SINGLE-POLE OR 3-WAY SWITCH; MOUNT AT 48" AFF.
- CEILING MOUNTED OCCUPANCY SENSOR. REFER TO SPECIFICATION 16500 FOR DETAILS.
- DUPLEX RECEPTACLE; MOUNT AT 18" AFF UNLESS OTHERWISE SPECIFIED.
- 250-VOLT, 50A, 3POLE, 4 WIRE GROUNDED TYPE RECEPTACLE IN FLUSH OUTLET BOX NEMA 14-50R.
- QUAD RECEPTACLE; MOUNT AT 18" AFF UNLESS OTHERWISE SPECIFIED.
- POWER RECEPTACLE INSTALLED ABOVE CEILING AS SHOWN ON POWER PLANS.
- GFI DUPLEX GROUND FAULT RECEPTACLE; MOUNT AT 18" AFF UNLESS OTHERWISE SPECIFIED.
- WP RECEPTACLE WITH OUTDOOR RATED COVER PLATE. PROVIDE FLUSH MOUNTED BOX.
- TR TAMPER RESISTANCE RECEPTACLE.
- DX COMPUTER NETWORK WORKSTATION PORT. MOUNT AT 18" AFF UNLESS OTHERWISE NOTED. DX = NUMBER OF DATA OUTLETS. PROVIDE CAT6A CABLE (4 PAIR UTP) ON EACH LOCATION AS NOTED.
- TELEPHONE JACK LOCATION. PROVIDE 4" SQUARE BOX, 1-GANG RING & 3/4" CONDUIT TO CEILING SPACE. PROVIDE CAT6A CABLE (4 PAIR UTP) ON EACH LOCATION.
- VX DX VOICE/DATA OUTLET, 4" X 4" OUTLET BOX WITH A 1 GANG COVER 18 INCHES ABOVE FINISHED FLOOR OR AS NOTED WITH 3/4" CONDUIT TO 6" ABOVE ACCESSIBLE CEILING. VX/DX = NUMBER OF VOICE/DATA PORTS. PROVIDE CAT6A CABLE (4 PAIR UTP) ON EACH LOCATION. COORDINATE WITH A/V CONTRACTOR.
- FLUSH OUTLET BOX FOR WALL-MOUNTED TELEPHONE 48" AFF OR AT HEIGHT INDICATED ON PLAN, WITH 3/4" CONDUIT TO 6" ABOVE ACCESSIBLE CEILING. PROVIDE CAT6A CABLE (4 PAIR UTP) ON EACH LOCATION.
- 12" ROUND, BATTERY POWER WIRELESS CLOCK. WALL MTD. 8'-6" AFF OR 8" BELOW CEILING. GYM CLOCK MUST BE PROVIDED WITH PROTECTIVE STEEL WIRE GUARD.
- S 8" RECESSED CEILING SPEAKER WITH BACKBOX, TILE BRIDGE & BAFFLE.
- S WALL MOUNTED PA SYSTEM SPEAKER. MOUNT 8'-6" AFF OR 8" BELOW CEILING.
- S HIGH VOLUME WALL SPEAKER.
- TV TV COAXIAL JACK LOCATION. PROVIDE NEW JACK & COAXIAL CABLE TO HEADEND EQUIPMENT. COORDINATE REQUIREMENTS OF JACK & CABLE WITH OWNER & SYSTEM INSTALLER.
- E CALL-FOR-AID SWITCH. MOUNT AT 36" AFF, W/ PULL CORD HANGING DOWN TO 6" AFF.
- CALL-FOR-AID CORRIDOR LIGHT/BUZZER. MOUNT AT 7'-6" AFF.
- E EMERGENCY GAS SHUT-OFF SWITCH WITH KEY RESET. MOUNT WITH OPERATOR AT 48" AFF.
- AOR AREA OF REFUGE REMOTE COMMUNICATION DEVICE.
- AORM AREA OF REFUGE MASTER STATION. LOCATION TO BE COORDINATED W/ FIRE DEPARTMENT.
- AOR AREA OF REFUGE ILLUMINATED SIGN WITH UNIVERSAL WHEELCHAIR SYMBOL AND 90 MINUTE BATTERY BACKUP, SURFACE MOUNT.
- XXX EQUIPMENT TAG. REFER TO MECHANICAL SCHEDULE FOR BRANCH CIRCUIT & CONTROL REQUIREMENTS.
- CKT BRANCH CIRCUIT HOMERUN (VOLTAGE, BRANCH CIRCUIT POLES).
- PE PHOTOELECTRICAL CELL.
- TC TIME CLOCK.
- AP WIRELESS ACCESS POINT (CABLE AND JACK ONLY IN THIS SCOPE).
- A ELECTRICAL ALARM BELL, FOR DRY AND WET CONDITIONS.
- B OVERHEAD DOOR CONTROL STATION FURNISHED BY OTHERS, INSTALLED BY EC
- D OUTDOOR PUSHBUTTON FOR DOOR CHIME
- DC INDOOR DOOR CHIME
- NL LIGHT FIXTURE TIED TO UNSWITCHED NIGHT LIGHTING CIRCUIT.
- CEILING MOUNTED CORD REEL FOR VEHICLE CHARGING.

LEGEND NOTES:

- REFER TO DRAWING 'E4 One-Line Diagram & FACP' FOR ADDITIONAL SYMBOLS.
- PROVIDE BLACK PAINTED FIRE-RATED PLYWOOD BACKBOARD FOR WALL MOUNTED EQUIPMENT (TYP. PANELBOARDS, PHONE ETC.). ANCHOR AS REQUIRED FOR SEISMIC LOAD.
- COORDINATE IN FIELD WITH A/V CONTRACTOR FOR EXACT RECEPTACLE AND RECESSED TV BOXES LOCATION TO MATCH DATA, AND PROVIDE CONDUIT AND WIRING.
- PER NEC ARTICLE 210.8 (A)(7) GFCI IS REQUIRE TO BE INSTALLED WITHIN 6 FT OF THE OUTSIDE EDGE OF THE SINK.
- COORDINATE WITH MECHANICAL EQUIPMENT LOAD WITH DIV.23.

ABBREVIATIONS

A	AMPERES
AFF	ABOVE FINISHED FLOOR
BC	BATTERY CHARGER
BH	BLOCK HEATER
C	CONDUIT
C/B	CIRCUIT BREAKER
CKT	CIRCUIT
COFF	COFFEE MAKER
CS	CONTROL STATION FOR OVERHEAD DOOR
D	DRYER
EC	ELECTRICAL CONTRACTOR
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
FAAP	FIRE ALARM REMOTE ANNUNCIATOR PANEL
GD	GEAR DRYER
GW	GEAR WASHER
HT, HT CONT.	HEAT TRACE, HEAT TRACE CONTROLLER
JB	JUNCTION BOX
M/B	MAIN BREAKER
M1	UTILITY REVENUE METER
MFP	UTILITY REVENUE METER
MLO	MAIN LUG ONLY
MIC	MICROWAVE
MTD	MOUNTED
NL	NIGHT LIGHT LIGHTING FIXTURE, WIRE TO UNSWITCHED LIGHTING CIRCUIT
PNL	PANELBOARD
PROJ	PROJECTOR
REF	REFRIGERATOR
SLC	POLYCARBONATE SECURITY COVER
TBC	TRUCK BATTERY CHARGING – CORD REEL DROP CABLE ON EACH LOCATION
UCR	UNDER COUNTER REFRIGERATOR
U.O.N.	UNLESS OTHERWISE NOTED
WM	WASHING MASHINE
WP	WEATHERPROOF

LIGHTING & EQUIPMENT SCHEDULES & LEGEND (1 / E3)

SCALE: 1/8" = 1'-0"

Project Title:
Addition to
Durham Volunteer Fire Co.
41 Main Street
Durham, Connecticut 06422

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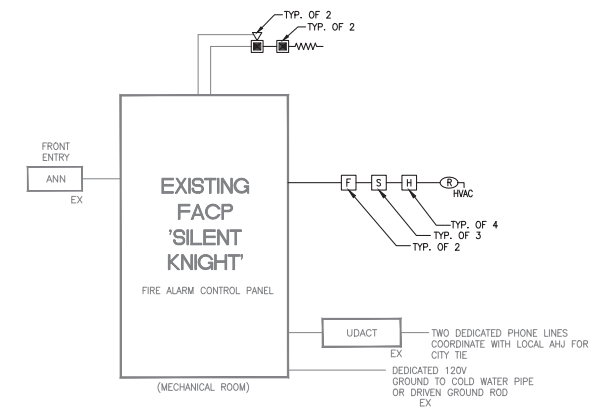

FIRE ALARM LEGEND

FACP	EXISTING 'NOTIFIER' ADDRESSABLE FIRE ALARM CONTROL PANEL
UDACT	EXISTING DIGITAL DIALER W/ TWO PHONE LINES
ANN	EXISTING REMOTE ANNUNCIATOR DISPLAY
S R	ADDRESSABLE PHOTOELECTRIC AREA SMOKE DETECTOR FOR ELEVATOR RECALL FUNCTION – NOTIFIER
H R	ADDRESSABLE 135° FIX–TEMP & R–O–R DETECTOR FOR ELEVATOR SHUNT TRIP FUNCTION – NOTIFIER
R	ADDRESSABLE FA RELAY TO PROVIDE THREE RECALL SIGNALS TO ELEVATOR CONTROL – NOTIFIER
–⁄⁄⁄⁄–	END OF LINE RESISTOR

IMPORTANT ELECTRICAL NOTES:

- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIRE ALARM SYSTEM MODIFICATIONS, ADDITIONS AND PROGRAMMING NECESSARY TO MONITOR ALL NEW DEVICES AND PERFORM CONTROL FUNCTIONS AS DEFINED.

NORTH

ONE-LINE DIAGRAM & FACP RISER DIAGRAM

1 / E4

SCALE: 1/8" = 1'-0"

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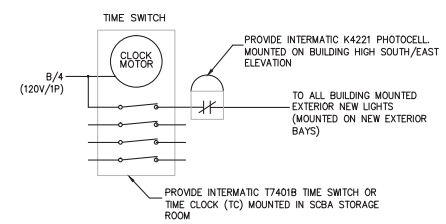
Revision:	Description:	Date:	Revised By:

Drawing Title:
ONE-LINE DIAGRAM & FACP RISER DIAGRAM

Date: SEPTEMBER 14, 2015
Scale: 1/8" = 1'-0"
Drawn By: MS- ELE. ENG.
SPA Project Number: 15.037

Drawing Number: E4

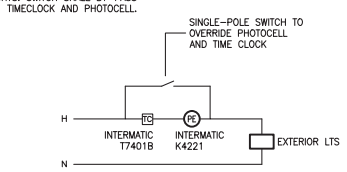
INCLUDE IN THE BASE BID THE PROVISION OF J-HOOK SUPPORTS FOR EXISTING FIBER OPTIC, DATA AND COMMUNICATION CABLING THAT EXISTS UNSUPPORTED ABOVE CEILINGS WHICH ARE BEING REMOVED. THE WORK WILL INCLUDE THE PROVISION OF UP TO 2 ROWS OF J HOOKS LOCATED EVERY 8 FEET ACROSS THE WORK AREA, IF NEED IT. ALL LOOSE CABLING ABOVE THE CEILING WILL BE BUNDLED (AS MUCH AS LENGTHS PERMIT) AND ATTACHED TO STRATEGICALLY PLACED J HOOKS TO FACILITATE THE SUSPENSION OF THE EXISTING CABLES OFF OF THE CEILING GRID.



SITE LIGHTING CONTROL

NTS

OVERRIDE SWITCH FOR EXTERIOR LIGHTS. SWITCH SHALL BY-PASS TIMECLOCK AND PHOTOCELL.



OVERRIDE SCHEMATIC

NTS

OVERRIDE SWITCH WHEN IN THE CLOSE POSITION SHALL OPERATE LIGHTS INDICATED ON DWG. IT IS TO OVERRIDE THE TIME CLOCK AND PHOTOCELL EVEN WHEN EITHER OF THEM ARE IN THE OPEN POSITION.

ELECTRICAL MEANS AND METHODS

(UNLESS OTHERWISE NOTED)

	OPEN CABLE	PIPE & WIRE	MC CABLE	SHARE NEUTRALS
UNDERGROUND CABLE		***		
* POWER BRANCH EXPOSED		***		***
POWER BRANCH CONCEALED			***	***
*LIGHTING BRANCH EXPOSED		***		***
LIGHTING BRANCH CONCEALED			***	***
*LOW VOLTAGE EXPOSED (i.e. Lighting Control)		***		
LOW VOLTAGE CONCEALED	***			
FEEDER EXPOSED		***		
FEEDER CONCEALED		***		
*SEC./PA/Cameras/AV	***			
FIRE ALARM CONCEALED	***			
*FIRE ALARM EXPOSED		***		

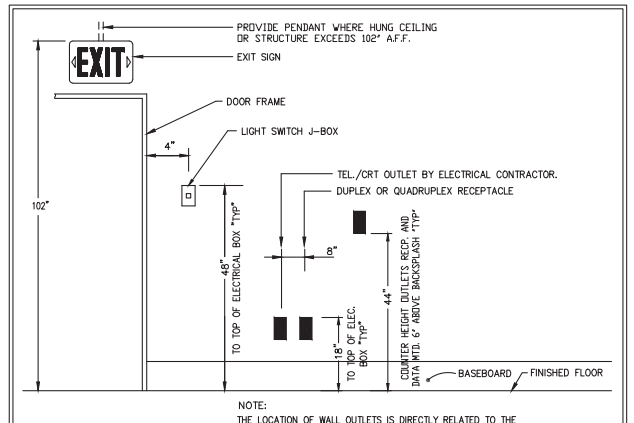
* EXCEPT WERE DRAWINGS CALL FOR 5400 SERIES WIREMOLD.

GENERAL NOTES - ELECTRICAL

1. SPECIFICATION SECTIONS, GENERAL CONDITIONS, SUPPLEMENTAL GENERAL CONDITIONS AND DRAWINGS ARE INTEGRAL PARTS OF CONTRACT DOCUMENTS.
2. SYSTEM COMPONENTS ARE LOCATED APPROXIMATELY ON DRAWINGS. BASE ACTUAL LOCATIONS ON FIELD VERIFICATION OF EXISTING BUILDING CHARACTERISTICS INCLUDING BUT NOT LIMITED TO STRUCTURAL, MECHANICAL, ELECTRICAL & ARCHITECTURAL COMPONENTS.
3. ALL WORK AND ACTION DEPICTED AND DESCRIBED IN CONTRACT DOCUMENTS SHALL BE PERFORMED BY THE CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE.
4. REFERENCE TO SPECIFIC SUB-CONTRACTORS SUCH AS "MECHANICAL", "ELECTRICAL", ETC. ARE INTENDED TO SUGGEST POSSIBLE DIVISION OF RESPONSIBILITY. PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION AND EXECUTION OF ALL WORK.
5. OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND INSPECTIONS.
6. ALL EQUIPMENT, MATERIALS AND RELATED SYSTEM COMPONENTS SHALL BE NEW UNLESS NOTED OTHERWISE.
7. REPAIR AND REPLACE AT NO COST TO OWNER ALL EQUIPMENT AND MATERIALS DAMAGED DURING CONSTRUCTION.
8. CIRCUITING DEPICTED FOR RECEPTACLES & LIGHTING FIXTURES DEFINES GROUPING OF FIXTURES, DEVICES AND COMPONENTS AND REQUIRED CONDUCTORS. CIRCUITING IS NOT INTENDED TO DEFINE CONDUIT LOCATIONS.
9. STUDY THE PROJECT MANUAL & DRAWINGS OF OTHER DISCIPLINES INCLUDING ARCHITECTURAL, STRUCTURAL, CIVIL & MECHANICAL.
10. PROVIDE SUPPORT/BRACING OF EQUIPMENT AND BUILDING SERVICES FOR SEISMIC RESTRAINT AS REQUIRED BY CODE.
11. ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH THE APPLICABLE CODES IN THE ORDINANCES AND THE REGULATORY AGENCIES HAVING JURISDICTION.
12. CONTRACTORS SHALL PROVIDE ALL REQUIRED SLEEVES AND SEALS FOR PIPES OR CONDUIT PENETRATING WALLS OR FLOOR SLABS WITH UL LISTED FIRE STOPPING SEALANT WHERE REQUIRED.
13. ELECTRICAL CONDUITS & BOXES SHALL BE CONCEALED IN WALLS OR ABOVE CEILINGS WHEREVER POSSIBLE.
14. FURNISH & INSTALL GFCI RECEPTACLES IN ALL WET LOCATIONS, WITHIN 4' TO 6' OFF WATER SOURCE.
15. ALL PENETRATIONS THRU RATED WALLS & CEILINGS SHALL BE SEALED USING U.L. LISTED METHODS APPROPRIATE FOR INDICATED RATING.
16. NO PENETRATIONS ARE ALLOWED INTO STAIR ENCLOSURES EXCEPT AS REQUIRED FOR SERVICES UTILIZED IN THE STAIR.
17. ALL DEVICES WITHIN EXISTING AND NEW RATED WALLS (ON BOTH SIDES) SHALL BE SURFACE MOUNTED, REFER TO CODE PLANS FOR WALL RATING.

OTHER ELECTRICAL NOTES

1. CONTRACTOR SHALL COORDINATE THE LOCATION AND QUANTITY OF ALL MECHANICAL EQUIPMENT WITH THE MECHANICAL CONTRACTOR. PROVIDE POWER WIRING TO ALL NEW EQUIPMENT. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS AND INFORMATION.
2. ALL FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF THE FINISHED CEILING OR STRUCTURE AND SHALL BE SEISMICALLY SUPPORTED AS REQUIRED BY CODE AND THE AUTHORITY HAVING JURISDICTION.
3. ALL BRANCH CIRCUIT WIRING SHOWN IS DIAGRAMMATIC. EXACT ROUTING SHALL BE FIELD COORDINATED TO CLEAR THE WORK OF OTHER TRADES.
4. IT IS NOT THE INTENTION TO SHOW EVERY FITTING, HANGER, WIRE OR DEVICE. ALL SUCH ITEMS SHALL BE FURNISHED AND INSTALLED AS NECESSARY FOR A COMPLETE SYSTEM.
5. ALL RECEPTACLES LOCATED ABOVE COUNTER WITH SINKS AND AT ALL WET LOCATIONS SHALL BE GFI TYPE.
6. CONTRACTOR SHALL DETERMINE THE QUANTITY OF CONDUCTORS REQUIRED FOR PROPER OPERATION OF ALL SWITCHING SCHEMES.
7. NO CONDUIT SHALL BE ALLOWED IN CONCRETE SLABS, UNLESS SPECIFICALLY APPROVED BY THE STRUCTURAL ENGINEER.
8. LABEL ALL UNUSED BREAKERS AS SPARE AND TRIP TO THE OFF POSITION.
9. ALL DEVICES COLORS SHALL BE COORDINATED WITH ARCHITECT BE FOR PURCHASING.



NOTE:
THE LOCATION OF WALL OUTLETS IS DIRECTLY RELATED TO THE FURNITURE LOCATION. SPECIAL ATTENTION SHALL BE GIVEN TO LOCATING OUTLETS PER THIS DETAIL.
DO NOT INSTALL OUTLETS BACK TO BACK.

OUTLET MOUNTING DETAIL

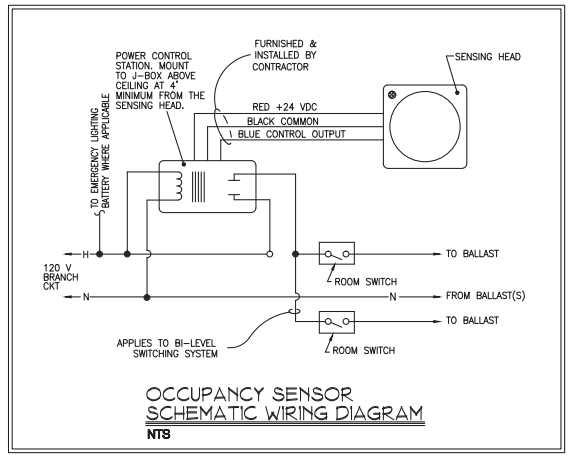
NTS

(TYP. ALL OUTLETS UNLESS OTHERWISE NOTED.)

MOUNTING HEIGHTS

(UNLESS OTHERWISE NOTED)

RECEPTACLE	18" AFF TO TOP OF THE BOX "TYP"
LIGHT SWITCHES	48" AFF TO TOP OF THE BOX "TYP"
CLOCK OUTLETS	7'-6" AFF "TYP"
FA STROBES	7'-6" AFF "TYP"
PULL STATION	48" AFF TO TOP OF THE BOX "TYP"
PANELBOARDS	6'-7" MAXIMUM HEIGHT TO THE CENTER OF THE GRIP OF THE OPERATING HANDLE OF THE SWITCH OR C/B, IN ITS HIGHEST POSITION, AFF, PER NEC 2005 "240.24 (A)", "TYP"



OCCUPANCY SENSOR SCHEMATIC WIRING DIAGRAM

NTS

OCCUPANCY SENSORS DETAILS

WALL MOUNTED USE:
WATTSTOPPER "DW-100", DUAL TECHNOLOGY: (ULTRASONIC AND PIR) OR EQUAL.

CEILING MOUNTED USE:
WATTSTOPPER "UT-300" IN BATHROOMS OR EQUAL.

WATTSTOPPER "DT-300" (DUAL TECHNOLOGY) IN WIDE RANGE OF SPACES, CONFERENCE ROOMS, OFFICES OR EQUAL.

NOTES:
1. MANUFACTURER TO PROVIDE A SENSOR LAYOUT SUBMITTAL DURING THE SUBMITTAL PROCESS.
2. PROVIDE ALL MOUNTING BRACKETS, CLIPS, J-BOX PER MANUFACTURING INSTALLATION REQUIREMENTS. TIME DELAY NO LESS THAN 15 MINUTES. FINAL TEST SHOULD BE PERFORMED WITH OWNER IN FIELD.

PANEL "B"

RATING: 240V/225A
22,000 AIC
SERVICE: 208 Y/120V, 3 PH/S/4-W.

LOCATION: WEB
SCBA Bldg.
MOUNTING: SURFACE

DESCRIPTION	NOTE	AMPS	TRIP AMP	POLE	TYP	CKT NO.	A	B	C	CKT NO.	TYP	POLE	TRIP AMP	NOTE	DESCRIPTION
LTS. - Bulk Stor.			20	1	A	1	0.0			2	A	1	20		LTS. - Bay #7
LTS. - Bay #6			20	1	A	3		0.0		4	A	1	20		LTS. - Exterior
LTS. SPARE			20	1	A	5			0.0	6	A	1	20		LTS. SPARE
LTS. SPARE			20	1	A	7	0.0			8	A	1	20		LTS. SPARE
LTS. SPARE			20	1	A	9		0.0		10	A	1	20		LTS. SPARE
RECP. - Hose Drying			20	1	A	11			0.0	12	A	1	20		RECP. - Hose Drying
RECP. - SCBA			20	1	A	13	0.0			14	A	1	20		RECP. - Bulk Stor.
RECP. - BAY #7			20	1	A	15		0.0		16	A	1	20		RECP. - BAY #6
RECP. - BAY #8			20	1	A	17			0.0	18	A	1	20		DISC. - BAY #8
DISC. - BAY #7			20	1	A	19	0.0			20	A	1	20		RECP. SPARE
RECP. CR - Bay #7			20	1	A	21		0.0		22	A	1	20		RECP. CR - Bay #8
RECP. SPARE			20	1	A	23			0.0	24	A	1	20		Ded.ckt Card Reader
Ded.ckt Card Reader			20	1	A	25	0.0			26	A	1	20	0.0	LH-1 (Bay #8)
REC. - Hose Dryer	Ded.	30.7	50	2	B	27		40.5		28	A	1	20	0.0	LH-2 (Bay #7)
+ Hose Drying Rmg		30.7				29			38.3	30	A	1	20	1.0	LH-3 (Hose Drying Rm)
P-3			20	1	A	31	1.0			32	A	1	20	1.0	FF-1 (BULK STRG.)
FP-2 (Elev#2)	1HP	16.0	30	1	A	33		34.7		34	B	2	35	18.7	FP-3
SPARE			20	1	A	35			18.7	36				18.7	(3HP)
SPARE			20	1	A	37	0.0			38	A	1	20		SPARE
SPARE			20	1	A	39		0.0		40	A	1	20		SPARE
SPARE			20	1	A	41			0.0	42	A	1	20		SPARE
TOTAL CONNECTED LOAD PER PHASE:							19.5	81.2	57.5						
AVG AMPS/PHASE:							45.7								
TOTAL KVA:							17.9 KVA								

NOTES:
1. PANELBOARD SHALL BE CUTLER-HAMMER POW-R-LINE 1a OR EQUAL WBH-225A MCB.
2. PROVIDE CB LOCK.
3. PROVIDE SHUNT TRIP BREAKER
4. UPGRADE WIRE SIZE AS REQUIRED TO MAINTAIN 3% MAXIMUM VOLTAGE DROP.
5. CIRCUIT TYPE A: 120V, 3 WIRE IN CONDUIT OR MC CABLE.
6. CIRCUIT TYPE B: 208V, 4PH, 4 WIRE, IN CONDUIT OR MC CABLE.
7. CIRCUIT TYPE C: 208V, 3PH, 5 WIRE IN CONDUIT.

CR= Card Real

PANEL SCHEDULE (2 / E5)
SCALE: 1/8" = 1'-0"

ELECTRICAL DETAILS (1 / E5)
SCALE: 1/8" = 1'-0"

Project Title:
Addition to
Durham Volunteer Fire Co.
41 Main Street
Durham, Connecticut 06422

SILVER / PETRUCELLI + ASSOCIATES
Architects / Engineers / Interior Designers
3190 Whitney Avenue, Hamden, CT 06518
Tel. 203 230 9007 Fax. 203 230 8247
silverpetrucelli.com

Revision:	Description:	Date:	Revised By:

Drawing Title:
DETAILS & PANEL SCHEDULE

Date: SEPTEMBER 14, 2015
Scale: 1/8" = 1'-0"
Drawn By: MS- ELE. ENG.
SPA Project Number: 15.037

Drawing Number: E5

DURHAM VOLUNTEER FIRE CO

53 CT-17
Durham, Connecticut
Street View - Oct 2013
CT-17

Durham
PUBLIC SAFETY COMMITTEE
Allow Life
to Thrive
Don't Drink
& Drive

53 CT-17
Durham, Connecticut
Street View - Oct 2013
Durham Fire Depa
Durham Dari Serv
Google

Durham Public Safety Complex
TOWN OF DURHAM
DESIGN DEVELOPMENT PHASE
SUMMARY OF PROBABLE CONSTRUCTION COSTS

CATEGORIES	2015	2018 Anticipated Construction)
SITE WORK (includes P+Z approval conditions)	$608,186	$770,879
37 MAIN STREET RENOVATION & EXPANSION (AMBULANCE)	$1,059,340	$1,218,241
41 MAIN STREET EXPANSION (FIREHOUSE)	$1,119,078	$1,286,940
51 MAIN STREET RENOVATION (OFFICES)	$307,598	$353,738
51 MAIN STREET CARRIAGE HOUSE	$266,228	$306,162
OWNER DESIGN CONTINGENCY (15%)	$504,065	$579,674
CONSTRUCTION COST INCLUDES OH/PROFIT	$3,864,495	$4,515,634

OVERALL PROJECT BUDGET

Durham Public Safety Complex
TOWN OF DURHAM
DESIGN DEVELOPMENT PHASE
SUMMARY OF PROBABLE CONSTRUCTION COSTS

Structure & Site Development Cost	$4,515,634
Soft Costs and Owner Contingency (25%)	$1,128,908
Total Project Estimate (Median Cost)	**$5,644,542**

Total Project Cost Range: $5,350,000 - 6,000,000

GENERAL NOTES:
COST ESTIMATES ARE BASED ON 2018 CONSTRUCTION COSTS.
ESCALATE 5% PER YEAR THEREAFTER.
COST ESTIMATES BASED ON HISTORICAL DATA FOR COMPARABLE PROJECTS.

Silver/Petrucelli + Associates, Inc.
Architects/Engineers/Interior Designers
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Durham Public Safety Complex
TOWN OF DURHAM
DESIGN DEVELOPMENT PHASE
OPINION OF PROBABLE CONSTRUCTION COST - 37 MAIN STREET
4,679 SQUARE FEET (not including porches)

SECTION NUMBER	WORK CATEGORIES	UNIT	UNIT COST	AREA	ALLOWANCE	TOTAL $
	DIVISION ONE					
	BONDS, INSURANCES	LS				$3,000
	SAFETY & PROTECTION	SF	$0.30	4,679		$1,404
	CLEANING	SF	$0.40	4,679		$1,872
			DIV 1		$6,275	
	DIVISION TWO					
	DUMPSTERS	EA	$800.00	7		$5,600
	HAZARDOUS MATERIALS REMOVAL	LS			10,000	$10,000
	DEMO EXISTING WOOD SIDING & TRIM	SF	$0.75	2,000		$1,500
	DEMO EXISTING ROOF SHINGLES	SF	$0.60	1,800		$1,080
	DEMO EXISTING TILE FLOORING	SF	$1.15	200		$230
	DEMO EXISTING TILE WALLS & SUBSTRATE	SF	$1.50	250		$375
	DEMO EXISTING TOILET FIXTURES	EA	$100.00	2		$200
	DEMO EXISTING SHOWERS	EA	$125.00	2		$250
	DEMO EXISTING WOOD STUD WALLS	LS			1,200	$1,200
	DEMO EXISTING CABINETS & SHELVING	LS			1,000	$1,000
	DEMO EXISTING DOORS & WINDOWS	EA	$125.00	13		$1,625
	EXCAVATION FOR COLUMN FOOTINGS	EA	$200.00	3		$600
			DIV 2		$23,660	
	DIVISION THREE					
	SLAB CAP/PATCH	SF	$4.50	500		$2,250
	CONCRETE SLABS, ADDITION	SF	$7.00	1,750		$12,250
	CONCRETE FOUNDATIONS, ADDITION	LS			$30,000	$30,000
	CONCRETE FOOTINGS, ADDITION	LS			$15,000	$15,000
			DIV 3		$59,500	
	DIVISION FOUR					
	FOUNDATION REPAIR	LS			$3,200	$3,200
			DIV 4		$3,200	
	DIVISION FIVE					
	STEEL COLUMNS	LS			$1,000	$1,000
			DIV 5		$1,000	
	DIVISION SIX					
	WOOD FRAMING FOR NEW GABLE/ROOF	LS			$20,000	$20,000
	WOOD FRAMING FOR DOORS/WINDOWS	LS			$4,500	$4,500
	WOOD FRAMING FOR NEW WALLS	LS			$10,000	$10,000
	WOOD FRAMING FOR NEW FLOORS	LS			$8,000	$8,000
	WOOD FRAMING FOR NEW FASCIA/SOFFIT	LS			$6,000	$6,000
	WOOD FRAMING, WALL REPAIR	LS			$15,000	$15,000
	WOOD FRAMING, FLOOR SUPPORT	LS			$30,000	$30,000
	WOOD FRAMING, ROOF SUPPORT	LS			$20,000	$20,000
	WOOD FRAMING FOR NEW COLUMNS	LS			$7,500	$7,500
	REBUILT PORCH STRUCTURES	LS			$25,000	$25,000
	NEW REAR PORCH				$15,000	$15,000
	NEW EXTERIOR RAMP				$10,000	
	PLYWOOD SHEATHING - EXTERIOR	SF	$1.25	4,000		$5,000
	PLYWOOD SHEATHING - ROOF	SF	$1.25	3,800		$4,750
	REBUILT WOOD STAIR	LS			$3,500	$3,500
	NEW WOOD STAIR	LS			$4,500	$4,500
	INTRIOR TRIM AND CASINGS	LF	$250.00	15		$3,750
			DIV 6		$182,500	
	DIVISION SEVEN					
	FIBER CEMENT SIDING	SF	$4.00	4,000		$16,000
	AZEK TRIM	SF	$6.75	1,300		$8,775
	AZEK BRACKETS	EA	$75.00	46		$3,450
	FLASHING AT VENT STACKS	EA	$45.00	5		$225
	STANDING SEAM METAL PORCH ROOF	SF	$50.00	225		$11,250
	ASPHALT SHINGLES	SQ	$600.00	39		$23,400
	30LB FELT UNDERLAYMENT	SQ	$20.00	39		$780
	ICE & WATER SHIELD	SQ	$150.00	22		$3,300
	METAL DRIP EDGE	LF	$1.50	425		$638
	COMPOSITE SOFFIT	SF	$3.50	1,000		$3,500
	BATT / RIGID INSULATION	LS			$25,000	$25,000
	SEALANTS	LS			$1,200	$1,200
			DIV 7		$97,518	
	DIVISION EIGHT					
	SINGLE INT. WOOD DOOR AND FRAME	EA	$475.00	27		$12,825
	EXTERIOR FIBERGLASS DOORS AND FRAMES	EA	$675.00	6		$4,050
	DOOR HARDWARE	EA	$225.00	33		$7,425
	EXTERIOR WOOD CLAD WINDOWS	EA	$380.00	43		$16,340
	INSUL. OH DOORS & FRAMES	EA	$18,000.00	4		$72,000
			DIV 8		$112,640	
	DIVISION NINE					
	NEW INTERIOR WALLS	SF	$4.25	3,500		$14,875
	NEW INTERIOR CEILINGS	SF	$4.50	3,400		$15,300
	NEW RESILIENT FLOORING	SF	$4.50	350		$1,575
	NEW HARDWOOD FLOORING	SF	$9.75	2,750		$26,813
	INSTALL NEW TILE SUBSTRATE	SF	$1.95	500		$975
	CERAMIC TILE -WALLS	SF	$10.00	500		$5,000
	CERAMIC TILE - FLOORS	SF	$12.00	400		$4,800
	PAINT INTERIOR WALLS AND CEILINGS	SF	$2.25	10,000		$22,500
	PAINT EXTERIOR TRIM	SF	$3.00	1,300		$3,900
	PAINT EXTERIOR SIDING	SF	$3.00	4,000		$12,000
	PAINT DOORS	EA	$100.00	33		$3,300
			DIV 9		$111,038	

Durham Public Safety Complex
TOWN OF DURHAM
DESIGN DEVELOPMENT PHASE
OPINION OF PROBABLE CONSTRUCTION COST - 37 MAIN STREET

SECTION NUMBER	WORK CATEGORIES	UNIT	UNIT COST	AREA	ALLOWANCE	TOTAL $
	DIVISION TEN					
	EXTERIOR SIGNAGE	LS				$1,500
	FIRE EXTINQUISHERS	EA	$125.00	2		$250
	TOILET PARTITIONS	EA	$2,000.00	2		$4,000
	TOILET PAPER DISPENSER	EA	$50.00	5		$250
	H.C. ACCESS ROOM SIGN	EA	$75.00	5		$375
	H.C. SOAP DISPENSER	EA	$100.00	4		$400
	H.C. PAPER TOWEL DISPENSER	EA	$175.00	4		$700
	H.C. SWING UP BAR	EA	$300.00	2		$600
	H.C. GRAB BAR 42"	EA	$65.00	2		$130
	H.C. GRAB BAR 36"	EA	$50.00	2		$100
	H.C. GRAB BAR 18"	EA	$40.00	2		$80
	H.C. TILT MIRROR	EA	$175.00	4		$700
	WALL & CORNER GUARDS	LS			$800	$800
	LOCKERS	EA	$425.00	12		$5,100
			DIV 10		$14,985	
	DIVISION TWELVE					
	KITCHEN CABINETS & COUNTERS	LF	$375.00	14		$5,250
	WINDOW BLINDS & SHADES	EA	$75.00	43		$3,225
	FURNITURE, FIXTURES AND EQUIPMENT	LS			$0	$0
			DIV 12		$8,475	
	DIVISION FOURTEEN					
	ACCESSIBLE LIFT	LS			$35,000	$35,000
			DIV 14		$35,000	
	DIVISION TWENTY TWO					
	PLUMBING DEMOLITION	LS			$3,000	$3,000
	NEW WATER SUPPLY PIPING; 3/4" RPD	LS			$6,500	$6,500
	NEW SAN/OW/DW DRAIN & VENT PIPING	LS			$14,000	$14,000
	NEW LPG PIPING	LS			$6,500	$6,500
	NEW GW H1&2/VENTS/PUMP/TMV1/EXP TK	LS			$15,000	$15,000
	NEW PLUMBING FIXTURES W/ ROUGH-IN	LS			$28,200	$28,200
	NEW EMERG'Y FIXTURE & TMV2	LS			$2,500	$2,500
	NEW WALL HYDRANTS (3)	LS			$4,500	$4,500
	NEW DRAINAGE ITEMS (FD/TD)	LS			$6,000	$6,000
	NEW SUMP PUMP/BASIN/CONTROLS/PIPING	LS			$750	$750
	NEW RADON MITIGATION SYSTEMS (passive)	LS			$3,500	$3,500
	MISC. CUTTING & PATCHING	LS			$2,500	$2,500
			DIV 22		$92,950	
	DIVISION TWENTY THREE					
	HOT WATER PIPING, CABINET UNIT HEATERS, UNIT HEATER, PANEL RADIATORS AND MISC HYDRONIC SPECIALTIES	LS			$29,500	$29,500
	FIRST FLOOR AND SECOND FLOOR HVAC	LS			$104,000	$104,000
	APPARATUS BAY HEATING AND VENTILATION	LS			$34,000	$34,000
	APPARATUS BAY ENGINE EXHAUST REMOVAL SYSTEM	LS			$27,000	$27,000
	BASEMENT DEHUMIDIFIER WITH COND DRAIN PIPING	LS			$2,300	$2,300
	KITCHEN HOOD EXHAUST (KITCHEN HOOD WITH FAN BY OTHERS)	LS			$1,800	$1,800
			DIV 23		$198,600	
	DIVISION TWENTY SIX					
	ELECTRICAL SYSTEMS					
	ELECTRICAL DEMOLITION	LS			$8,000	$8,000
	POWER MODIFICATIONS	LS			$25,000	$25,000
	LIGHTING MODIFICATIONS	LS			$30,000	$30,000
	FIRE ALARM SYSTEM	LS			$16,000	$16,000
	HVAC CONNECTIONS	LS			$18,000	$18,000
	FEED FROM FD GENERATOR & ATS	LS			$10,000	$10,000
	MISC. (HANGERS, SUPPORTS, BOXES, ETC.)	LS			$5,000	$5,000
			DIV 26		$112,000	

CONSTRUCTION COST INCLUDES OH/PROFIT	**$1,059,340**

OVERALL PROJECT BUDGET

Durham Public Safety Complex
TOWN OF DURHAM
DESIGN DEVELOPMENT PHASE
OPINION OF PROBABLE CONSTRUCTION COST - 37 MAIN STREET

BASE BID COST PER SQUARE FOOT = $226.40

Structure & Site Development Cost

Subtotal Construction Cost	$0
Building Permit	$0
Furniture & Equipment	$0
Printing Costs (Incl. Bidding)	$3,500
A&E fees	???
Agency approval meetings	$1,500
Grant Administration Costs	???
Bonding Costs	$0
Interest on Bond	$0
Contingency (Owner and Const) 10%	$105,934
Total Project Cost Estimate	**$1,170,274**

GENERAL NOTES:
CONSTRUCTION COSTS ARE BASED ON 2015 CONSTRUCTION COSTS.
ESCALATE 5% PER YEAR THEREAFTER.
COST ESTIMATES BASED ON HISTORICAL DATA FOR COMPARABLE PROJECTS.

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Durham Public Safety Complex
TOWN OF DURHAM
DESIGN DEVELOPMENT PHASE
OPINION OF PROBABLE CONSTRUCTION COST - 41 MAIN STREET
2,777 SQUARE FEET

SECTION NUMBER	WORK CATEGORIES	UNIT	UNIT COST	AREA	ALLOWANCE	TOTAL $
	DIVISION ONE					
	BONDS, INSURANCES	LS				$3,000
	SAFETY & PROTECTION	SF	$0.30	2,777		$833
	CLEANING	SF	$0.40	2,777		$1,111
			DIV 1		$4,944	
	DIVISION TWO					
	DUMPSTERS	EA	$800.00	6		$4,800
	HAZARDOUS MATERIALS (excluded)	LS				$0
	DEMO EXISTING OVERHANG & TRIM	SF	$4.75	160		$760
	DEMO EXISTING ROOF SHINGLES	SF	$0.60	2,283		$1,370
	DEMO EXISTING MASONRY WALLS	SF	$6.75	200		$1,350
	DEMO EXISTING TOILET FIXTURES	EA	$100.00	8		$800
	DEMO EXISTING SHOWERS	EA	$125.00	1		$125
	DEMO EXISTING WALLS AT PLUMBING FIXTUR	LS			3,500	$3,500
	DEMO EXISTING DOOR HARDWARE	LS			600	$600
	EXCAVATION FOR ADDITION	LS			17,000	$17,000
			DIV 2		$30,305	
	DIVISION THREE					
	CONCRETE SLABS, ADDITION	SF	$12.00	2,777		$33,324
	CONCRETE FOUNDATIONS, ADDITION	LS			$80,000	$80,000
	CONCRETE FOOTINGS, ADDITION	LS			$50,000	$50,000
			DIV 3		$163,324	
	DIVISION FOUR					
	EXTERIOR CAVITY WALL CONSTRUCTION	SF	$55.00	2,300		$126,500
	INTERIOR MASONRY WALL CONSTRUCTION	SF	$12.00	2,800		$33,600
			DIV 4		$160,100	
	DIVISION FIVE					
	MISC. METALS, LINTELS, ETC.	LS			$20,000	$20,000
			DIV 5		$20,000	
	DIVISION SIX					
	WOOD FRAMING FOR NEW ROOF	LS			$100,000	$100,000
	PLYWOOD SHEATHING - WALLS	SF	$1.25	1,000		$1,250
	PLYWOOD SHEATHING - ROOF	SF	$1.25	4,800		$6,000
	MISC. FRAMING	LS			$20,000	$20,000
	MISC. FINISH CARPENTRY	LS			$10,000	$10,000
			DIV 6		$137,250	
	DIVISION SEVEN					
	FIBER CEMENT SIDING	SF	$4.00	600		$2,400
	AZEK TRIM	SF	$6.75	400		$2,700
	ASPHALT SHINGLES	SQ	$600.00	39		$23,400
	30LB FELT UNDERLAYMENT	SQ	$20.00	29		$580
	ICE & WATER SHIELD	SQ	$150.00	10		$1,500
	METAL DRIP EDGE	LF	$1.50	290		$435
	GUTTERS AND DOWNSPOUTS	LF	$6.25	320		$2,000
	TAPERED INSULATION	SF	$3.25	1,800		$5,850
	COVERBOARD	SF	$2.50	1,800		$4,500
	EPDM MEMBRANE	SF	$4.50	1,800		$8,100
	COMPOSITE VINYL SOFFIT	SF	$3.50	900		$3,150
	BATT / RIGID INSULATION	LS			$20,000	$20,000
	SEALANTS	LS			$3,000	$3,000
			DIV 7		$77,615	
	DIVISION EIGHT					
	HOLLOW METAL DOORS AND FRAMES	EA	$1,300.00	9		$11,700
	DOOR HARDWARE	EA	$250.00	28		$7,000
	ALUMINUM WINDOWS	EA	$750.00	8		$6,000
	INSUL. OH DOORS & FRAMES	EA	$20,000.00	2		$40,000
			DIV 8		$64,700	
	DIVISION NINE					
	GYPSUM BOARD CEILING	SF	$3.25	2,600		$8,450
	PAINT INTERIOR WALLS	SF	$3.00	6,000		$18,000
	PAINT CEILINGS	SF	$3.00	2,600		$7,800
	PAINT EXTERIOR TRIM	SF	$3.00	400		$1,200
	PAINT EXTERIOR SIDING	SF	$3.00	600		$1,800
	PAINT DOORS	EA	$100.00	9		$900
	MISCELLANEOUS FINISHES	LS			$5,000	$5,000
			DIV 9		$43,150	

WORK CATEGORIES	UNIT	UNIT COST	AREA	ALLOWANCE	TOTAL $
DIVISION TEN					
SIGNAGE	LS			$5,000	$5,000
TOILET ROOM UPGRADES	LS			$10,000	$10,000
		DIV 10		$15,000	
DIVISION TWENTY TWO					
ADDITION DRAINS, OW/OWV PIPING	LS			$19,500	$19,500
ADDITION COMPRESSED AIR SYSTEMS	LS			$3,150	$3,150
ADDITION CW SYSTEMS	LS			$5,150	$5,150

Durham

TOWN OF

DESIGN D

OPINION (

BASE BID FIXTURE REPLACEMENT	LS			$13,300	$13,300
ADD ALTERNATE LP TANKS/REGS/EXTERIOR PIPING	LS			$15,000	$15,000
ADD ALTERNATE LP PIPING TO BOILER	LS			$2,000	$2,000
ADD ALTERNATE LP DOMESTIC WATER HEATER AND RELATED LP PIPING	LS			$7,100	$7,100
ADD ALTERNATE ADA SHOWER REPLACEMENT	LS			$2,800	$2,800
		DIV 22		$68,000	

SECTION NUMBER

DIVISION TWENTY THREE					
HEATING:					
INCLUDES PIPING MODIFICATION NEAR EXISTING BOILER , NEW HOT WATER PIPING FEDD TO NEW UNIT HEATERS AND FINNED TUBE RADIATION	LS			$41,740	$41,740
VENTILATION					
EXHAUST FANS , DUCTWORK, CO/NOX SENSOR	LS			$34,250	$34,250
APPARATUS BAY ENGINE EXHAUST REMOVAL SYSTEM- TAILPIPE EXHAUST	LS			$32,200	$32,200
EXISTING APPARATUS BAY CO/NOX SENSORS	LS			$7,200	$7,200
ADD ALTERNATE: NEW TAILPIE EXHAUST SYSTEM FOR EXISTING APPARATUS BAY	LS			$70,000	$70,000
ADD ALTERNATE NEW HIGH EFFICIENCY PROPANE FIRED BOILER COMPLETE WITH NEW FLUR PIPING, COMBUSTION AIR INTAKE AND ALL NEAR BOILER SPECILATIES (AIR SEPARATOR, EXPANSION TANK, GLYCOL TANK)	LS			$37,300	$37,300
		DIV 23		$222,690	

DIVISION TWENTY SIX					
ELECTRICAL SYSTEMS					
ELECTRICAL DEMOLITION	LS			$8,000	$8,000
POWER MODIFICATIONS	LS			$25,000	$25,000
LIGHTING MODIFICATIONS	LS			$30,000	$30,000
FIRE ALARM SYSTEM	LS			$16,000	$16,000
HVAC CONNECTIONS	LS			$18,000	$18,000
FEED FROM FD GENERATOR & ATS	LS			$10,000	$10,000
MISC. (HANGERS, SUPPORTS, BOXES, ETC.)	LS			$5,000	$5,000
		DIV 26		$112,000	

CONSTRUCTION COST INCLUDES OH/PROFIT	**$1,119,078**

OVERALL PROJECT BUDGET

Durham Public Safety Complex

TOWN OF DURHAM

DESIGN DEVELOPMENT PHASE

OPINION OF PROBABLE CONSTRUCTION COST - 41 MAIN STREET

BASE BID COST PER SQUARE FOOT = $402.98

Structure & Site Development Cost

Subtotal Construction Cost	$0
Building Permit	$0
Furniture & Equipment	$0
Printing Costs (Incl. Bidding)	$3,500
A&E fees	???
Agency approval meetings	$1,500
Grant Administration Costs	???
Bonding Costs	$0
Interest on Bond	$0
Contingency (Owner and Const) 10%	$111,908
Total Project Cost Estimate	**$1,235,985**

GENERAL NOTES:
CONSTRUCTION COSTS ARE BASED ON 2015 CONSTRUCTION COSTS.
ESCALATE 5% PER YEAR THEREAFTER.
COST ESTIMATES BASED ON HISTORICAL DATA FOR COMPARABLE PROJECTS.

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Durham Public Safety Complex
TOWN OF DURHAM
DESIGN DEVELOPMENT PHASE
OPINION OF PROBABLE CONSTRUCTION COST - 51 MAIN STREET, CARRIAGE HOUSE
1,600 SQUARE FEET

SECTION NUMBER	WORK CATEGORIES	UNIT	UNIT COST	AREA	ALLOWANCE	TOTAL $
	DIVISION ONE					
	BONDS, INSURANCES	LS				$3,000
	SAFETY & PROTECTION	SF	$0.30	1,600		$480
	CLEANING	SF	$0.40	1,600		$640
			DIV 1		$4,120	
	DIVISION THREE					
	CONCRETE SLAB	LS			$8,000	$8,000
	CONCRETE FOUNDATIONS	LS			$8,000	$8,000
	CONCRETE FOOTINGS	LS			$3,500	$3,500
			DIV 3		$19,500	
	DIVISION SIX					
	WOOD FRAMING FOR EXTERIOR WALLS	LS			$15,000	$15,000
	WOOD FRAMING FOR GABLES/ROOF	LS			$15,000	$15,000
	WOOD FRAMING FOR DOORS & WINDOWS	LS			$10,000	$10,000
	WOOD FRAMING FOR LOFT	LS			$15,000	$15,000
	WOOD FRAMING FOR FASCIA/SOFFIT	LS			$4,000	$4,000
	PLYWOOD SHEATHING - EXTERIOR	SF	$1.25	2,500		$3,125
	PLYWOOD SHEATHING - ROOF	SF	$1.25	2,500		$3,125
	NEW WOOD STAIR	LS			$4,000	$4,000
			DIV 6		$54,250	
	DIVISION SEVEN					
	FIBER CEMENT SIDING	SF	$4.50	2,500		$11,250
	AZEK TRIM	SF	$6.75	350		$2,363
	ASPHALT SHINGLES	SQ	$600.00	23		$13,800
	30LB FELT UNDERLAYMENT	SQ	$20.00	23		$460
	ICE & WATER SHIELD	SQ	$150.00	14		$2,100
	METAL DRIP EDGE	LF	$1.50	250		$375
	COMPOSITE VINYL SOFFIT	SF	$3.50	700		$2,450
	SEALANTS	LS			$1,000	$1,000
			DIV 7		$33,798	
	DIVISION EIGHT					
	SINGLE INT. WOOD DOOR AND FRAME	EA	$475.00	1		$475
	EXTERIOR FIBERGLASS DOORS AND FRA	EA	$675.00	2		$1,350
	DOOR HARDWARE	EA	$225.00	3		$675
	EXTERIOR WOOD CLAD WINDOWS	EA	$380.00	7		$2,660
	INSUL. OH DOORS & FRAMES	EA	$18,000.00	3		$54,000
			DIV 8		$59,160	
	DIVISION NINE					
	NEW INTERIOR WALLS	SF	$4.25	800		$3,400
	PAINT EXTERIOR TRIM	SF	$3.00	350		$1,050
	PAINT EXTERIOR SIDING	SF	$3.00	2,500		$7,500
	PAINT DOORS	EA	$100.00	2		$200
			DIV 9		$12,150	
	DIVISION TEN					
	EXTERIOR SIGNAGE	LS				$1,000
	FIRE EXTINQUISHERS	EA	$125.00	2		$250
			DIV 10		$1,250	
	DIVISION TWENTY TWO					
	PLUMBING SYSTEMS					
	NEW OW DRAIN&VENT, EXT. TANK V. PIPIN	LS			$6,000	$6,000
	NEW LPG PIPING	LS			$1,500	$1,500
	NEW DRAINAGE ITEMS (TD)	LS			$3,000	$3,000
			DIV 22		$10,500	
	DIVISION TWENTY THREE					
	HVAC SYSTEMS					
	APPARATUS BAY HEATING AND VENTILAT	LS			$30,500	$30,500
			DIV 23		$30,500	
	DIVISION TWENTY SIX					
	ELECTRICAL SYSTEMS					
	FIRE ALARM SYSTEM	LS			$2,000	$2,000
	POWER MODIFICATIONS	LS			$10,000	$10,000
	LIGHTING REPLACEMENT	LS			$10,000	$10,000
	HVAC CONNECTIONS	LS			$1,500	$1,500
	MISC. (HANGERS, SUPPORTS, BOXES, ETC	LS			$2,500	$2,500
			DIV 26		$26,000	

CONSTRUCTION COST	**$266,228**
INCLUDES OH/PROFIT	

OVERALL PROJECT BUDGET

Durham Public Safety Complex

TOWN OF DURHAM

DESIGN DEVELOPMENT PHASE

OPINION OF PROBABLE CONSTRUCTION COST - 51 MAIN STREET, CARRIAGE HOUSE

BASE BID COST PER SQUARE FOOT =	$166.39
Structure & Site Development Cost	
Subtotal Construction Cost	$0
Building Permit	$0
Furniture & Equipment	$0
Printing Costs (Incl. Bidding)	$3,500
A&E fees	???
Agency approval meetings	$1,500
Grant Administration Costs	???
Bonding Costs	$0
Interest on Bond	$0
Contingency (Owner and Const) 10%	$26,623
Total Project Cost Estimate	**$297,850**

GENERAL NOTES:

CONSTRUCTION COSTS ARE BASED ON 2015 CONSTRUCTION COSTS.
ESCALATE 5% PER YEAR THEREAFTER.
COST ESTIMATES BASED ON HISTORICAL DATA FOR COMPARABLE PROJECTS.

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Durham Public Safety Complex
TOWN OF DURHAM
DESIGN DEVELOPMENT PHASE
OPINION OF PROBABLE CONSTRUCTION COST - 51 MAIN STREET
1,050 SQUARE FEET

SECTION NUMBER	WORK CATEGORIES	UNIT	UNIT COST	AREA	ALLOWANCE	TOTAL $
	DIVISION ONE					
	BONDS, INSURANCES	LS				$3,000
	SAFETY & PROTECTION	SF	$0.30	1,050		$315
	CLEANING	SF	$0.40	1,050		$420
			DIV 1		$3,735	
	DIVISION TWO					
	DUMPSTERS	EA	$800.00	6		$4,800
	HAZARDOUS MATERIALS ABATEMENT	LS			10,000	$10,000
	DEMO EXISTING WOOD SIDING	SF	$0.55	1,900		$1,045
	DEMO EXISTING ROOF SHINGLES	SF	$0.60	800		$480
	DEMO EXISTING TILE FLOORING	SF	$1.15	180		$207
	DEMO EXISTING TILE WALLS & BACKING	SF	$2.00	200		$400
	DEMO EXISTING TOILET FIXTURES	EA	$100.00	2		$200
	DEMO EXISTING SHOWERS	EA	$125.00	2		$250
	DEMO EXISTING WOOD STUD WALLS	LS			1,000	$1,000
	DEMO EXISTING DOORS & WINDOWS	EA	$125.00	25		$3,125
	DEMO COUNTERS, SHELVES ETC					
	EXCAVATION FOR COLUMN FOOTINGS	EA	$250.00	2		$500
			DIV 2		$22,007	
	DIVISION THREE					
	SLAB CAP	SF	$3.75	525		$1,969
	CONCRETE FOUNDATIONS, PATCH	LS			$5,000	$5,000
	CONCRETE FOOTINGS, PATCH	LS			$5,000	$5,000
			DIV 3		$11,969	
	DIVISION FOUR					
	PATCH EXISTING FOUNDATION	LS			$1,000	$1,000
			DIV 4		$1,000	
	DIVISION FIVE					
	STEEL COLUMNS	LS			$500	$500
			DIV 5		$500	
	DIVISION SIX					
	WOOD FRAMING, WALL REPAIR	LS			$10,000	$10,000
	WOOD FRAMING, FLOOR SUPPORT	LS			$30,000	$30,000
	WOOD FRAMING, ROOF SUPPORT	LS			$15,000	$15,000
	REBUILT PORCH STRUCTURE	LS			$16,000	$16,000
	NEW EXTERIOR RAMP	LS			$10,000	$10,000
	PLYWOOD SHEATHING REPAIR	SF	$1.25	2,000		$2,500
	PLYWOOD SHEATHING - ROOF	SF	$1.25	1,200		$1,500
	NEW WOOD STAIR				$3,500	$3,500
			DIV 6		$88,500	
	DIVISION SEVEN					
	FIBER CEMENT SIDING	SF	$4.00	1,900		$7,600
	AZEK TRIM	SF	$6.75	1,100		$7,425
	AZEK BRACKETS	EA	$75.00	16		$1,200
	FLASHING AT VENT STACKS	EA	$45.00	3		$135
	STANDING SEAM METAL PORCH ROOF	SF	$50.00	200		$10,000
	ASPHALT SHINGLES	SQ	$600.00	9		$5,400
	30LB FELT UNDERLAYMENT	SQ	$20.00	9		$180
	ICE & WATER SHIELD	SQ	$150.00	6		$900
	METAL DRIP EDGE	LF	$1.50	250		$375
	COMPOSITE VINYL SOFFIT	SF	$3.50	750		$2,625
	BATT / RIGID INSULATION	LS			$6,500	$6,500
	SEALANTS	LS			$1,000	$1,000
			DIV 7		$43,340	
	DIVISION EIGHT					
	SINGLE INT. WOOD DOOR AND FRAME	EA	$475.00	1		$475
	EXTERIOR FIBERGLASS DOORS AND FRA	EA	$675.00	2		$1,350
	DOOR HARDWARE	EA	$225.00	3		$675
	EXTERIOR WOOD CLAD WINDOWS	EA	$380.00	22		$8,360
			DIV 8		$10,860	
	DIVISION NINE					
	NEW INTERIOR WALLS	SF	$4.25	1,750		$7,438
	PAINT EXTERIOR TRIM	SF	$3.00	1,100		$3,300
	PAINT EXTERIOR SIDING	SF	$3.00	1,900		$5,700
	PAINT DOORS	EA	$100.00	3		$300
			DIV 9		$16,738	

Durham Public Safety Complex
TOWN OF DURHAM
DESIGN DEVELOPMENT PHASE
OPINION OF PROBABLE CONSTRUCTION COST - 51 MAIN STREET

DIVISION TEN					
FIRE EXTINQUISHERS	EA	$125.00	2		$250
		DIV 10		$250	
DIVISION TWENTY TWO					
PLUMBING SYSTEMS					
PLUMBING DEMOLITION	LS			$2,400	$2,400
(2) NEW TOILET ROOMS	LS			$15,000	$15,000
NEW SUMP PUMP/BASIN/CONTROLS/PIPIN	LS			$750	$750
NEW RADON MITIGATION SYSTEMS (passiv	LS			$2,000	$2,000
MISC. CUTTING & PATCHING	LS			$1,500	$1,500
		DIV 22		$21,650	
DIVISION TWENTY THREE					
HVAC SYSTEMS					
DEMOLITION	LS			$4,000	$4,000
ELECTRIC BASEBOARD HEATING	LS			$13,150	$13,150
VENTILATION	LS			$3,750	$3,750
BASEMENT DEHUMIDIFIER WITH COND DRAIN PIPING	LS			$2,300	$2,300
BATHROOM HEATER AND EXHAUST	LS			$1,850	$1,850
		DIV 23		$25,050	
DIVISION TWENTY SIX					
ELECTRICAL SYSTEMS					
ELECTRICAL DEMOLITION	LS			$8,000	$8,000
POWER MODIFICATIONS	LS			$15,000	$15,000
LIGHTING REPLACEMENT	LS			$8,000	$8,000
FIRE ALARM SYSTEM	LS			$8,000	$8,000
HVAC CONNECTIONS	LS			$6,000	$6,000
FEED FROM FD GENERATOR & ATS	LS			$14,000	$14,000
MISC. (HANGERS, SUPPORTS, BOXES, ETC	LS			$3,000	$3,000
		DIV 26		$62,000	

CONSTRUCTION COST INCLUDES OH/PROFIT	**$307,598**

OVERALL PROJECT BUDGET

Durham Public Safety Complex
TOWN OF DURHAM
DESIGN DEVELOPMENT PHASE
OPINION OF PROBABLE CONSTRUCTION COST - 51 MAIN STREET

BASE BID COST PER SQUARE FOOT = $292.95

Structure & Site Development Cost

Subtotal Construction Cost	$0
Building Permit	$0
Furniture & Equipment	$0
Printing Costs (Incl. Bidding)	$3,500
A&E fees	???
Agency approval meetings	$1,500
Grant Administration Costs	???
Bonding Costs	$0
Interest on Bond	$0
Contingency (Owner and Const) 10%	$30,760
Total Project Cost Estimate	**$343,358**

GENERAL NOTES:
CONSTRUCTION COSTS ARE BASED ON 2015 CONSTRUCTION COSTS.
ESCALATE 5% PER YEAR THEREAFTER.
COST ESTIMATES BASED ON HISTORICAL DATA FOR COMPARABLE PROJECTS.
NO ENVIRONMENTAL ABATEMENT OR REMEDIATION PRESUMED ON EXISTING SITE (EXTERIOR)

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DURHAM EMERGENCY SERVICES 37, 41 & 51 MAIN STREET

LAND USE APPROVAL ESTIMATE - March 15, 2017

OPINION OF ESTIMATED CONSTRUCTION COST

SECTION NUMBER	WORK CATEGORIES	UNIT	UNIT COST	#37 MAIN ST QTY.	#37 MAIN ST TOTAL $	#41 MAIN ST QTY.	#41 MAIN ST TOTAL $	#51 MAIN ST QTY.	#51 MAIN ST TOTAL $
	SITE PREPARATION								
	CLEARING AND GRUBBING	Ac.	$5,000	0.2	$1,000	0	$0	0.5	$2,500
	REMOVE BIT. CONC. PAVEMENT	S.Y.	$4	500	$2,000	300	$1,200	700	$2,800
	SAW CUT BIT. CONCRETE	L.F.	$3.50	260	$910	625	$2,188	100	$350
	GENERAL SITE DEMO	L.S.	$2,500	1	$2,500	1	$2,500	1	$2,500
	REMOVE STORM OR SAN PIPE	L.F.	$2	0	$0	0	$0	0	$0
	EROSION CONTROL (Silt Fence) 12 MONTHS	L.F.	$5	350	$1,750	50	$250	600	$3,000
	HAYBALES	L.F.	$5	100	$500	10	$50	320	$1,600
	ANTITRACK DEVICE 12 MONTHS	Each	$1,500	1	$1,500	1	$1,500	1	$1,500
	ABANDON WELL	L.S.	$2,500	1	$2,500	$0	$0	1	$2,500
	GENERAL EXCAVATION								
	STRIP AND STOCKPILE TOPSOIL	C.Y.	$10	200	$2,000	25	$250	350	$3,500
	CUT	C.Y.	$12	100	$1,200	25	$300	0	$0
	FILL (ON-SITE MATERIALS)	C.Y.	$5	0	$0	0	$0	0	$0
	BORROW	C.Y.	$35	0	$0	0	$0	1000	$35,000
	EXPORT SURPLUS TOPSOIL & UNSUITABLES	S.Y.	$5	325	$1,625	50	$250	600	$3,000
	ROCK EXCAVATION	C.Y.	$100	0	$0	0	$0	0	$0
	STORM SEWER								
	CATCH BASIN	Each	$1,500	1	$1,500	1	$1,500	0	$0
	YARD DRAIN	Each	$1,000	0	$0	0	$0	2	$2,000
	TRENCH EXCAVATION	L.F.	$20	100	$2,000	100	$2,000	100	$2,000
	OUTLET STRUCTURE	Each	$2,500	1	$2,500	0	$0	0	$0
	4" PVC STORM (R.L. CONNECT)	L.F.	$25	150	$3,750	100	$2,500	0	$0
	12" HDPP STORM	L.F.	$45	65	$2,925	30	$1,350	0	$0
	U/G STORMWATER MANAGEMENT	L.S.	$20,000	1	$20,000	0	$0	0	$0
	8" DIP	L.F.	$45	0	$0		$0	85	$3,825
	SANITARY SEWER								
	OIL-WATER SEPARATOR TANK W/ 2 CI MH	Each	$8,000	1	$8,000	1	$8,000	1	$8,000
	1,000 GAL O-W HOLDING TANK W/ 1 CI MH	Each	$7,500	1	$7,500	1	$7,500	1	$7,500
	1,000 GAL SEPTIC TANK	each	$4,500	1	$4,500	$0	$0	1	$4,500
	4" PVC SAN SEWER	L.F.	$35	25	$875	$0	$0	30	$1,050
	1000 GAL D/W DECON TANK	Each	$25,000	1	$25,000	0	$0	0	$0
	4" PVC D/W SAN SEWER	L.F.	$50	50	$2,500	0	$0	0	$0
	1000 GAL PUMP CHAMBER AND DUPLEX PUMP	Each	$15,000					1	$15,000
	2" POLY FORCE MAIN	L.F.	$20					460	$9,200
	12' HD LEACHING GALLIES	L.F.	$125					40	$5,000
	SELECT GRAVEL SEPTIC FILL	CY	$40					100	$4,000
	SUB-BASE								
	GRAVEL BASE (12")	C.Y.	$35	350	$12,250	50	$1,750	850	$29,750
	FORMATION OF SUBGRADE	S.Y.	$3	825	$2,063	125	$313	2000	$5,000
	PAVING								
	BIT. CONC. PAVEMENT -NEW 1.5"+1.5"	Ton	$110	0	$0	25	$2,750	250	$27,500
	BIT. CONC. PAVEMENT -NEW 2"+2"	Ton	$110	200	$22,000	40	$4,400	600	$66,000
	CEMENT CONC. SIDEWALK	S.F.	$8	900	$7,200	100	$800	375	$3,000
	SIDEWALK RAMPS	S.F.	$10	75	$750		$0	75	$750
	DETECTABLE WARNING	S.F.	$8	54	$432	0	$0	115	$920
	CEMENT CONC. CURB	L.F.	$30	0	$0	0	$0	0	$0
	CEMENT CONC. CURB _ INTEGRAL WITH SW	L.F.	$25	80	$2,000	0	$0	45	$1,125
	BITUMINOUS CURB	L.F.	$4	200	$800	0	$0	325	$1,300
	EQUIPMENT SLABS	S.F.	$15	100	$1,500	480	$7,200	0	$0
	STATE HIGHWAY PATCHING	LS	$7,500	1	7,500	0	0	1	7,500
	PATCHING EXISTING PARKING LOT	SF	$4			1,700	$6,800		
	LANDSCAPING								
	TOPSOIL	S.Y.	$6	500	$3,000	0	$0	765	$4,590
	RAKE, LIME FERTILIZE, SEED & MULCH	S.Y.	$2	500	$1,125	0	$0	765	$1,721
	LANDSCAPE PLANT MATERIALS (ALLOWANCE)	Lump Sum	$5,000	1	$5,000.00	1	$5,000	1	$5,000
	WATER QUALITY BASIN PLANT MTLS (ALLOW.)	Lump Sum	$5,000	0	$0.00	0	$0	1	$5,000

UTLITIES								
1" DOMESTIC WATER SERVICE	LF	$45	100	$4,500	$0	$0	70	$3,150
ELEC./TELE/CATV - 4 - 4" PVC CONDUITS	LF	$40	75	$3,000	0	$0	0	$0
RELOCATE EXIST UTILITY POLE	Lump Sum	$7,500	1	$7,500	0	$0	0	$0
ELEC CONDUITS TO GENERATOR	LF	$35	50	$1,750	225	$7,875	280	$9,800
TRENCH AND BEDDING FOR PROPANE SRVC	LF	$20	50	$1,000	250	$5,000	300	$6,000
MISCELLANEOUS								
TRAFFIC CONTROL	Man Day	$500	3	$1,500	1	$500	1	$500
WOOD GUIDE RAIL	LF	$40	0	$0	0	$0	160	$6,400
MODULAR RETAINING WALL	S.F.	$45	0	$0	0	$0	1200	$54,000
DUMPSTER ENCLOSURE WITH GATES	Lump Sum	$10,000	0	$0		$0		$0
CONSTRUCTION STAKING	Lump Sum	$2,500	1	$2,500	1	$2,500	1	$3,000
SIGNS	Each	$250	4	$1,000	4	$1,000	4	$1,000
PVMT MARKINGS	Lump Sum	$1,000	0	$0	2	$2,000	1	$1,000
BOLLARDS	Each	$750	0	0	21	$15,750	0	$0
AS-BUILT	Lump Sum	$2,500	1	$2,500	1	$2,500	1	$3,000
LANDSCAPE BUFFER AND FENCE	Lump Sum	$45,000	1	$45,000				
SUBTOTAL				$234,405		$97,475		$367,331
MINOR ITEMS (5%)	Lump Sum		1	$11,720		$4,874		$18,367
subtotal				$246,125		$102,349		$385,698
GRAND TOTAL (ALL 3 SITES)	**$734,171**							
2018 escalation (5%)	$770,879							

A: Traffic

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:

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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.

Our method for this study is the following: Industry standard statistical data published by the Institute of Transportation Engineers (ITE)[1] was reviewed. The general office land use was determined to be a reasonably representative land use. It was assumed that a total of ten trips during both the weekday morning and afternoon peak hours would be generated. This relates to about 20 employees. This is considered conservative based on current staffing levels. Table 3 summarizes the site traffic.

Table 3
NEW SITE TRAFFIC

	NUMBER OF VEHICLE TRIPS		
	ENTER	EXIT	TOTAL
Weekday Morning Peak Hour	9	1	10
Weekday Afternoon Peak Hour	2	8	10

Source: Trip Generation, Institute of Transportation Engineers (ITE), Eighth Edition, 2008. Land Use #710, General Office

The estimated traffic seen in Table 3, which covers the amount associated with the relocated departments and offices, as well as additional new traffic that may be generated by any new employees, was routed through the entire study area as though it will all be new. This is a conservative measure, as the relocated traffic component already travels through both ends of the study area (Route 17 at Route 68 and Route 17 at Route 79). The directional distribution for the estimated site traffic was based on the existing peak hour travel flows on Route 17 at nearby intersections. Figure 4 illustrates the estimated new site traffic volumes along the study area.

Future Traffic

Future roadway traffic estimates were developed without and with the site traffic volumes, background and combined, respectively. This is in order to assess the impact of the proposed development.

Background (no-build) traffic is reflective of roadway conditions prior to the proposed development. Review of ConnDOT traffic monitoring data from over about the last decade along nearby roadways finds that daily volumes in most areas peaked around 2004 and then slightly declined by 2007. Annual growth on the whole between 1998 and 2007 was around 0.5%. As such, the existing traffic volumes that were counted at the study intersections were

[1] *Trip Generation*, Institute of Transportation Engineers, Eighth Edition, 2008.

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.

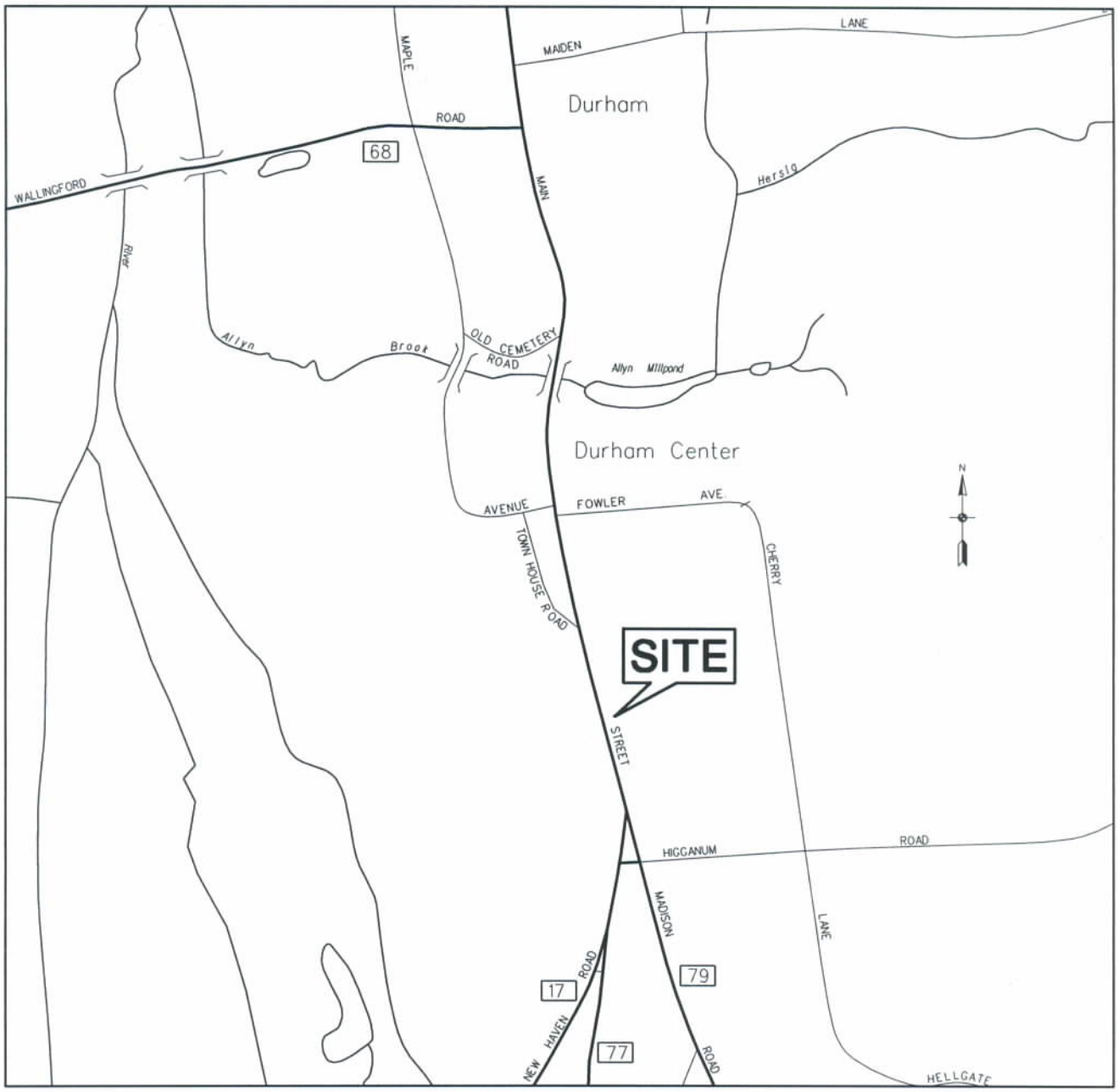
It is important that appropriate signage be installed in connection with the proposed development. This includes STOP signs, as well as stop-bars, at each driveway egress location. Appropriately placed DO NOT ENTER signs should be installed to help regulate the proposed one-way circulation around the 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



SCALE

1000 0 1000 FEET

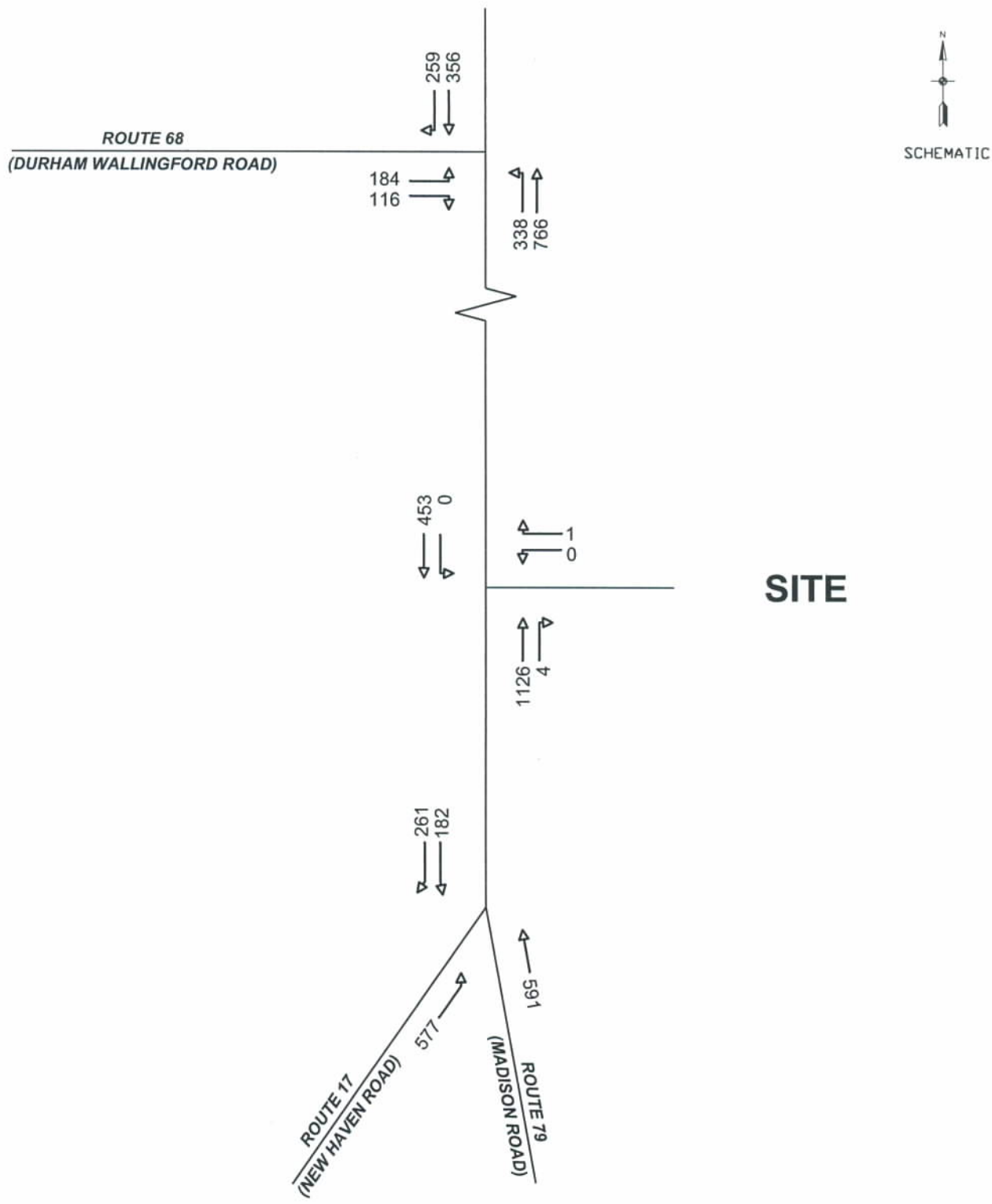
SITE LOCATION

Durham Emergency Services Complex
Durham, Connecticut

G:\sdskproj\3373-04\Schematics\Site Location.dwg, SITE-LOCATION, 3/18/2010 9:25:27 AM, nancya

MILONE & MACBROOM, Inc.

FIGURE 1



2009 EXISTING TRAFFIC VOLUMES

WEEKDAY MORNING PEAK HOUR

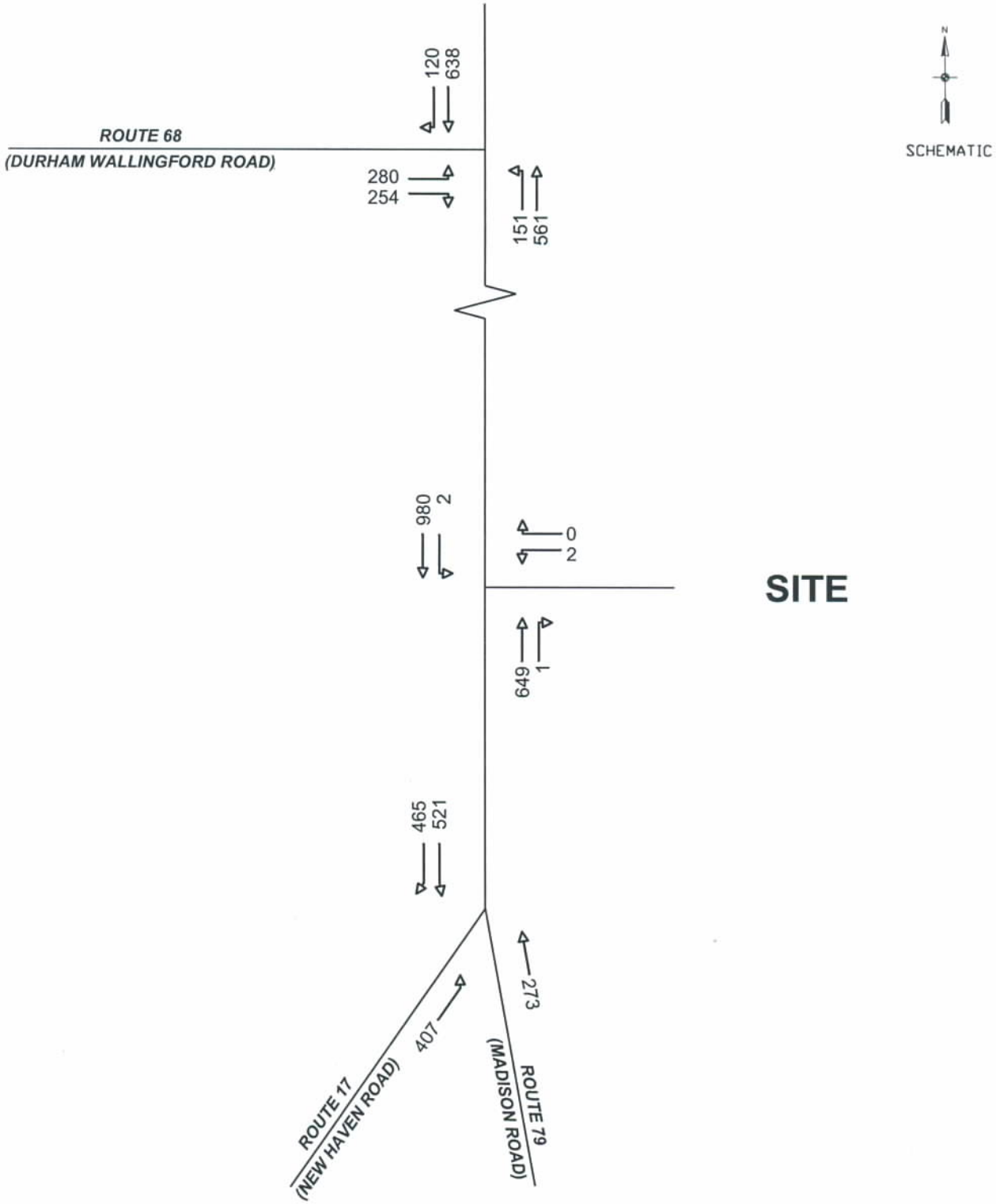
7:00 - 8:00 AM

Durham Emergency Services Complex
Durham, Connecticut

MILONE & MACBROOM, Inc.

FIGURE 2

G:\sdskproj\3373-04\Schematics\VOLUMES.dwg, 2, 3/18/2010 3:18:01 PM, nancya



2009 EXISTING TRAFFIC VOLUMES

WEEKDAY AFTERNOON PEAK HOUR

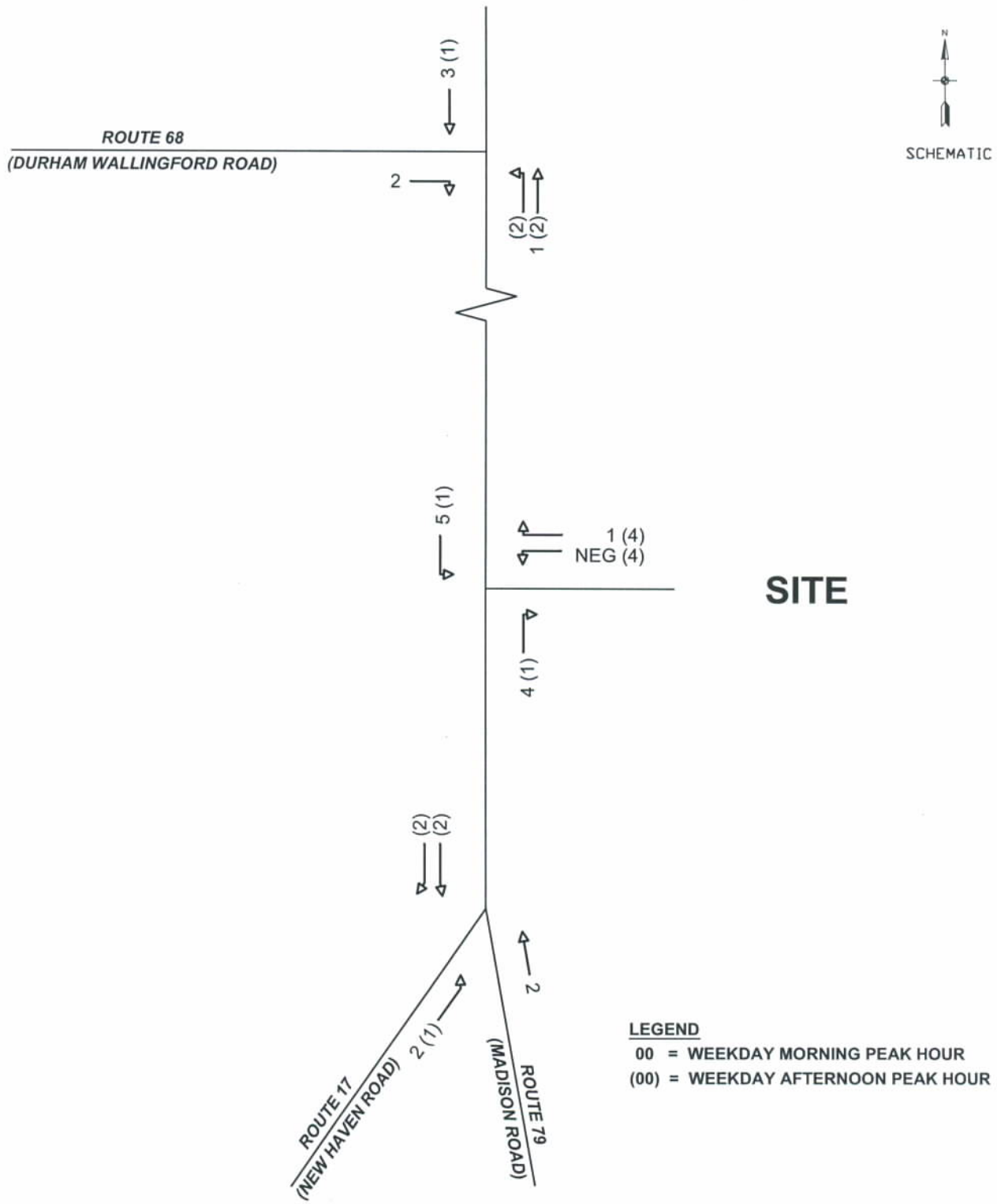
5:00 - 6:00 AM

Durham Emergency Services Complex
Durham, Connecticut

MILONE & MACBROOM, Inc.

FIGURE 3

G:\sdskproj\3373-04\Schematics\VOLUMES.dwg, 3, 3/18/2010 3:18:05 PM, nancya



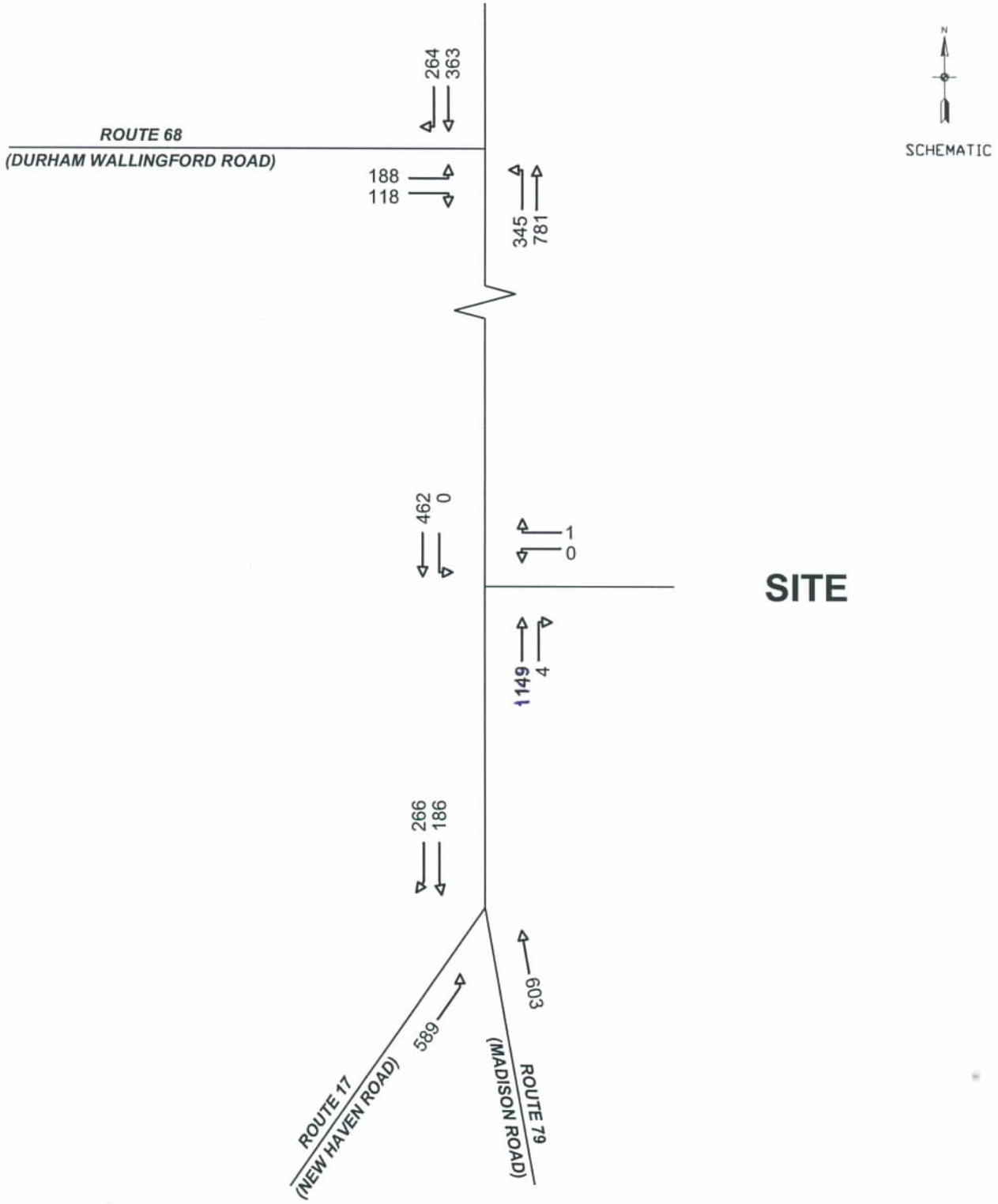
NEW SITE TRAFFIC VOLUMES

Durham Emergency Services Complex
Durham, Connecticut

MILONE & MACBROOM, Inc.

FIGURE 4

G:\sdskproj\3373-04\Schematics\VOLUMES.dwg, 4, 3/18/2010 3:21:59 PM, nancya



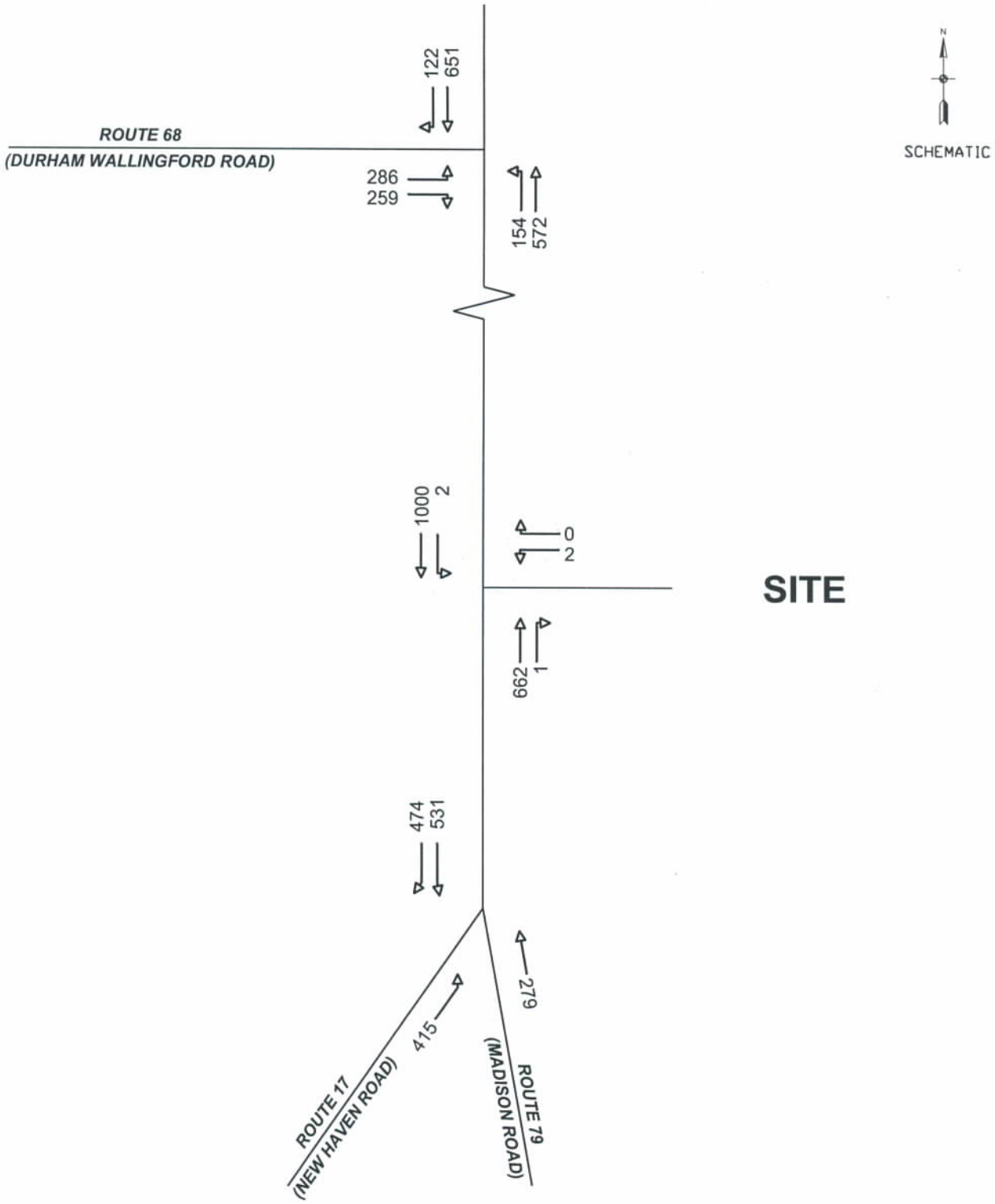
2013 BACKGROUND TRAFFIC VOLUMES
WEEKDAY MORNING PEAK HOUR

Durham Emergency Services Complex
Durham, Connecticut

MILONE & MACBROOM, Inc.

FIGURE 5

G:\sdskproj\3373-04\Schematics\VOLUMES.dwg, 5, 3/18/2010 3:18:39 PM, nancya



2013 BACKGROUND TRAFFIC VOLUMES
WEEKDAY AFTERNOON PEAK HOUR

Durham Emergency Services Complex
Durham, Connecticut

MILONE & MACBROOM, Inc.

FIGURE 6

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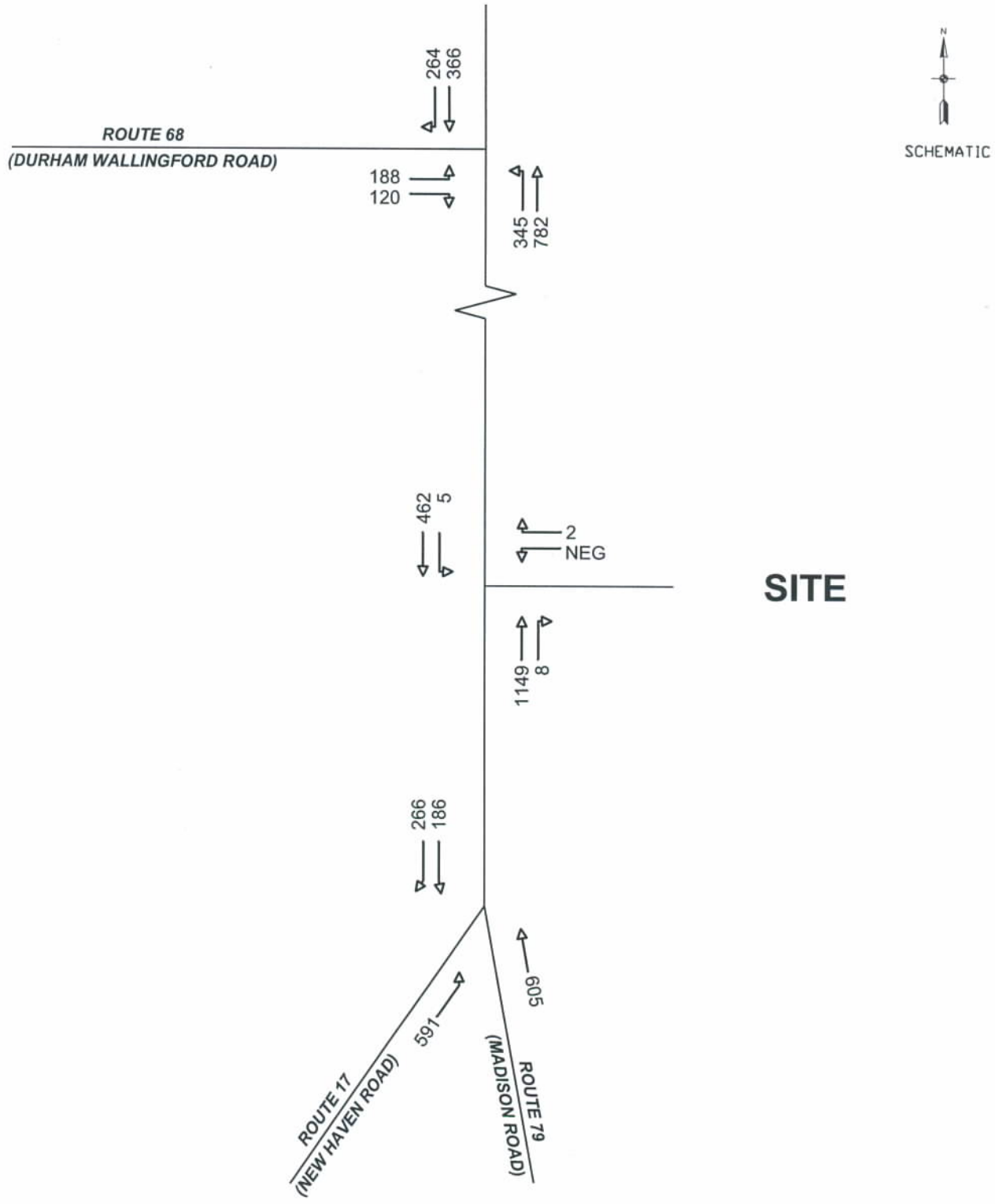


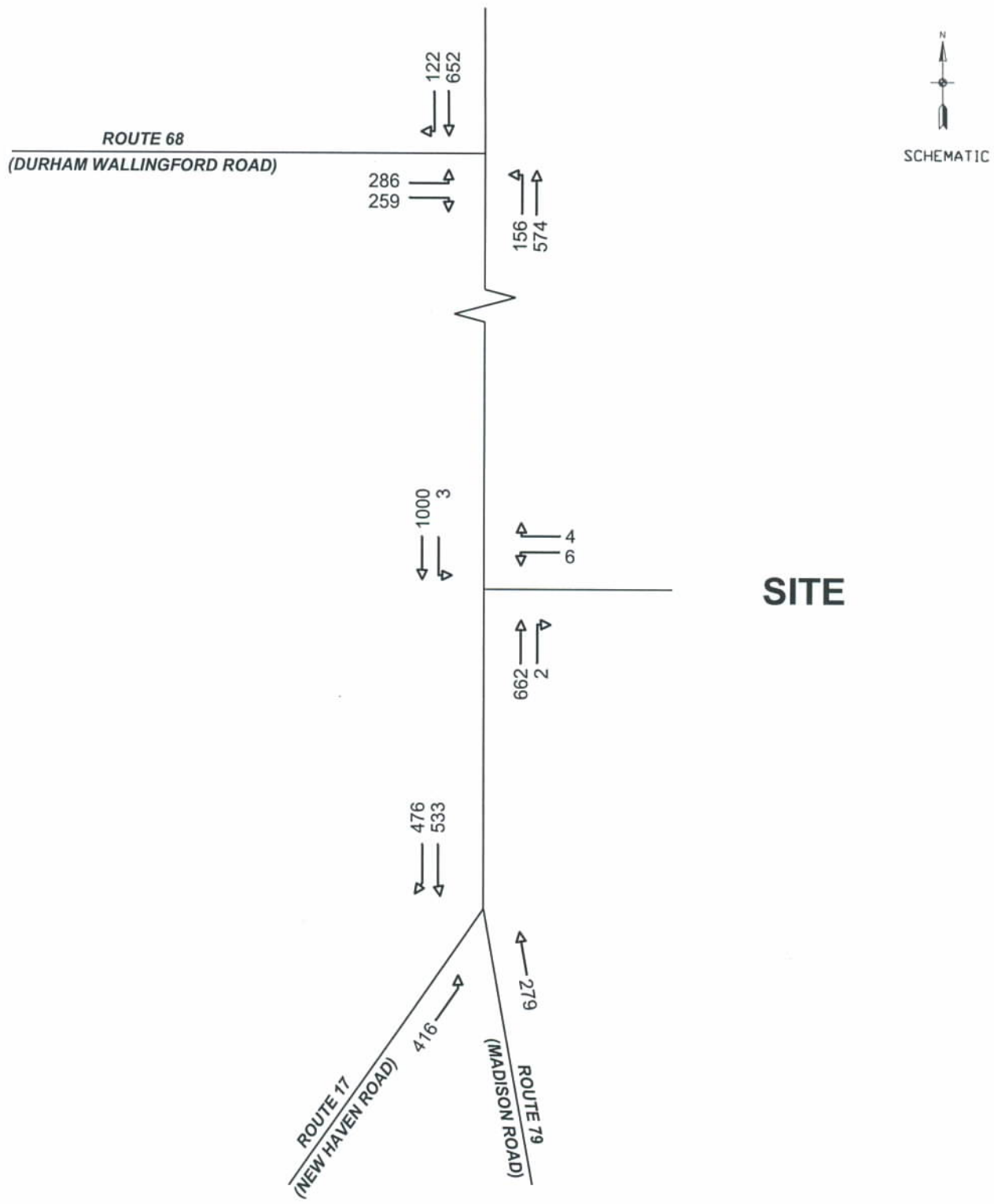
2013 COMBINED TRAFFIC VOLUMES
WEEKDAY MORNING PEAK HOUR

Durham Emergency Services Complex
Durham, Connecticut

MILONE & MACBROOM, Inc.

FIGURE 7

G:\sdskproj\3373-04\Schematics\VOLUMES.dwg, 7, 3/18/2010 3:18:46 PM, nancya



2013 COMBINED TRAFFIC VOLUMES
WEEKDAY AFTERNOON PEAK HOUR

Durham Emergency Services Complex
Durham, Connecticut

MILONE & MACBROOM, Inc.

FIGURE 8

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APPENDIX

LEVEL OF SERVICE

FOR

SIGNALIZED INTERSECTIONS

Level of service for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions: in the absence of traffic control, geometric delay, any incidents, and any other vehicles. Specifically, LOS criteria for traffic signals are stated in terms of the average control delay per vehicle, typically for a 15-min analysis period. Delay is a complex measure and depends on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group. The criteria are given below.

LEVEL-OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS	
LEVEL OF SERVICE	**AVERAGE CONTROL DELAY (sec/veh)**
A	≤ 10
B	> 10 AND ≤ 20
C	> 20 AND ≤ 35
D	> 35 AND ≤ 55
E	> 55 AND ≤ 80
F	> 80

Specific descriptions of each LOS for signalized intersections are provided below:

Level of Service A describes operations with very low control delay, up to 10 s/veh. This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.

Level of Service B describes operations with delay greater than 10 and up to 20 s/veh. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.

Level of Service C describes operations with control delay greater than 20 and up to 35 s/veh. These higher delays may result from only fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.

Level of Service D describes operations with control delay greater than 35 and up to 55 s/veh. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

Level of Service E describes operations with control delay greater than 55 and up to 80 s/veh. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.

Level of Service F describes operations with control delay in excess of 80 s/veh. This level, considered to be unacceptable to most drivers, often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.

Reference: Highway Capacity Manual 2000, Transportation Research Board, 2000.

LEVEL OF SERVICE

FOR TWO-WAY

STOP SIGN CONTROLLED INTERSECTIONS

The level of service for a TWSC (two-way stop controlled) intersection is determined by the computed or measured control delay and is defined for each minor movement. Level of service is not defined for the intersection as a whole. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. LOS criteria are given in the Table. LOS criteria are given below:

LEVEL-OF SERVICE CRITERIA FOR TWSC INTERSECTIONS	
LEVEL OF SERVICE	**AVERAGE CONTROL DELAY (s/veh)**
A	**≤ 10**
B	**> 10 AND ≤ 15**
C	**> 15 AND ≤ 25**
D	**> 25 AND ≤ 35**
E	**> 35 AND ≤ 50**
F	**> 50**

Reference: Highway Capacity Manual 2000, Transportation Research Board, 2000.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3
Lane Configurations							
Volume (vph)	188	118	345	781	363	264	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	10	12	12	12	
Storage Length (ft)	0	0	150			0	
Storage Lanes	1	0	1			0	
Taper Length (ft)	25	25	25			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	0.948				0.943		
Flt Protected	0.970		0.950				
Satd. Flow (prot)	1713	0	1652	1863	1757	0	
Flt Permitted	0.970		0.137				
Satd. Flow (perm)	1713	0	238	1863	1757	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)	26				37		
Link Speed (mph)	30			30	30		
Link Distance (ft)	523			3606	386		
Travel Time (s)	11.9			82.0	8.8		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Adj. Flow (vph)	209	131	383	868	403	293	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	340	0	383	868	696	0	
Turn Type			D.P+P				
Protected Phases	4		1	1 2	2		3
Permitted Phases			2				
Detector Phase	4		1 2	2	2		
Switch Phase							
Minimum Initial (s)	6.0		5.0		20.0		1.0
Minimum Split (s)	11.5		8.0		26.0		17.0
Total Split (s)	30.5	0.0	18.0	64.0	46.0	0.0	17.0
Total Split (%)	27.4%	0.0%	16.1%	57.4%	41.3%	0.0%	15%
Maximum Green (s)	25.0		15.0		40.0		15.0
Yellow Time (s)	4.0		3.0		4.0		2.0
All-Red Time (s)	1.5		0.0		2.0		0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	4.0	3.0	3.0	6.0	4.0	
Lead/Lag	Lag		Lead		Lag		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		1.5		4.0		3.0
Recall Mode	None		None		Min		None
Walk Time (s)							7.0
Flash Dont Walk (s)							10.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	21.9		58.1	61.1	40.0		
Actuated g/C Ratio	0.24		0.63	0.67	0.44		
v/c Ratio	0.79		1.00	0.70	0.88		
Control Delay	44.2		69.4	14.0	37.8		
Queue Delay	0.0		0.0	0.0	0.0		
Total Delay	44.2		69.4	14.0	37.8		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3
LOS	D		E	B	D		
Approach Delay	44.2			30.9	37.8		
Approach LOS	D			C	D		
Queue Length 50th (ft)	171		~165	299	357		
Queue Length 95th (ft)	#274		#359	461	#599		
Internal Link Dist (ft)	443			3526	306		
Turn Bay Length (ft)			150				
Base Capacity (vph)	487		383	1244	790		
Starvation Cap Reductn	0		0	0	0		
Spillback Cap Reductn	0		0	0	0		
Storage Cap Reductn	0		0	0	0		
Reduced v/c Ratio	0.70		1.00	0.70	0.88		

Intersection Summary

Area Type: Other
Cycle Length: 111.5
Actuated Cycle Length: 91.5
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 35.0 Intersection LOS: D
Intersection Capacity Utilization 84.9% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 204: Route 68 (Wallingford Road) & Route 17 (Main Street)

ø1	ø2	ø3	ø4
18 s	46 s	17 s	30.5 s

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3
Lane Configurations							
Volume (vph)	188	120	345	782	366	264	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	10	12	12	12	
Storage Length (ft)	0	0	150			0	
Storage Lanes	1	0	1			0	
Taper Length (ft)	25	25	25			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	0.948				0.943		
Flt Protected	0.970		0.950				
Satd. Flow (prot)	1713	0	1652	1863	1757	0	
Flt Permitted	0.970		0.133				
Satd. Flow (perm)	1713	0	231	1863	1757	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)	26				36		
Link Speed (mph)	30			30	30		
Link Distance (ft)	523			3606	386		
Travel Time (s)	11.9			82.0	8.8		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Adj. Flow (vph)	209	133	383	869	407	293	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	342	0	383	869	700	0	
Turn Type			D.P+P				
Protected Phases	4		1	1 2	2		3
Permitted Phases			2				
Detector Phase	4		1 2	2	2		
Switch Phase							
Minimum Initial (s)	6.0		5.0		20.0		1.0
Minimum Split (s)	11.5		8.0		26.0		17.0
Total Split (s)	30.5	0.0	18.0	64.0	46.0	0.0	17.0
Total Split (%)	27.4%	0.0%	16.1%	57.4%	41.3%	0.0%	15%
Maximum Green (s)	25.0		15.0		40.0		15.0
Yellow Time (s)	4.0		3.0		4.0		2.0
All-Red Time (s)	1.5		0.0		2.0		0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	4.0	3.0	3.0	6.0	4.0	
Lead/Lag	Lag		Lead		Lag		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		1.5		4.0		3.0
Recall Mode	None		None		Min		None
Walk Time (s)							7.0
Flash Dont Walk (s)							10.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	22.0		58.1	61.1	40.0		
Actuated g/C Ratio	0.24		0.63	0.67	0.44		
v/c Ratio	0.79		1.01	0.70	0.89		
Control Delay	44.4		72.7	14.1	38.7		
Queue Delay	0.0		0.0	0.0	0.0		
Total Delay	44.4		72.7	14.1	38.7		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3
LOS	D		E	B	D		
Approach Delay	44.4			32.0	38.7		
Approach LOS	D			C	D		
Queue Length 50th (ft)	173		~177	301	363		
Queue Length 95th (ft)	#279		#363	462	#605		
Internal Link Dist (ft)	443			3526	306		
Turn Bay Length (ft)			150				
Base Capacity (vph)	487		379	1242	788		
Starvation Cap Reductn	0		0	0	0		
Spillback Cap Reductn	0		0	0	0		
Storage Cap Reductn	0		0	0	0		
Reduced v/c Ratio	0.70		1.01	0.70	0.89		

Intersection Summary

Area Type: Other
Cycle Length: 111.5
Actuated Cycle Length: 91.6
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 35.9 Intersection LOS: D
Intersection Capacity Utilization 85.2% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 204: Route 68 (Wallingford Road) & Route 17 (Main Street)

ø1	ø2	ø3	ø4
18 s	46 s	17 s	30.5 s

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR	ø3
Lane Configurations							
Volume (vph)	589	0	186	266	0	603	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	14	14	10	11	14	14	
Storage Length (ft)		0	270		0	0	
Storage Lanes		0	1		0	1	
Taper Length (ft)		25	25		25	25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt						0.865	
Flt Protected			0.950				
Satd. Flow (prot)	1987	0	1652	1801	0	1719	
Flt Permitted			0.950				
Satd. Flow (perm)	1987	0	1652	1801	0	1719	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)						414	
Link Speed (mph)	30			30	30		
Link Distance (ft)	387			753	381		
Travel Time (s)	8.8			17.1	8.7		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Adj. Flow (vph)	654	0	207	296	0	670	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	654	0	207	296	0	670	
Turn Type			Split			Over	
Protected Phases	4		2	2		2	3
Permitted Phases							
Detector Phase	4		2	2		2	
Switch Phase							
Minimum Initial (s)	9.0		15.0	15.0		15.0	1.0
Minimum Split (s)	25.7		26.9	26.9		26.9	20.0
Total Split (s)	40.7	0.0	51.9	51.9	0.0	51.9	20.0
Total Split (%)	36.1%	0.0%	46.1%	46.1%	0.0%	46.1%	18%
Maximum Green (s)	35.0		45.0	45.0		45.0	18.0
Yellow Time (s)	3.6		4.5	4.5		4.5	2.0
All-Red Time (s)	2.1		2.4	2.4		2.4	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	4.0	6.9	6.9	4.0	6.9	
Lead/Lag	Lag						Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		5.0	5.0		5.0	3.0
Recall Mode	None		Min	Min		Min	None
Walk Time (s)							7.0
Flash Dont Walk (s)							13.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	35.4		23.0	23.0		23.0	
Actuated g/C Ratio	0.50		0.32	0.32		0.32	
v/c Ratio	0.66		0.39	0.51		0.80	
Control Delay	20.4		19.9	21.8		15.5	
Queue Delay	0.0		0.0	0.0		0.0	
Total Delay	20.4		19.9	21.8		15.5	

201: Route 17 (New Haven Road) & Route 79 (Madison Road)

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR	ø3
LOS	C		B	C		B	
Approach Delay	20.4			21.0			
Approach LOS	C			C			
Queue Length 50th (ft)	184		69	102		93	
Queue Length 95th (ft)	#517		116	162		213	
Internal Link Dist (ft)	307			673	301		
Turn Bay Length (ft)			270				
Base Capacity (vph)	994		1063	1159		1253	
Starvation Cap Reductn	0		0	0		0	
Spillback Cap Reductn	0		0	0		0	
Storage Cap Reductn	0		0	0		0	
Reduced v/c Ratio	0.66		0.19	0.26		0.53	

Intersection Summary

Area Type: Other
Cycle Length: 112.6
Actuated Cycle Length: 71.2
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 18.8 — Intersection LOS: B
Intersection Capacity Utilization 78.8% — ICU Level of Service D
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 201: Route 17 (New Haven Road) & Route 79 (Madison Road)

ø2	ø3	ø4
51.9 s	20 s	40.7 s

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR	ø3
Lane Configurations							
Volume (vph)	591	0	186	266	0	605	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	14	14	10	11	14	14	
Storage Length (ft)		0	270		0	0	
Storage Lanes		0	1		0	1	
Taper Length (ft)		25	25		25	25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt						0.865	
Flt Protected			0.950				
Satd. Flow (prot)	1987	0	1652	1801	0	1719	
Flt Permitted			0.950				
Satd. Flow (perm)	1987	0	1652	1801	0	1719	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)						413	
Link Speed (mph)	30			30	30		
Link Distance (ft)	387			753	381		
Travel Time (s)	8.8			17.1	8.7		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Adj. Flow (vph)	657	0	207	296	0	672	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	657	0	207	296	0	672	
Turn Type			Split			Over	
Protected Phases	4		2	2		2	3
Permitted Phases							
Detector Phase	4		2	2		2	
Switch Phase							
Minimum Initial (s)	9.0		15.0	15.0		15.0	1.0
Minimum Split (s)	25.7		26.9	26.9		26.9	20.0
Total Split (s)	40.7	0.0	51.9	51.9	0.0	51.9	20.0
Total Split (%)	36.1%	0.0%	46.1%	46.1%	0.0%	46.1%	18%
Maximum Green (s)	35.0		45.0	45.0		45.0	18.0
Yellow Time (s)	3.6		4.5	4.5		4.5	2.0
All-Red Time (s)	2.1		2.4	2.4		2.4	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	4.0	6.9	6.9	4.0	6.9	
Lead/Lag	Lag						Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		5.0	5.0		5.0	3.0
Recall Mode	None		Min	Min		Min	None
Walk Time (s)							7.0
Flash Dont Walk (s)							13.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	35.5		23.1	23.1		23.1	
Actuated g/C Ratio	0.50		0.32	0.32		0.32	
v/c Ratio	0.66		0.39	0.51		0.80	
Control Delay	20.5		19.9	21.9		15.7	
Queue Delay	0.0		0.0	0.0		0.0	
Total Delay	20.5		19.9	21.9		15.7	

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR	ø3
LOS	C		B	C		B	
Approach Delay	20.5			21.0			
Approach LOS	C			C			
Queue Length 50th (ft)	186		69	102		95	
Queue Length 95th (ft)	#522		116	162		215	
Internal Link Dist (ft)	307			673	301		
Turn Bay Length (ft)			270				
Base Capacity (vph)	991		1059	1155		1250	
Starvation Cap Reductn	0		0	0		0	
Spillback Cap Reductn	0		0	0		0	
Storage Cap Reductn	0		0	0		0	
Reduced v/c Ratio	0.66		0.20	0.26		0.54	

Intersection Summary

Area Type: Other
Cycle Length: 112.6
Actuated Cycle Length: 71.5
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 18.9 Intersection LOS: B
Intersection Capacity Utilization 79.1% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 201: Route 17 (New Haven Road) & Route 79 (Madison Road)

ø2	ø3	ø4
51.9 s	20 s	40.7 s

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	1	1149	4	0	462
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	1	1277	4	0	513
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			753			
pX, platoon unblocked	0.72	0.72			0.72	
vC, conflicting volume	1792	1279			1281	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1908	1191			1194	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	54	163			418	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	1	1281	513
Volume Left	0	0	0
Volume Right	1	4	0
cSH	163	1700	418
Volume to Capacity	0.01	0.75	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	27.2	0.0	0.0
Lane LOS	D		
Approach Delay (s)	27.2	0.0	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	2	1149	8	5	462
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	2	1277	9	6	513
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			753			
pX, platoon unblocked	0.71	0.71			0.71	
vC, conflicting volume	1806	1281			1286	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1928	1193			1199	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			99	
cM capacity (veh/h)	51	162			415	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	2	1286	519
Volume Left	0	0	6
Volume Right	2	9	0
cSH	162	1700	415
Volume to Capacity	0.01	0.76	0.01
Queue Length 95th (ft)	1	0	1
Control Delay (s)	27.5	0.0	0.4
Lane LOS	D		A
Approach Delay (s)	27.5	0.0	0.4
Approach LOS	D		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3
Lane Configurations							
Volume (vph)	286	259	154	572	651	122	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	10	12	12	12	
Storage Length (ft)	0	0	150			0	
Storage Lanes	1	0	1			0	
Taper Length (ft)	25	25	25			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	0.936				0.979		
Flt Protected	0.974		0.950				
Satd. Flow (prot)	1698	0	1652	1863	1824	0	
Flt Permitted	0.974		0.100				
Satd. Flow (perm)	1698	0	174	1863	1824	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)	38				9		
Link Speed (mph)	30			30	30		
Link Distance (ft)	523			3606	386		
Travel Time (s)	11.9			82.0	8.8		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Adj. Flow (vph)	318	288	171	636	723	136	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	606	0	171	636	859	0	
Turn Type			D.P+P				
Protected Phases	4		1	1 2	2		3
Permitted Phases			2				
Detector Phase	4		1 2	2	2		
Switch Phase							
Minimum Initial (s)	6.0		5.0		20.0		1.0
Minimum Split (s)	11.5		8.0		26.0		17.0
Total Split (s)	30.5	0.0	18.0	64.0	46.0	0.0	17.0
Total Split (%)	27.4%	0.0%	16.1%	57.4%	41.3%	0.0%	15%
Maximum Green (s)	25.0		15.0		40.0		15.0
Yellow Time (s)	4.0		3.0		4.0		2.0
All-Red Time (s)	1.5		0.0		2.0		0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	4.0	3.0	3.0	6.0	4.0	
Lead/Lag	Lag		Lead		Lag		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		1.5		4.0		3.0
Recall Mode	None		None		Min		None
Walk Time (s)							7.0
Flash Dont Walk (s)							10.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	25.0		52.3	55.4	40.1		
Actuated g/C Ratio	0.28		0.59	0.62	0.45		
v/c Ratio	1.20		0.67	0.55	1.04		
Control Delay	136.9		26.9	11.7	68.1		
Queue Delay	0.0		0.0	0.0	0.0		
Total Delay	136.9		26.9	11.7	68.1		

204: Route 68 (Wallingford Road) & Route 17 (Main Street)

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3
LOS	F		C	B	E		
Approach Delay	136.9			14.9	68.1		
Approach LOS	F			B	E		
Queue Length 50th (ft)	~397		39	184	~515		
Queue Length 95th (ft)	#654		105	271	#817		
Internal Link Dist (ft)	443			3526	306		
Turn Bay Length (ft)			150				
Base Capacity (vph)	505		357	1160	827		
Starvation Cap Reductn	0		0	0	0		
Spillback Cap Reductn	0		0	0	0		
Storage Cap Reductn	0		0	0	0		
Reduced v/c Ratio	1.20		0.48	0.55	1.04		

Intersection Summary

Area Type: Other
Cycle Length: 111.5
Actuated Cycle Length: 88.9
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.20
Intersection Signal Delay: 67.6 — Intersection LOS: E
Intersection Capacity Utilization 94.8% — ICU Level of Service F
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 204: Route 68 (Wallingford Road) & Route 17 (Main Street)

ø1	ø2	ø3	ø4
18 s	46 s	17 s	30.5 s

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3
Lane Configurations							
Volume (vph)	286	259	156	574	652	122	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	10	12	12	12	
Storage Length (ft)	0	0	150			0	
Storage Lanes	1	0	1			0	
Taper Length (ft)	25	25	25			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	0.936				0.979		
Flt Protected	0.974		0.950				
Satd. Flow (prot)	1698	0	1652	1863	1824	0	
Flt Permitted	0.974		0.100				
Satd. Flow (perm)	1698	0	174	1863	1824	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)	38				9		
Link Speed (mph)	30			30	30		
Link Distance (ft)	523			3606	386		
Travel Time (s)	11.9			82.0	8.8		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Adj. Flow (vph)	318	288	173	638	724	136	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	606	0	173	638	860	0	
Turn Type			D.P+P				
Protected Phases	4		1	1 2	2		3
Permitted Phases			2				
Detector Phase	4		1 2	2	2		
Switch Phase							
Minimum Initial (s)	6.0		5.0		20.0		1.0
Minimum Split (s)	11.5		8.0		26.0		17.0
Total Split (s)	30.5	0.0	18.0	64.0	46.0	0.0	17.0
Total Split (%)	27.4%	0.0%	16.1%	57.4%	41.3%	0.0%	15%
Maximum Green (s)	25.0		15.0		40.0		15.0
Yellow Time (s)	4.0		3.0		4.0		2.0
All-Red Time (s)	1.5		0.0		2.0		0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	4.0	3.0	3.0	6.0	4.0	
Lead/Lag	Lag		Lead		Lag		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		1.5		4.0		3.0
Recall Mode	None		None		Min		None
Walk Time (s)							7.0
Flash Dont Walk (s)							10.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	25.0		52.4	55.4	40.1		
Actuated g/C Ratio	0.28		0.59	0.62	0.45		
v/c Ratio	1.20		0.67	0.55	1.04		
Control Delay	137.0		27.2	11.7	68.8		
Queue Delay	0.0		0.0	0.0	0.0		
Total Delay	137.0		27.2	11.7	68.8		

204: Route 68 (Wallingford Road) & Route 17 (Main Street)

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	ø3
LOS	F		C	B	E		
Approach Delay	137.0			15.0	68.8		
Approach LOS	F			B	E		
Queue Length 50th (ft)	~398		40	185	~517		
Queue Length 95th (ft)	#655		107	272	#821		
Internal Link Dist (ft)	443			3526	306		
Turn Bay Length (ft)			150				
Base Capacity (vph)	505		357	1160	826		
Starvation Cap Reductn	0		0	0	0		
Spillback Cap Reductn	0		0	0	0		
Storage Cap Reductn	0		0	0	0		
Reduced v/c Ratio	1.20		0.48	0.55	1.04		

Intersection Summary

Area Type: Other
Cycle Length: 111.5
Actuated Cycle Length: 89
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.20
Intersection Signal Delay: 67.8 — Intersection LOS: E
Intersection Capacity Utilization 95.0% — ICU Level of Service F
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 204: Route 68 (Wallingford Road) & Route 17 (Main Street)

ø1	ø2	ø3	ø4
18 s	46 s	17 s	30.5 s

201: Route 17 (New Haven Road) & Route 79 (Madison Road)

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR	ø3
Lane Configurations							
Volume (vph)	415	0	531	474	0	279	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	14	14	10	11	14	14	
Storage Length (ft)		0	270		0	0	
Storage Lanes		0	1		0	1	
Taper Length (ft)		25	25		25	25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt						0.865	
Flt Protected			0.950				
Satd. Flow (prot)	1987	0	1652	1801	0	1719	
Flt Permitted			0.950				
Satd. Flow (perm)	1987	0	1652	1801	0	1719	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)						473	
Link Speed (mph)	30			30	30		
Link Distance (ft)	387			753	381		
Travel Time (s)	8.8			17.1	8.7		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Adj. Flow (vph)	461	0	590	527	0	310	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	461	0	590	527	0	310	
Turn Type			Split			Over	
Protected Phases	4		2	2		2	3
Permitted Phases							
Detector Phase	4		2	2		2	
Switch Phase							
Minimum Initial (s)	9.0		15.0	15.0		15.0	1.0
Minimum Split (s)	25.7		26.9	26.9		26.9	20.0
Total Split (s)	40.7	0.0	51.9	51.9	0.0	51.9	20.0
Total Split (%)	36.1%	0.0%	46.1%	46.1%	0.0%	46.1%	18%
Maximum Green (s)	35.0		45.0	45.0		45.0	18.0
Yellow Time (s)	3.6		4.5	4.5		4.5	2.0
All-Red Time (s)	2.1		2.4	2.4		2.4	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	4.0	6.9	6.9	4.0	6.9	
Lead/Lag	Lag						Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		5.0	5.0		5.0	3.0
Recall Mode	None		Min	Min		Min	None
Walk Time (s)							7.0
Flash Dont Walk (s)							13.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	23.6		36.5	36.5		36.5	
Actuated g/C Ratio	0.32		0.50	0.50		0.50	
v/c Ratio	0.72		0.72	0.59		0.28	
Control Delay	30.4		20.9	16.8		0.7	
Queue Delay	0.0		0.0	0.0		0.0	
Total Delay	30.4		20.9	16.8		0.7	

201: Route 17 (New Haven Road) & Route 79 (Madison Road)

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR	ø3
LOS	C		C	B		A	
Approach Delay	30.4			19.0			
Approach LOS	C			B			
Queue Length 50th (ft)	199		194	158		0	
Queue Length 95th (ft)	320		383	306		0	
Internal Link Dist (ft)	307			673	301		
Turn Bay Length (ft)			270				
Base Capacity (vph)	997		1066	1162		1277	
Starvation Cap Reductn	0		0	0		0	
Spillback Cap Reductn	0		0	0		0	
Storage Cap Reductn	0		0	0		0	
Reduced v/c Ratio	0.46		0.55	0.45		0.24	

Intersection Summary

Area Type: Other
Cycle Length: 112.6
Actuated Cycle Length: 73.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 18.8 — Intersection LOS: B
Intersection Capacity Utilization 61.8% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 201: Route 17 (New Haven Road) & Route 79 (Madison Road)

ø2	ø3	ø4
51.9 s	20 s	40.7 s

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR	ø3
Lane Configurations							
Volume (vph)	416	0	533	476	0	279	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	14	14	10	11	14	14	
Storage Length (ft)		0	270		0	0	
Storage Lanes		0	1		0	1	
Taper Length (ft)		25	25		25	25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt						0.865	
Flt Protected			0.950				
Satd. Flow (prot)	1987	0	1652	1801	0	1719	
Flt Permitted			0.950				
Satd. Flow (perm)	1987	0	1652	1801	0	1719	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)						473	
Link Speed (mph)	30			30	30		
Link Distance (ft)	387			753	381		
Travel Time (s)	8.8			17.1	8.7		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Adj. Flow (vph)	462	0	592	529	0	310	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	462	0	592	529	0	310	
Turn Type			Split			Over	
Protected Phases	4		2	2		2	3
Permitted Phases							
Detector Phase	4		2	2		2	
Switch Phase							
Minimum Initial (s)	9.0		15.0	15.0		15.0	1.0
Minimum Split (s)	25.7		26.9	26.9		26.9	20.0
Total Split (s)	40.7	0.0	51.9	51.9	0.0	51.9	20.0
Total Split (%)	36.1%	0.0%	46.1%	46.1%	0.0%	46.1%	18%
Maximum Green (s)	35.0		45.0	45.0		45.0	18.0
Yellow Time (s)	3.6		4.5	4.5		4.5	2.0
All-Red Time (s)	2.1		2.4	2.4		2.4	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	4.0	6.9	6.9	4.0	6.9	
Lead/Lag	Lag						Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		5.0	5.0		5.0	3.0
Recall Mode	None		Min	Min		Min	None
Walk Time (s)							7.0
Flash Dont Walk (s)							13.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	23.7		36.7	36.7		36.7	
Actuated g/C Ratio	0.32		0.50	0.50		0.50	
v/c Ratio	0.72		0.72	0.59		0.28	
Control Delay	30.5		21.0	16.9		0.6	
Queue Delay	0.0		0.0	0.0		0.0	
Total Delay	30.5		21.0	16.9		0.6	

201: Route 17 (New Haven Road) & Route 79 (Madison Road)

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR	ø3
LOS	C		C	B		A	
Approach Delay	30.5			19.1			
Approach LOS	C			B			
Queue Length 50th (ft)	201		196	159		0	
Queue Length 95th (ft)	321		387	308		0	
Internal Link Dist (ft)	307			673	301		
Turn Bay Length (ft)			270				
Base Capacity (vph)	993		1061	1157		1274	
Starvation Cap Reductn	0		0	0		0	
Spillback Cap Reductn	0		0	0		0	
Storage Cap Reductn	0		0	0		0	
Reduced v/c Ratio	0.47		0.56	0.46		0.24	

Intersection Summary

Area Type: Other
Cycle Length: 112.6
Actuated Cycle Length: 73.6
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 18.8 — Intersection LOS: B
Intersection Capacity Utilization 61.9% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 201: Route 17 (New Haven Road) & Route 79 (Madison Road)

ø2	ø3	ø4
51.9 s	20 s	40.7 s

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	2	0	662	1	2	1000
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	0	736	1	2	1111
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			753			
pX, platoon unblocked	0.79	0.79			0.79	
vC, conflicting volume	1852	736			737	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1945	533			534	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	100			100	
cM capacity (veh/h)	56	432			817	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	2	737	1113
Volume Left	2	0	2
Volume Right	0	1	0
cSH	56	1700	817
Volume to Capacity	0.04	0.43	0.00
Queue Length 95th (ft)	3	0	0
Control Delay (s)	71.8	0.0	0.1
Lane LOS	F		A
Approach Delay (s)	71.8	0.0	0.1
Approach LOS	F		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	6	4	662	2	3	1000
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	7	4	736	2	3	1111
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			753			
pX, platoon unblocked	0.79	0.79			0.79	
vC, conflicting volume	1854	737			738	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1949	533			534	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	99			100	
cM capacity (veh/h)	56	432			816	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	11	738	1114
Volume Left	7	0	3
Volume Right	4	2	0
cSH	85	1700	816
Volume to Capacity	0.13	0.43	0.00
Queue Length 95th (ft)	11	0	0
Control Delay (s)	53.3	0.0	0.1
Lane LOS	F		A
Approach Delay (s)	53.3	0.0	0.1
Approach LOS	F		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		

B: Health Department

Donald W. Smith, Jr., P.E.
CONSULTING ENGINEER
56 Greenwood Circle
Seymour, Connecticut 06483
(203) 888-4904
Fax: (203) 881-3434
Email: dwsjrpe@sbcglobal.net

CIVIL ENGINEERING **CONSTRUCTION INSPECTION**
SEPTIC DESIGN **SITE DEVELOPMENT**

MEMORANDUM

TO: Mr. David Stein, A.I.A.

FROM: Donald W. Smith, Jr., P.E.
Consulting Engineer

DATE: June 21, 2012

RE: Durham Emergency Services Facility
Ground Water Monitoring Results

This office has conducted a monitoring program of groundwater levels in the area of the proposed septic system on the above referenced property.

The Town Public Works crew installed the proposed curtain drain during the last week of December, 2011. Groundwater monitoring pipes were installed on 12/29/2011 and baseline GW readings obtained. Periodic (generally every 2 weeks) readings of the GW elevations were taken to determine the effectiveness of the curtain drain on lowering the GW table.

The results of our GW readings are presented on the attached table. As indicated by the color coding, The GW levels in monitoring pipes 5 & 6 are well below the state required minimum of 18” below the ground surface and are unsuitable. The GW level in monitoring pipe # 7 is also below the 18” but very close to it. The GW levels recorded in monitoring pipes 1 & 2 are satisfactory. The allowable and unsuitable leaching areas are identified on the attached drawing.

Based on the above, we have the following opinions as it relates to the leaching area capacity of the site:

1. There is suitable area on the site to develop a “repaired” septic system for the current building.

2. A “Code Conforming” leaching area, with a design flow of 656 gallons per day, can be developed on a portion of the property. Therefore, any expanded building would be limited to a design flow of 656 gpd which would eliminate the possibility of having a large meeting room and commercial kitchen.

We trust this information allows the Town and the Building Committee to make an informed decision on this matter.

Please feel free to contact me with any questions you may have regarding this matter.

CC: L. Francis, First Selectman
D Heer, Bldg. Comm. Chair
W. Milardo, RS Sanitarian
B. Curtis, P.E. Town Engineer

DURHAM PUBLIC SAFETY FACILITY
GROUNDWATER MONITORING DATA

DATE	M.P. 1	M.P. 2	M.P. 3 *	M.P. 4 *	M.P. 5	M.P. 6	M.P. 7	* M.P. #3 & #4 are located up gradient of the curtain drain
	Soil Depth = 26"	Soil Depth = 25"	Soil Depth = 25"	Soil Depth = 26"	Soil Depth = 26"	Soil Depth = 25"	Soil Depth = 25"	
	Pipe AboveGrade = 13"	Pipe Above = 14"	Pipe Above = 14"	Pipe Above = 13"	Pipe Above = 14"	Pipe Above = 14"	Pipe Above = 14"	
	Water Depth in Pipe / Water Below Grade	Water Depth in Pipe / Water Below Grade	Water Depth in Pipe / Water Below Grade	Water Depth in Pipe / Water Below Grade	Water Depth in Pipe / Water Below Grade	Water Depth in Pipe / Water Below Grade	Water Depth in Pipe / Water Below Grade	
12/29/2011	39" / 26"	None / >25"	38" / 24"	31" / 18"	37-1/4" / 23-1/4"	37" / 23"	39" / 25"	
1/10/2012	Dry	28" / 14"	35-1/2" / 21-1/2"	22-1/4" / 9-1/4"	25-3/4" / 11-3/4"	23-3/4" / 9-3/4"	35-1/4" / 21-1/4"	
1/29/2012	26" / 13"	25" / 11"	33-1/2" / 19-1/2"	18" / 5"	21" / 7"	18" / 4"	23" / 9"	6" snow on 1/21, then warm and 0.5" rain on 1/27
2/9/2012	Dry	38-1/2" / 24-1/2"	Dry	32-3/4" / 19-3/4"	35-1/2" / 21-1/2"	26-1/2" / 12-1/2"	38-1/2" / 24-1/2"	Slight trickle at CD discharge, no water at High end
2/26/2012	Dry	32" / 18"	37" / 23"	26-1/2" / 13-1/2"	26' / 12"	18" / 4"	26-1/2" / 12-1/2"	4 - 6" snow on 2/24, no snow remaining in grass areas
								Standing water @ surface between MP 5 & 7 and
								adjacent to MP 6. Low flow at CD discharge
3/8/2012	Dry	35" / 21"	Dry	28-1/2" / 15-1/2"	32" / 18"	23-1/4" / 9-1/4"	34-1/2" / 20-1/2"	Last Rain on 3/3, Cold temps on 3/5&6,
								Slight discharge at CD outlet
3/23/2012	Dry	Dry	Dry	Dry	Dry	36-1/2" / 22-1/2"	Dry	Light showers 3/13 & 3/16, Slight trickle at CD discharge
4/5/2012	Dry	Dry	Dry	Dry	Dry	36-1/4" / 22-1/4"	Dry	Light showers 3/31 & 4/1
4/24/2012	31-1/4" / 18-1/4"	29-1/2" / 15-1/2"	30-1/2" / 16-1/2"	22-1/2" / 9-1/2"	29-1/2" - 15-1/2"	20-1/2" / 6-1/2"	38" / 24"	2.6" rain on 4/22-23 *
4/26/2012	38" / 25"	33-3/4" /19-3/4"	36" / 22"	27-3/4" / 14-3/4	34-1/2" / 20-1/2"	27"/ 13"	Dry	
5/12/2012	36-1/2" / 23-1/2"	33-3/4" / 19-3/4"	35-1/4" / 21-1/4"	30" / 17"	31-1/4" / 17-1/4"	29" / 15"	37-1/4" / 23-1/4"	0.7" Rain on 5/8 thru 5/10 *
6/2/2012 (6 PM)	33" / 20"	22" / 8"	25-1/2" / 11-1/2"	26" / 13"	19" / 5"	16-1/2" / 2-1/2"	28" / 14"	0.64" rain 5/25 thru 6/1, 2.1" Rain on 6/2 AM *
6/5/2012 (6 PM)	34-1/4" / 21-1/4"	32" / 18"	36" / 22"	36-3/4" / 23-3/4"	27" /13"	24" / 10"	30-3/4" / 16-3/4"	No rain, No Standing water is present
6/8/2012	Dry	26-1/2" / 12-1/2"	34-3/4" / 20-3/4"	Dry	27-1/4" / 13-1/4"	20-1/2" / 6-1/2"	30-1/2" / 16-1/2"	No Rain since last readings
6/13/2012	Dry	28" \ 14"	35" / 21"	Dry	26" / 12"	19-1/2" / 5-1/2"	34" / 20"	0.83" rain on 6/13 & 6/14
6/18/2012	Dry	38-1/2" / 24-1/2"	Dry	DRY	40" / 26"	37-1/2" / 23-1/2"	Dry	

Good Results
Failing result - but close
Failing result - Not even Close
Up slope readings - shows drain is working to some extent

* Rainfall amounts from Weather Underground Almanac for Durham, CT

ALLOWABLE LEACHING TRENCHES

CT ROUTE #17

MAIN STREET

65 L.F. 6" SOLID PVC (SDR-35) @ S=1%

REMOVE EXIST. SEPTIC D-BOX

REMOVE EXIST. SEPTIC LEACHING TRENCHES

INV. ELEV. 231.80

OUTLET INV. ELEV. 231.00

40 L.F. SILT FENCE

C.O. TO GRADE

INV. ELEV. 232.05

LIMIT OF REGRADING STABILIZE ALL DISTURBED AREAS WITH HAY (1 BALE/400 S.F.)

358 L.F. 6" PVC CURTAIN DRAIN

SHALLOW MONITORING WELL (BY ENGINEER) (TYP. OF 7)

INV. ELEV. 232.75

C.O. TO GRADE

APPROX. LOCATION OF FUTURE LEACHING FIELDS

INV. ELEV. 232.90

C.O. TO GRADE

50' x 80'

50' x 80'

UNSUITABLE AREA

MLSS = 210'

MLSS = (PF)(HF)(FF)

210' = (2.0)(48)(FF)

FF = 2.2 x 300 = 656 gpd ALLOWED

GRAPHIC SCALE: 30 0 30 60

LOCATION MAP SCALE: 1"=1000'

CONSTRUCTION NOTES:

1. All methods and materials used in the construction of the curtain drain indicated on this plan shall conform to the latest provisions of the CT Public Health Code Regulations and Technical Standards for Subsurface Sewage Disposal Systems.
2. Solid PVC pipe and fittings shall conform to ASTM D-3034 SDR-35, perforated PVC pipe and fittings shall conform to ASTM D-3033 or is conformance with the latest Health Code.
3. Cores shall be staked prior to construction to prevent further compaction of the existing soil.
4. Construction equipment is to stay off the area of system before and after installation.
5. All surplus topsoil and excavated materials are to be removed from the site and legally disposed.
6. All structures shall be clearly marked after construction.
7. Curtain drain shall be protected from siltation and erosion during and after construction.
8. Curtain drain shall not be installed on frozen or muddy ground.
9. The location of the improvements shown hereon shall be staked up a licensed land surveyor prior to construction, to be furnished to owner.
10. The contractor shall notify the design engineer at least 48 hrs. in advance of curtain drain installation in order to allow observation of the work.
11. Notify Dig Safe(tm) Dial Dig prior to any on-site excavation (1-800-922-4455).
12. Owner & Applicant: Town of Durham
32 Townsquare Road
Durham, CT 06422
860-346-2152

EROSION CONTROL NOTES:

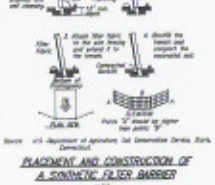
1. Land disturbance shall be kept to the minimum necessary for construction operations.
2. All soil erosion and sediment control measures must be constructed in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control by the Connecticut Council on Soil and Water Conservation in cooperation with the Connecticut Department of Environmental Protection.
3. Erosion and sediment control measures shall be installed as depicted on this plan, and maintained in an effective condition throughout the construction period. Additional measures must be installed as necessary and required.
4. All disturbed areas shall be permanently stabilized as soon as practicable.
5. Laura French, Plot Developer, 20 Townsquare Road, Durham, CT 06422, 860-346-9670, is assigned the responsibility for implementing the control measures of this plan. This responsibility includes the installation and maintenance of control measures, informing all parties engaged on the construction site of the requirements and objectives of this plan, and notifying the Planning and Zoning Commission of any transfer of this responsibility, and the assuming a copy of this plan if title to the property is transferred.

GENERAL NOTES:

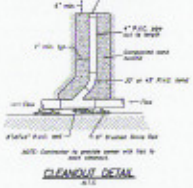
1. Base survey (map) has been prepared by Michael H. Perkins, Land Surveyors – Planners, 52 Main Street, Deep River, Connecticut, (860) 526-9582, pursuant to the regulations of Connecticut State Agencies Sections 20-300b-1 through 20-300b-20 and the Standards for Surveys and Maps in the State of Connecticut 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 Cross Route #17, Durham, Connecticut, Prepared For The Town of Durham" Sheet 1 of 1, Scale 1"=30', Dated 3/22/2010, by Michael H. Perkins, Land Surveyors – Planners, 52 Main Street, Durham, Connecticut, (860) 526-9582.
3. Total area = 214,038± s.f. = 4.915± acres.
4. Parcels are known as lots 18, 20 & 21 on Durham Tax Assessor Map No. 18 and are partially located within the Main Street Residential Zone and partially within the Town Residential Zone.
5. All underground utility 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. Perkins, Land Surveyors – Planners.
6. Wetlands were field delineated on March 11, 2010 by Soil Resource Consultants, Susan H. Lord Certified Soil Scientist.
7. Parcels are subject to Building Area, if established, and any and all provisions of any building and zoning ordinances enacted by the Town of Durham, and any and all provisions of any ordinances, municipal regulations, or public or private law.
8. Portions of the parcels may be subject to rules and regulations of the Inland Commi.

LEGEND

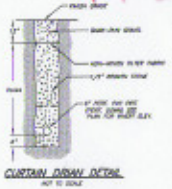
DOT Mon.	State Highway Dept. Monument
L pipe	Iron Pipe
D L pin	Iron Pin
	Property line
	Adjacent Property line
	Fence
	Chain guide rail
	Tar fence
	Wetlands Boundary line
	Wetlands Boundary flag w/number
	Wetlands
	Location of soil test pit w/number
	Town Water Sewer Pipe
	Underground Cable TV Wire
	Underground Electric Wire
	Underground Telephone Wires
	Underground Telephone Wires
	Zoning District boundary line
	Historic District boundary line
	Water line
	Utility Pole owned by SNET
	Manhole
	Catch Basin or Lawn Well
	Monitoring well
	Light Pole
	Footbridge
	Perforated Corrugated Pipe
	Reinforced Concrete Pipe
	Corrugated Metal Pipe
	Conifers
	Field
	Direction
	Bituminous
	Concrete
	Masonry
	Bituminous Concrete Lip Curb
	3 foot contour with elevation
	1 foot contour with elevation
	Spot elevation
	Brush/tree line



PLACEMENT AND CONSTRUCTION OF A SYNTHETIC FILTER BARRIER



CLEANOUT DETAIL



CURTAIN DRAIN DETAIL

REVISIONS		
NO.	DESCRIPTION	DATE
1	MINOR REVISIONS	2/2/12
2		6/21/12

SHAKER / PETRUCCELLI + ASSOCIATES
Architects / Engineers / Interior Designers
1240 Boston Avenue, Bridgeport, CT 06610-2526
Tel. 203-336-9661 Fax. 203-336-0247
sdesigns@aol.com

DONALD W. SMITH, JR., P.E.
CONSULTING ENGINEER
56 GREENWOOD CIRCLE SEYMOUR, CT 06483
Tel. 203-888-4804 Fax. 203-887-3434 dwsjr@attbiglobal.net

PROPOSED SITE IMPROVEMENTS

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

C: Inland Wetland

LEGAL NOTICE
TOWN OF DURHAM

Decisions of the Inland Wetlands and Water Courses Agency

At its July 11, 2016 meeting the Agency voted:

There is minimal activity in the wetland and to approve an application by Lyman Farms, Inc. to construct a 12' wide and 30' long bridge for the 14th hole and remove an existing culvert at the 14th hole.

There is no activity in the wetland and to approve an application by the Town of Durham to modify the approved site plan for proposed improvements at the Public Safety Complex at 37, 41, & 51 Main Street.

Dated in Durham, Connecticut this 18th day of July, 2016

Inland Wetlands and Water Courses Agency
Town of Durham, Connecticut

Richard Eriksen, Chairman

Publish on: July 18, 2016

/jak
7/13/16

cc: D. Eriksen
L. Francis
G. Colegrove
K. Garvis
Bascom & Benjamin
D. Smith

LEGAL NOTICE
TOWN OF DURHAM

Decisions of the Inland Wetlands and Water Courses Agency

At its January 11, 2016 meeting the Agency voted:

There is no significant activity in the wetland and to approve the application of the Town of Durham for the activities in the 100' upland review area and in a regulated area for the Durham Public Safety Facility at 37, 41, & 51 Main Street. Map Reference: "Town of Durham Public Safety Complex…Ct Route 17, Durham Connecticut". Scale: 1"=30'. Date: 12/7/15. Sheets 1-6. Prepared by: Donald W. Smith JR., P.E.

Dated in Durham, Connecticut this 19th day of January, 2016

Inland Wetlands and Water Courses Agency
Town of Durham, Connecticut

Richard Eriksen, Chairman

Publish on: January 19, 2016

/jak
1/16/16

cc: D. Eriksen
L. Francis
G. Colegrove
D. Smith
K. Garvis
Bascom & Benjamin

DURHAM INLAND WETLANDS AND WATERCOURSES AGENCY

APPLICATION FOR PERMIT
(Inland Wetlands and Watercourses Act - Public Act 155)

General information to be supplied by all applicants for a permit:

1. Name of Applicant Town of Durham
   Address 30 Townhouse Road, Durham 06422
   _____ Indicate if other than property owner.
   Applicant's interest in property (lessee, licensee, etc.) Owner

2. Name of Property Owner Town of Durham
   Address 30 Townhouse Road, Durham 06422

3. Location of Property #37, #41 & #51 Main St, (Map 58, Lots #19, 20 & 21)
   Include lot number as shown on Tax Assessor's Map

4. Description of proposed activity and location of property: See attached
   Include listing of all proposed regulated activities.

5. Number of areas of wetland included in application:
   Include soil drainage classification(s) or natural soils group classification (s).

The applicant understands that this application is to be considered complete only when all information and documents required by the Agency have been submitted.

The undersigned warrants the truth of all statements contained herein and in all supporting documents according to the best of his knowledge and belief.

This form received by Agency

Date _____

By _____

Supporting documents completed and received:
Date _____
By _____

Town of Durham
Applicant

_____
Authorized Agent

30 Townhouse Road
Address
Durham 06422

Telephone # 860-349-3625

_____ 1. Any proposed on-site sewage disposal system shall be certified by a registered sanitary engineer and a letter of approval submitted by the Town of Durham Department of Health.

5. _____ Location of any water courses or inland wetlands covered by the site plan as defined in Section 2 of thee regulations are in Section 4 of Public Act 155.
   _____ a. Boundaries and symbol of soil mapping unit(s).

6. _____ Site areas of permit and designation of each activity.

7. _____ Existing and proposed buildings or other structures.
   _____ a. Location
   _____ b. Floor Elevation

8. _____ Location, size and composition of sidewalks, off-street parking and loading including driveway entrances and exits, parking and loading spaces, and traffic islands and barriers.
   _____ a. Percent of regulated area to be covered with impermeable surface.

9. _____ Location of tree stands, shrubs and other significant vegetation, both existing and planned.

10. _____ Source of water supply.

11. _____ Proposed method of sewage disposal.
    _____ a. Proposed design and specifications of on-site sewage disposal certified by a sanitary engineer.

12. _____ Design of existing and proposed storm drainage system including elevations by contour at not less than five foot intervals. Additional detail may be required.

13. _____ Proposed grading by not less than five foot contours of any materials to be moved. Additional details may be required.

14. _____ Location of all percolation pits, test pits and observation holes.

18. Probable effects of changes on:
    _____ a. Vegetation
    _____ b. Wildlife

19. Measures to protect regulated area from:
    _____ a. Erosion and sedimentation
    _____ b. Leaching of pollutants
    _____ c. Direct discharge of pollutants
    _____ d. Increased flooding and surface runoff hazards

20. Other site information as the Agency deems necessary to meet the objectives of these regulations and Public Act 155 (List).

_____

_____

_____

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION

Statewide Inland Wetlands and Watercourses Activity Reporting Form

In accordance with the requirements of Section 22a-39-14 of the Regulations of Connecticut State Agencies, this form is to be completed for each action. Completed forms for all reportable actions during a calendar month shall be mailed to the Commissioner by the local agency no later than the 15th day of the month following the month in which the action was taken. (See instructions on back.)

1. TOWN: Durham
2. LOCATION: (Original scale copy of the USGS Quad Map with the site outlined of pinpointed)
   USGS QUAD NUMBER: ____ OR NAME: Durham, CT
3. APPLICANT'S OR VIOLATOR'S NAME: Town Of Durham
4. PROJECT NAME: Public Safety Facility
5. ACTIVITY TYPE CODE: (See list of codes on back, Max of 4 Codes) .... [9, 12]
   If type code is 12 or 13, briefly describe the activity:
   Expansion of the existing Public Service Facility
6. ACTIVITY PURPOSE CODE: (See list of codes on back, max. of 4 codes) ... [E]
7. ACREAGE OF WETLANDS AND WATERCOURSES ALTERED: (or proposed to be altered, temporary or permanent) (for all agency permits, denials and enforcement actions)
   A. Wetland Soil(s) Area Altered: ..... [0.0 ACRES]
      Wetland Soil Symbols (e.g. lg, PkA, Rn) ... Aq
   B. If soil type is not available specify the area as follows:
      Swamp .... [ACRES]
      Bog ..... [ACRES]
      Marsh .... [ACRES]
   C. Open Water body Area Altered: ..... [0.0 ACRES]
8. ACREAGE OF WETLANDS OR WATERCOURSES CREATED: .. [0.0 ACRES]
9. LINEAR FEET OF STREAM ALTERNATION: ..... [0.0 ACRES]
10. TOTAL ACREAGE OF PROJECT SITE: ..... [4.91 ACRES]

For Local Agency Use Only	For State Use Only
11. Reporting Month: ____	
12. Public Hearing Held Y N	GIS Code: _____
13. Action: Enter Letter ___	
A. Permit issued	
B. Permit denied	
C. Permit extend/amend	
D. Map amendment	
E. Enforcement	
F. Jurisdictional ruling	
14. Agent: _____	Date Received: _____

D: Historic Commission

E: Planning & Zoning

TOWN OF DURHAM

Planning and Zoning Commission
P.O. Box 428
Durham, Connecticut 06422-0428

APPLICATION FOR SITE PLAN REVIEW/SPECIAL PERMIT

Applicant's Name: Town of Durham Phone: 860-349-3452
Address: 30 Townhouse Road, Durham 06422 Zone: Main St Res/Farm Res
Property Location: #37, #41 & #51 Main Street
Property Owner: Town of Durham
Assessor's Map No.: 58 Block No.: _____ Parcel No.: 19, 20 &21
Section under which application is made: 13.05.05 (5)(b)- Special Exception

_____ 1. Site Plan Received (see Section 13.3, TOWN OF DURHAM ZONING REG.)
_____ 2. Description of Proposed Uses and Structures: Town of Durham Public Safety Complex (Emergency Services Facility) Including additions and alterations to the existing buildings at #37, #41 & #51 Main Street.

_____ 3. Fee Received: Site Plan = $40.00; Special Permit = $100.00 or $35.00/unit.

The owner and the applicant hereby grant the Durham Planning and Zoning Commission and/or its agents permission to enter upon the property for which Site Plan Review/Special Permit approval is requested for the purpose of inspection and enforcement of the Zoning Regulations of the Town of Durham.

Applicant's Signature: _____ Date: _____

Owner's Signature: _____ Date: _____

Date Application Recieved: _____
Date of Decision: _____
Bond Posted: _____ Date: _____
Approved: _____ Chairman, P/Z Commission

Conditions: _____

Not Approved: _____ Chairman, P/Z Commission
Date: _____

Received: August 23, 2016
10:57 am
Office of the Town Clerk

Planning and Zoning Commission Meeting
7:30 p.m., Wednesday, August 3, 2016
Lower Level Meeting Room, Durham Library
Minutes

1. Call to order

Frank DeFelice called the meeting to order at 7:30 p.m.

2. Roll Call

In attendance: Lisa Davenport, Frank DeFelice, Dick Eriksen, Chris Flanagan, Dave Foley, Dan Melnik, Jan Melnik, and Will Spooner
Absent: Alana Adams, Campbell Barrett, Edward Fronc, and Joe Pasquale
Others in attendance: Geoff Colegrove, Attorney John Corona, Paul Jorgensen; Architect with Silver Petrucelli & Associates

3. Seating of Alternates: Will Spooner was seated for Alana Adams

4. Amendments to Agenda

MOTION BY JAN MELNIK, SECONDED BY DAVE FOLEY TO MOVE PUBLIC HEARING ITEM #3; R. & N. SLEATH TO PUBLIC HEARING ITEM #1. ALL AYE

5. Approval of Agenda

MOTION BY JAN MELNIK, SECONDED BY DAVE FOLEY TO APPROVE THE AGENDA AS AMENDED. ALL AYE

6. Public Session

George Eames, 430 Haddam Quarter Road stated he understood that Korn School was being utilized by the Connecticut State Police for training over the next couple of months and asked why they were not required to come before the commission for review and special permit and if there would be any consideration of a cease and desist. Frank DeFelice stated that he would have the ZEO contact the owner of the building, RSD#13, to discuss. Richard Kelish stated that he felt the town owned the land. Geoff Colegrove responded that RSD#13 owns the property and the building.

7. 8-24 Review, Emergency Management Complex

G. Colegrove informed the commission that the Selectmen were requesting an 8-24 review of the emergency management complex for the purpose of compliance of the Plan. He noted the commission could vote to approve or disapprove, stating the recommendation is advisory, but necessary.
MOTION BY DICK ERIKSEN, SECONDED BY JAN MELNIK TO APPROVE 8-24 REVIEW FOR EMERGENCY MANAGEMENT COMPLEX. ALL AYE
MOTION BY JAN MELNIK, SECONDED BY DAVE FOLEY TO RECESS THE REGULAR MEETING AND TO OPEN THE PUBLIC HEARING AT 8:00 P.M. ALL AYE

PUBLIC HEARING
Applicant/Owner: R. & N. Sleath
Property Location: 360R Johnson Lane
Proposed Activity: Establish accessory apartment in existing residential building
In attendance: Lisa Davenport, Frank DeFelice, Dick Eriksen, Chris Flanagan, Dave Foley, Dan Melnik, Jan Melnik, and Will Spooner
Absent: Alana Adams, Campbell Barrett, Edward Fronc, and Joe Pasquale
Others in attendance: Geoff Colegrove, Attorney John Corona, Rowland and Nancy Sleath
Seating of Alternates: Will Spooner was seated for Alana Adams

Attorney John Corona stated the Sleath's purchased property at 360R Johnson Lane in 1970 that consisted of a single house which they occupied. They then applied for permits and constructed a second larger home on the property that they moved into and rented the smaller home. They are now looking to sell the property and because no records of the towns permit to allow the two homes on a single parcel can be located, buyers and mortgage lenders are requiring confirmation that the property complies with town zoning requirements. Attorney Corona submitted as Exhibit A, documentation from the Zoning Board of Appeals dated July 14, 2016, approving the Sleath's request of accessory unit to exist outside the single family residence and to permit the accessory unit to exceed the one-third limitation by 62 square feet with no conditions. He also passed out an aerial picture of the buildings currently on the lot, a picture of the required sign posting, letters of support from surrounding neighbors, and a map that showed the principal and accessory apartment that included driveways, wells, and septic.

Dan Melnik asked if there were separate meters for electric. Attorney Corona responded yes, and also noted that each building had its own well and septic, but did share a driveway. He also noted that he received a recommendation from an engineer that a subdivision of the property was not feasible.
F. DeFelice noted that the accessory apartment would have to follow all current rules; including re-inspections.

MOTION BY DAVE FOLEY, SECONDED BY LISA DAVENPORT TO CLOSE THE PUBLIC HEARING AT 8:10 P.M. ALL AYE
MOTION BY LISA DAVENPORT, SECONDED BY DAVE FOLEY TO APPROVE R. & N. SLEATH APPLICATION, 360R JOHNSON LANE, TO ESTABLISH ACCESSORY APARTMENT IN EXISTING RESIDENTIAL BUILDING. ALL AYE

PUBLIC HEARING
Applicant/Owner: Town of Durham
Property Location: #37, #41, #51 Main Street
Proposed Activity: Special Permit, Public Safety Complex
In attendance: Lisa Davenport, Frank DeFelice, Dick Eriksen, Chris Flanagan, Dave Foley, Dan Melnik, Jan Melnik, and Will Spooner
Absent: Alana Adams, Campbell Barrett, Edward Fronc, and Joe Pasquale
Others in attendance: Geoff Colegrove, Donald Smith Jr. P.E., Paul Jorgensen, AIA, Architect; Silver Petrucelli & Associates, Dave Sullivan, Milone & MacBroom, Inc.
Seating of Alternates: Will Spooner was seated for Alana Adams Dan Melnik recused himself from the public hearing.

Donald Smith reviewed the site plan that included driveways, generator, and septic for the existing buildings at #37, #41, and #51 Main Street.

#37 Main Street
- Proposed use; Ambulance Corp with dayroom, offices, conference room and storage.
- Will require a de-contamination tank with outflow into a holding tank. Stormwater regulations require that it be constructed in front of the building and flow into the DOT system.
- He noted that comments received back in January from Town Engineer, Brian Curtis have been addressed and are included in the proposal.
- 15-foot side yard.
- Generator and two propane tanks.

#41 Main Street
- Proposed use; Fire House.
- 2800 square foot addition; one bay wide by two bays deep.
- Existing shed is being relocated behind the building.
- Since the 1970's the building septic has been location across the street on Durham Fair property. Recent research has revealed that neither an agreement or easement can be found on town records. Currently the Fair Association has agreed to a license agreement.
- Soil testing at the back of site has been done to see if a septic system would be suitable but groundwater deemed it unacceptable. The town made improvements by installing a curtain drain, this proved that it only worked on one half of the property. The system being proposed would have the capacity of 750 gallons a day and would be adequate for the current capacity at of 120 gallons a day. He noted that the 750-gallon capacity could be reached if a large event was held or the building was used as a shelter.

#51 Main Street
- Proposed use; offices for Resident State Trooper, Emergency Management, and Public Safety Communications.
- A significant portion of the building will be demolished. A three bay carriage house (approximately 1600 square feet) and ramping will be constructed. Included will be floor drains, a separator, oil drains and a holding tank. On the north side there will be a small surface storm water management system and detention area.
- Existing driveway will be widened and realigned.
- Exit will be reconstructed in the same location.
- Septic system will be in the back of the property with the design capacity of 150 gallons a day.

All three buildings will be served by city water and the two existing wells will be abandoned.
Dave Sullivan, Milone & MacBroom, Inc. was asked to look at the traffic study done in 2010 and report findings.
- Generation of traffic has not changed significantly.
- 2010-2013 traffic volumes were reviewed and showed they went down a little.
- Peak hours are the same or slightly lower.

- Exiting #41 Main Street; a.m. peak hours equate to a level of service C; p.m. peak hours taking a right from the exit are ok, taking a left show poor level of service.
- The proposed driveway of 20 feet wide is sufficient for left or right turn.
- Sight frontage for driveways have adequate sightline.
- Flashing signal light is very common and will function as is for widened driveway. Adequate for firehouse purpose and egress.
- Ambulance driveway not a lot that can be done. The State Department of Transportation (DOT) takes direction from the Manual on Uniform Traffic Control Devices. The installation of lights is not warranted. Supplemental signage can be discussed with DOT.

Paul Jorgensen, Architect with Silver Petrucelli & Associates reviewed proposed additions and alterations to the existing buildings.
#37 Main Street
- Fully renovated with a large addition in the back and a double garage with pull thru bays.
- ADA compliant with handicap access in rear with wheelchair lift.
- 2108 square feet minus the bays.

#41 Main Street
- Addition of 2800 square foot building on the north side.
- New 14x14 drive thru bay.
- Minor ADA improvements.

#51 Main Street
- Current structure will be gutted and will be rebuilding core wood frame structure with a smaller footprint of 550 square feet.
- Carriage house to be built that will include three bays.
- Similar siding and windows as original structure.

Historic District Commission has given conditional approval based on conceptual design.

Lisa Davenport thanked everyone for the great work in integrating the old with the new but questioned why #37 and #51 Main Street buildings were not being taken down and had serious reservations if this proposal was wise use of taxpayer money. P. Jorgensen stated they were asked to keep the historic component of the homes and to keep the integrity of the buildings.

Chris Flanagan asked if there were any conditional items that the Historic District Commission would not allow. P. Jorgensen stated they want to see actual elements that will be used if the project gets approved.

Jan Melnik then read the legal notice into the record.

LEGAL NOTICE
TOWN OF DURHAM
Public Hearing of the Planning and Zoning Commission

The Town Planning and Zoning Commission of Durham, Connecticut will hold a public hearing on Wednesday, August 3, 2016 at 8:00 p.m. in the Durham Public Library Meeting Room, 7 Maple Avenue, on the following application:

Applicant/Owner: Town of Durham
Property Location: 37, 41, 51 Main Street
Proposed Activity: Special Permit, Public Safety Complex Project
At this hearing interested persons may appear and be heard and written communications will be received. A copy of this application is on file in the Land Use Office, Durham Town Hall, for public inspection.

Dated in Durham, Connecticut, this 21st day of July, 2016.

Planning and Zoning Commission
Town of Durham, Connecticut
Frank DeFelice, Chairman
Published On: July 21, 2016 and July 28, 2016

J. Melnik read a letter dated August 3, 2016 to Frank DeFelice, Chair of Planning and Zoning Commission from Town Engineer Brian Curtis, Nathan L. Jacobson & Associates, Inc. in reference to the drawings and related design information prepared for the expansion of the Public Safety Complex on Main Street in Durham. (copy of letter following minutes)

J. Melnik read letter dated August 3, 2016 to Frank DeFelice, Chair of Planning and Zoning Commission from William Milardo, Jr., Assistant Health Officer for the town of Durham in reference to the site development plan for the Public Safety Complex concerning the proposed water supply and sewage disposal facilities. (copy of letter following minutes)

C. Flanagan asked if the conference room at 37 Main Street was converted to a bedroom would it exceed the proposed septic requirements. P. Jorgensen replied no.

D. Eriksen asked D. Smith if he received and reviewed comments from Town Engineer, Brian Curtis. He responded yes, and will be incorporating B. Curtis's recommendations into the plan with one exception B1: "it is recommended that the existing curbed concrete entrance slab at the easterly double door entrance to the meeting room be removed and replaced with a handicapped accessible entrance ramp", noting that work has previously been done.

D. Foley asked if any consideration has been taken to buffering properties to the north and south stating increased uses will have impact on the neighbors. D. Smith stated no buffering has been proposed. The existing vegetation on the north side will be staying. On the south property line, the building is outside the 15-foot setback but could provide screening by incorporating trees or stockade fencing. D. Foley stated he would like to incorporate buffering in setbacks.

D. Foley asked what the square footage of the ambulance corp service bays and for the three bays in the north. P. Jorgensen responded the ambulance corp service bays are just under 1000 square feet and the three bays was 1600 square feet. D. Foley asked why the miscellaneous storage at #37 Main Street took up more space than the ambulance. P. Jorgenson stated the storage area would be utilized by all three departments.

C. Flanagan talked about the height of the building and 8 feet of buffering not being sufficient.

L. Davenport asked if there was any consideration made in the plan for future consequences related to the Durham Fair pulling the license agreement for septic regarding #41 Main Street. D. Smith made reference to Sheet C4 which showed the three buildings septic system requirements and the breakdown of design flow, noting that they would need to look at the flows and put in a large flow equalization tank for peak flow, store it in a large holding tank, and then pump out within the next three days. As for future use, new design work would need to be done.

F. DeFelice asked a series of questions:

- If holding tanks would have high level alarms, and if there were reserve fields for septic on the northeast side of the property? The applicant's representative replied in the affirmative.
- The reserve field for septic is along the northeast corner of the parking lot. Could the shed shown on the print be relocated to the south side? The applicant's representative replied in the affirmative.
- Has consideration been given to solid core vinyl considered as a siding material? The applicant's representative replied in the affirmative; but stated that the applicant would need permission from the Historic District Commission.
- If the traffic light and stop bars remain where they are, and all traffic were to come in from the southern ambulance driveway, when the ambulance leaves it would be able to take advantage of the light. D. Foley noted that the ambulance does not trigger the light. D. Smith reiterated if the stop bars are relocated the town may lose the current light all together.
- Will the parcels be merged prior to construction? The applicant's representative replied in the affirmative.
- Has the applicant provided photometrics for lighting? The applicant's representative replied that they have not provided photometrics. Exterior building lighting is proposed; however, there will be no freestanding light poles.
- How long is a septic system construction permit good for? D. Smith stated the septic approval is contingent on the current health code requirements; and did not expect any significant changes in the next couple of years. If there was significant change, or the Durham Fair pulled the license for #41 Main Street, the septic would have to put in to meet current health code.

Public Comment

Mia Liss, 21 Main Street, stated she was very concerned with the use of #37 Main Street being used for the Ambulance Corp, noting it was being proposed in a residential zone with no buffering. She felt the addition of the large garage will be changing the residential aspect. She stated that #37 Main Street's backyard was visible from her backyard and had concerns regarding property values. She noted it was originally thought this building was to be used for the Resident State Trooper office and felt this would be a better use. She asked the Board to take this into consideration.

Robert Madler, 31 Main Street, stated that the proposed garage at 37 Main Street would be fifteen feet from his residence. He did not like the idea of traffic issues related to the ambulance leaving to be rectified by throwing on sirens. He referred to a prior comment and asked for consideration of moving the garage from the south side to the north side, and making it a drive thru. By moving the driveway up a bit most traffic could go through the drive thru garage and the ambulance could use the 2nd driveway from the south as an exit or entrance through the same bay.

Dick Kellish, owns homes at 227 and 227A Main Street. He questioned how many feet the fire house garage was. He stated he was on a prior committee that issued a report to the then First Selectman that left 90 feet to the fire department from the end of their garage, to put two more bays on and still have the gravel driveway on the other side, and asked if this was part of the proposal. D. Smith noted that he not aware of Mr. Kellish's report and made reference to the proposed plan and explained from the edge of the firehouse to the edge of the house at #51 there is approximately 115 feet. The proposed addition at #41 is about 37 feet wide.

Chuck Stengel thanked everyone who worked on the project and voiced the following concerns; he questioned the permanency of joining the lots, in doing so this will be a major step to financial obligations. He noted his commitment to the community to not increase taxes when he was elected to the Board of Finance. The town has several major projects coming up; the closing of Korn School and the potential for a long term lease, and the potential of RSD#13 budget increase to make renovations to other school to close down Lyman School. He asked that the item be tabled until a public meeting is held that will explain the project in total including potential costs.

George Eames stated he felt the proposed plan did not fit in a residential neighborhood and would limit future use of the fire house expansion. He made reference to Town Regulations, Chapter 7, Section: 13.05.04 General Standards. He then made reference to Section: 13.05.05.01 Notice of Public Hearing by Applicant, item (1) "the location of the sign(s) shall be shown on the site development plan and approved by the Planning and Zoning Commission", noting it was not on the plan or approved by the commission. He asked if the location of the sign was approved by the commission.

G. Colegrove stated the signage was approved at the last meeting. There is a notation on the map with the existing sign and the sign was placed inside that structure and is located on the plan. He received a dated photograph when it was put up which meets the requirements for the sequence of time. There was a question of which direction the sign should be facing and he suggested switching it north and south for equal opportunity for viewing.

Ona McLaughlin clarified the Historic District Commission's position; stating that the HDC was asked to approve the concept; however, there has been no application to date.

Nancy Cuomo noted concern regarding the high cost of the project and asked what had been spent to date on the design. F. DeFelice explained that cost is not considered as part of any land use application and she should seek this information from the town's Finance Director.

Roger Passavant questioned what the current zoning was on the proposed plan. G. Colegrove stated the parcel was split; on the east it is farm residential and to the west, main street residential.

Roger Kleeman asked if the propane for generators proposed for #37 Main Street were in bottles or a tank. D. Smith stated there were two (2) 1,000-gallon propane tanks above ground; 40 feet from either building. D. Smith noted that the tanks could not be buried in the current location but could be put in another location on the site.

D. Foley stated he did not believe the commission approved the location of the public notice sign at the last meeting and suggested extending the public hearing based on the notice not being adequately noticed.

G. Colegrove disagreed; stating that he talked about putting it in existing public safety sign framework.

J. Melnik asked what the approach and timeframe would be to have the applicant present alternate plans based on buffering, traffic, and the location of propane. F. DeFelice asked D. Smith if September 7th timeframe would be sufficient. D. Smith replied yes.

G. Colegrove stated that the public notice signage would be reposted.

MOTION BY DAVE FOLEY, SECONDED BY LISA DAVENPORT TO EXTEND THE PUBLIC HEARING BASED ON NOTICE NOT BEING ADEQUATELY NOTICED TO SEPTEMBER 7, 2016. DAVENPORT, DEFELICE, ERIKSEN, FLANAGAN, FOLEY, J. MELNIK, SPOONER; AYE.

8. Payment of Bills

MOTION BY DAN MELNIK, SECONDED BY LISA DAVENPORT TO APPROVE BILLING FOR BETH MONCATA IN THE AMOUNT OF $382.50. ALL AYE

MOTION BY DAN MELNIK, SECONDED BY LISA DAVENPORT TO APPROVE BYRNE & BYRNE BILLING FOR POCD IN THE AMOUNT OF $1,185.00. Discussion: Frank DeFelice stated he checked with Attorney Bryne and the billing in question was for a request from the Selectmen's office in reference to the draft Plan of Conservation and Development; regarding conflicts of interest. Dave Foley questioned why the planning and zoning commission was approving the billing. F. DeFelice stated because it was related to the draft Plan. VOTE: DAVENPORT, DEFELICE, ERIKSEN, FLANAGAN, D. MELNIK, J. MELNIK, SPOONER; AYE. FOLEY; OPPOSED. MOTION CARRIED.

9. Minutes of Previous Meetings

MOTION BY JAN MELNIK, SECONDED BY LISA DAVENPORT TO APPROVE THE JULY 20, 2016 MEETING MINUTES AS PRESENTED. DAVENPORT, DEFELICE, ERIKSEN, FLANAGAN, FOLEY, D. MELNIK, J. MELNIK; AYE. SPOONER; ABSTAIN. MOTION CARRIED.

10. Zoning Enforcement Officers Report

Route 68 Industrial Park: G. Colegrove advised owner P. DiNatale that Mr. Forlini's auto repair operation is well beyond the one employee and the number of cars allowed is well in excess of the original permit. G. Colegrove noted that Dick McManus was on vacation last week but would be doing an inspection today. He stated there were two issues, site plan and building code, noting he felt the building code was the bigger issue; use classification of structure requiring fire wall ratings between the buildings (bays). He stated he would be advising Mr. Forlini that he would need to make application and apply for a revised site plan. D. Eriksen suggested putting a time frame on the matter. G. Colegrove stated he would send Mr. Forlini a letter to request an updated site plan and application within thirty days.

11. Town Planners Report

Emails have been sent to various State Departments regarding pending grant applications, that the town's Plan of Conservation has been adopted. G. Colegrove noted he will need to submit any inconsistencies between the Plan adopted by the commission and the State Plan of Conservation and Development and the reasons within 60 days of adoption.

12. Miscellaneous

F. DeFelice stated he received correspondence from Attorney Byrne on the definition of blight and would be forwarding it to all commissioners for review and comment.

F. DeFelice talked about the subcommittee's prior work on zoning regulations, specifically the residential, industrial and commercial chapters. These will be distributed to commission members during the next few weeks.

13. Adjournment

Meeting adjourned at 10:25 p.m.

Respectfully submitted,
Beth Moncata

LEGAL NOTICE
TOWN OF DURHAM

Public Hearing of the Planning and Zoning Commission

The Town Planning and Zoning Commission of Durham, Connecticut will hold a public hearing on Wednesday, October 19, 2016 at 8:00 p.m. in the Durham Public Library Meeting Room, 7 Maple Avenue, on the following application:

Applicant/Owner: Town of Durham
Property Location: 37, 41, 51 Main Street
Proposed Activity: Special Permit, Emergency Management Complex

At this hearing interested persons may appear and be heard and written communications will be received. A copy of this application is on file in the Land Use Office, Durham Town Hall, for public inspection.

Dated in Durham, Connecticut, this 7th day of October, 2016.

Planning and Zoning Commission
Town of Durham, Connecticut

Frank DeFelice, Chairman

Publish On: October 7, 2016 and October 14, 2016

/jak
9/22/16

cc: P&ZC Members and Alternates
K. Garvis
First Selectman
G. Colegrove
Building Dept.
J. Corona
ZBA Members and Alternates
D. Smith

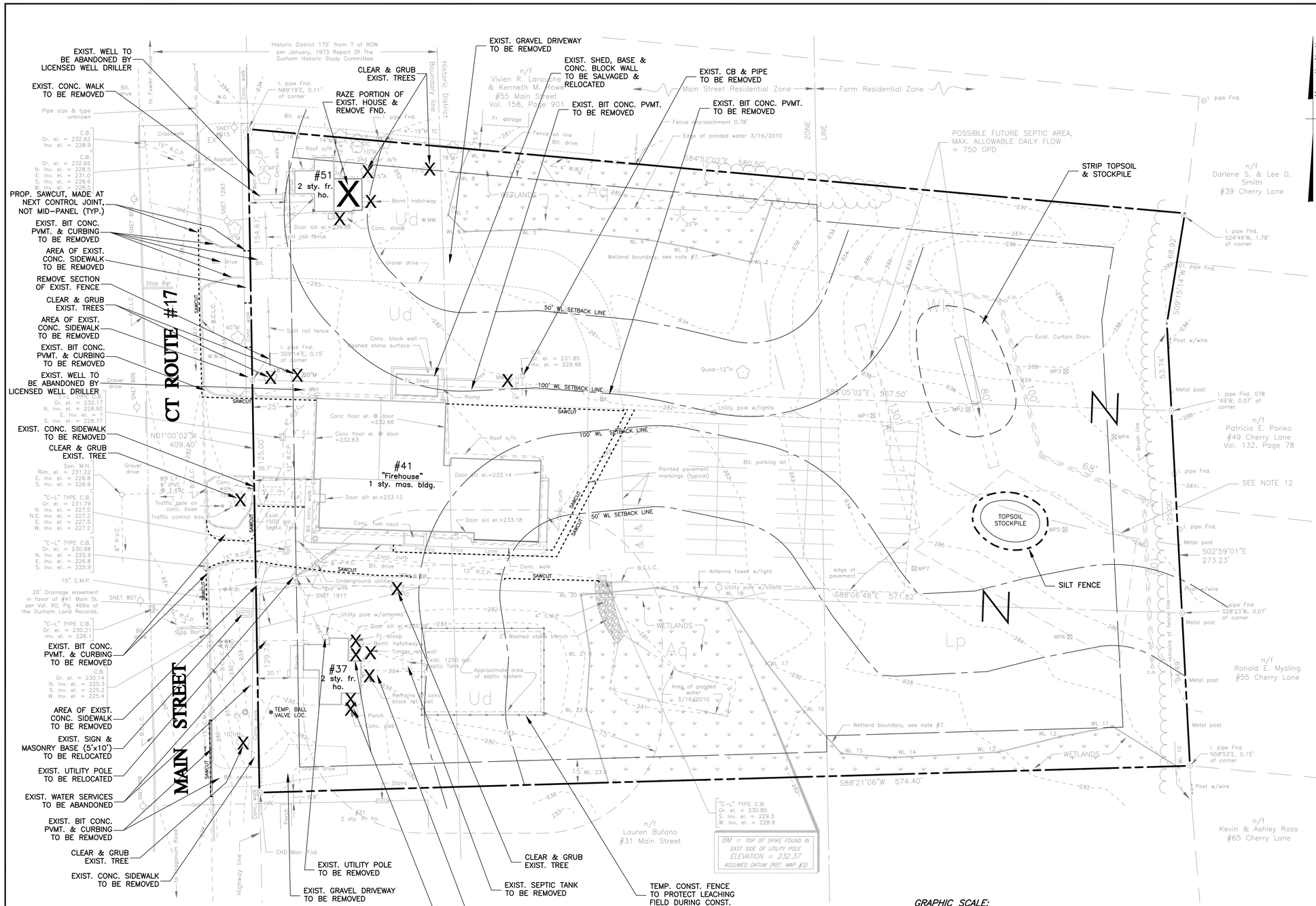
Durham Public Safety Complex
37, 41 & 51 Main Street
Durham, Connecticut 06422

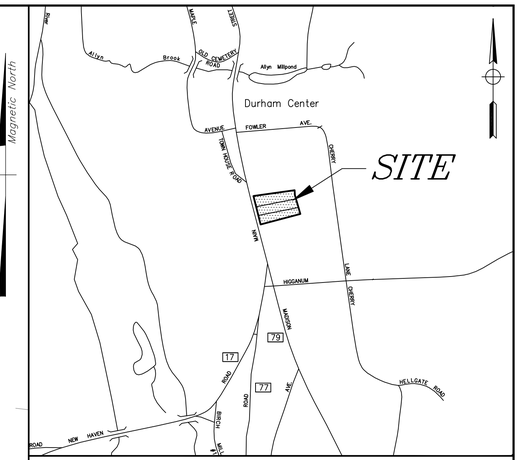
Durham Planning and Zoning Commission

SILVER / PETRUCELLI + ASSOCIATES
Architects / Engineers / Interior Designers

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

September 13, 2016





LOCATION MAP SCALE: 1" = 1000'

NOTES:

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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.
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10. Parcel is served by municipal water.
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16. Owner & Applicant: Town of Durham
    30 Townhouse Road
    Durham, CT 06422

L E G E N D

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 LI	Catch Basin or Lawn Inlet
	Property Line	M.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 w/number	San.	Sanitary
	Wetlands	Inv.	Invert
T.P.#	Location of soil Test Pit w/number	el.	Elevation
	Storm Water Sewer Pipe	bit.	Bituminous
CATV	Underground Cable TV Wire	conc.	Concrete
UGE	Underground Electric Wire	Mas.	Masonry
ATT	Underground Telephone Wires	(B.C.L.C.)	Bituminous Concrete Lip Curb
OHE	Underground Telephone Wires	165	5 foot contour with elevation
	Zoning District boundary line	161	1 foot contour with elevation
	Historic District boundary line	169.3	Spot elevation
	Water line		Brush/tree line

MICHAEL H. HORBAL
Land Surveyors & Planners
52 MAIN STREET, SEYMOUR, CT 06483
(203) 888–9660

REVISIONS		
NO.	DESCRIPTION	DATE
1	Septic & drainage	6/23/16
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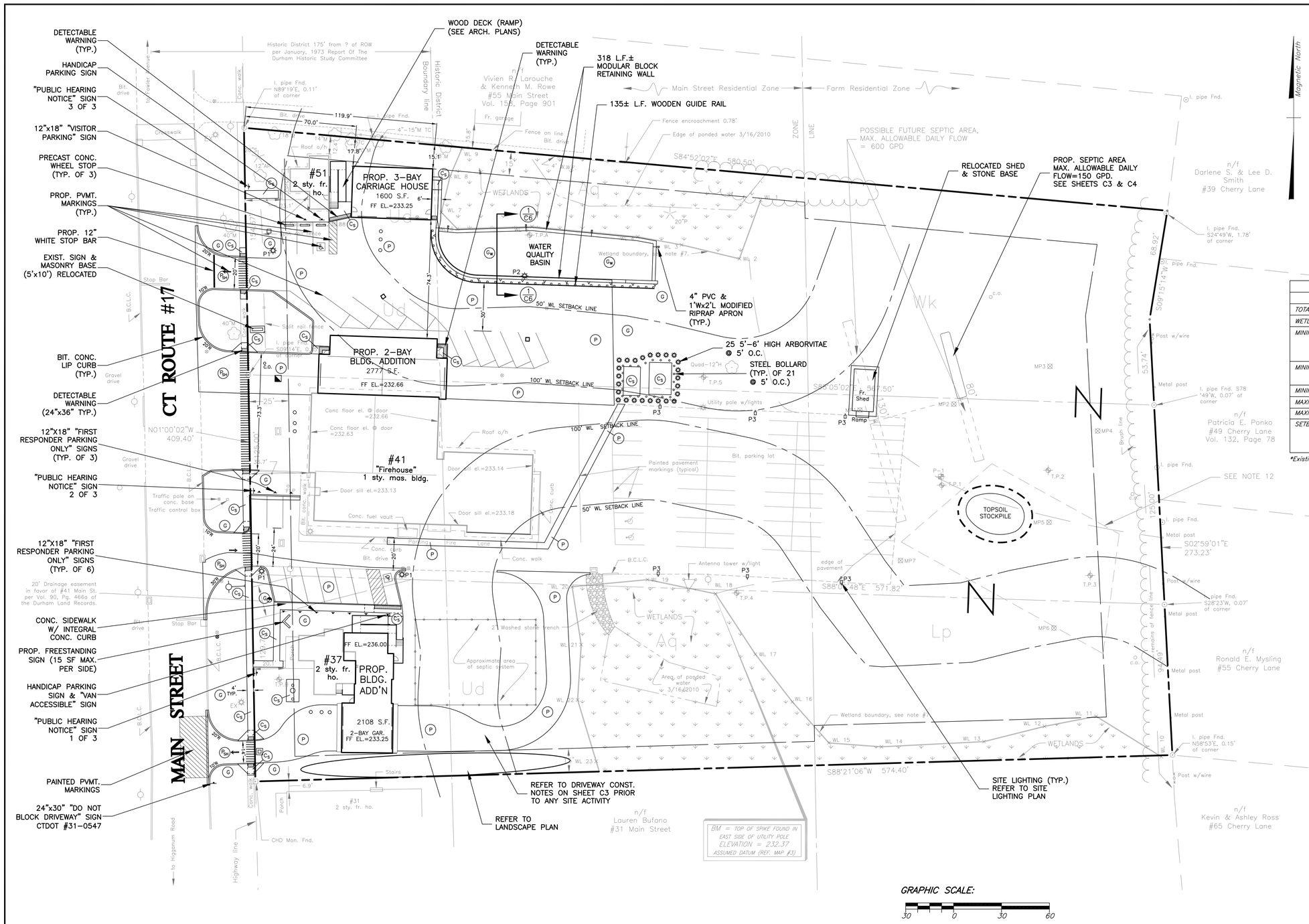
EXIST. COND. & DEMOLITION PLAN

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

DURHAM, CONNECTICUT

Job No. 09–14
Scale: 1"=30'
Date: 12/7/15
Designed: D.W.S.
Drawn: K.D.K.
Sheet: C1



SYMBOL	DESCRIPTION	CROSS SECTION
Cs	CONCRETE SIDEWALK	Broom finish, score lines @ 30 s.f. +/-, expansion joints @ 30' o.c. min. 1/4" per foot cross slope; 4", 3,000 # Cement concrete (3/4" stone); 6" x 6" – 10/10 Welded wire fabric; 4", Compacted gravel base; Subgrade (common backfill)
G Gw	GRASS (LAWN) & GRASS (WETLANDS)	Lime, fertilizer and grass seed –see sheet C6 for appropriate seed mix; 6" Min., topsoil (no stones larger than 1"); Subgrade (common backfill)
P	BITUMINOUS CONCRETE PAVEMENT	2" Bituminous concrete surface course – Class 2; 2" Bituminous concrete binder course – Class 1; 12" Processed aggregate, bank run gravel or reclaimed misc. aggregate (compacted); Subgrade (common backfill)
LB	LANDSCAPE BED	2" Min. pine bark nuggets; Weed block fabric; 3" Min., topsoil (no stones larger than 3"); Subgrade (common backfill)
PSH	PERMANENT PAVEMENT STATE HIGHWAYS	1-1/2" Class 1 bituminous concrete surface course; 1-1/2" Class 1 bituminous concrete binder course; 6" Class #4 pre-mix bituminous concrete placed in two (2) layers; 10" Rolled gravel subbase; Subgrade (common backfill)

SURFACE CODE LEGEND

N.T.S.

ZONING COMPLIANCE SUMMARY–COMBINED PARCEL

	MAIN STREET RESIDENTIAL			FARM RESIDENTIAL		
	REQUIRED	EXISTING	PROPOSED	REQUIRED	EXISTING	PROPOSED
TOTAL LOT AREA (S.F.)	–	136,115	136.115	–	77,924	77,924
WETLAND AREA (S.F.)	–	22,887	22,887	–	3,139	3,139
MINIMUM FRONT YARD	25'	#51 23.1'* #41 36' #37 20.1'*	#51 23.1'* #41 36' #37 20.1'*	N/A	–	–
MINIMUM SIDE YARD	15'	#51 12.4'* #37 52'	#51 12.4'* #37 15.1'	25'	–	–
MINIMUM REAR YARD	N/A	–	–	40'	#41 389'	#41 389'
MAXIMUM BUILDING HEIGHT	≤35'	≤35'	≤35'	≤35'	–	–
MAXIMUM BUILDING COVERAGE	≤20%	8.9%	13.5%	≤12%	–	–
SETBACK FROM WETLANDS	50'	#51 46'* #41 41'* #37 138'	#51 60' #41 41'* #37 110'	50'	–	–

*Existing non–conforming.

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16. Owner & Applicant: Town of Durham, 30 Townhouse Road, Durham, CT 06422

GRAPHIC SCALE:

30 0 30 60

APPROVED BY DURHAM PLANNING & ZONING COMMISSION ON

_____.

APPROVAL DATE

X_____ _____

(signed) CHAIRMAN DATE

REVISIONS		
NO.	DESCRIPTION	DATE
1	Septic & drainage	6/23/16
2	Review comments	9/13/16

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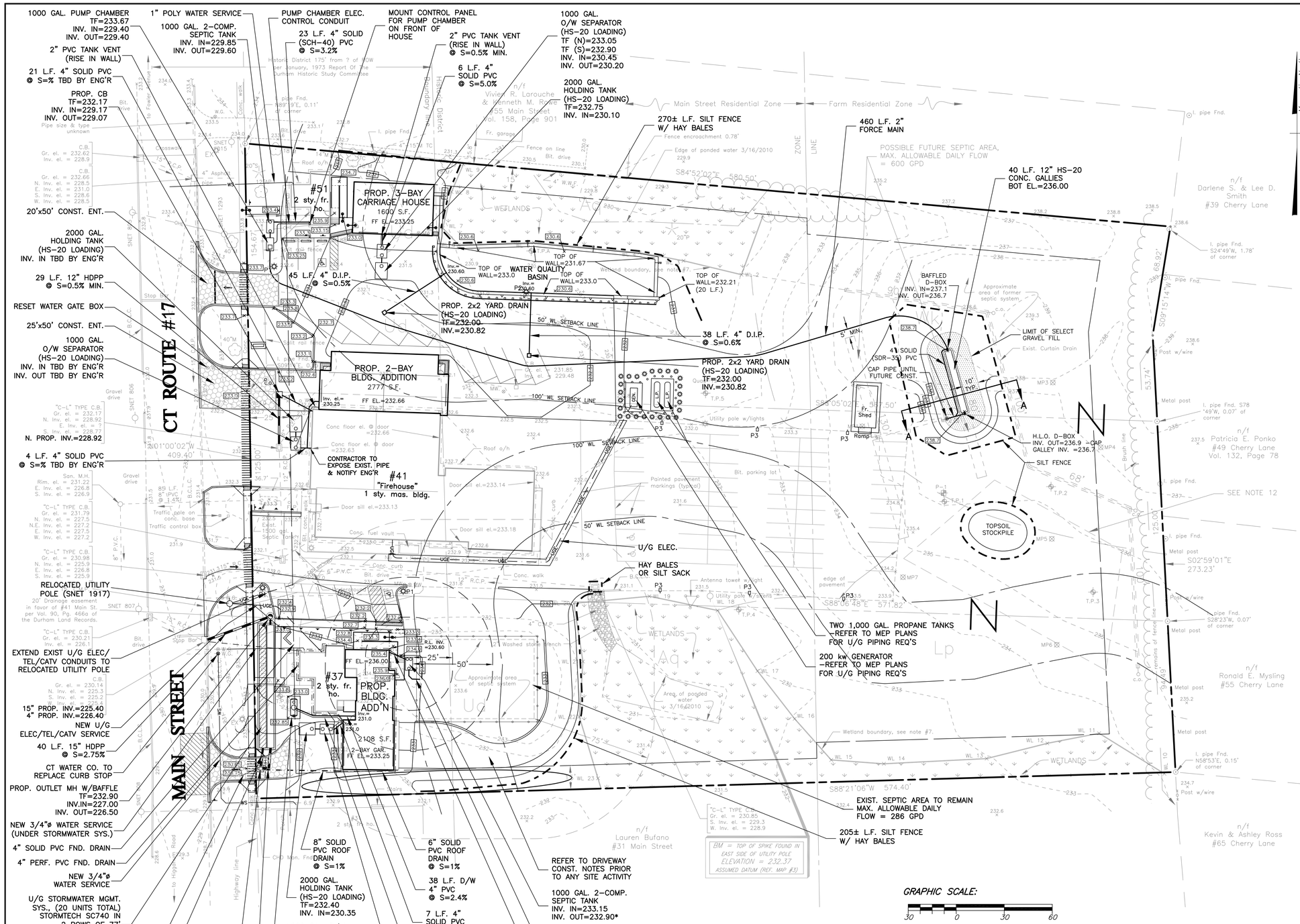
SITE PLAN

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

DURHAM, CONNECTICUT

Job No. 09–14
Scale: 1"=30'
Date: 12/7/15
Designed: D.W.S.
Drawn: K.D.K.
Sheet: C2

SEE SHEET C1 FOR LEGEND.



#37 MAIN STREET DRIVEWAY CONSTRUCTION NOTES

THE REAR DRIVEWAY AREA NEEDS TO BE CONSTRUCTED WITH GREAT CARE IN ORDER TO AVOID COMPACTING THE NATURALLY OCCURRING SOILS THAT AREA NEEDED TO DISPERSE THE SEPTIC SYSTEM EFFLUENT. WHEELED CONSTRUCTION VEHICLES ARE PROHIBITED FROM USING THE DRIVEWAY AREA UNTIL THE FULL DEPTH OF THE REQUIRED BASE MATERIAL HAS BEEN PLACED AND COMPACTED. ACCORDINGLY, STRICT CONFORMITY TO THE FOLLOWING SCHEDULE OF ACTIVITIES SHALL BE REQUIRED.

1. NOTIFY THE DESIGN ENGINEER A MINIMUM OF 48 HOURS IN ADVANCE OF ANY ACTIVITY.
2. PRIOR TO ANY SITE DISTURBANCE IN THE BACK YARD AREA, LOCATE THE ACTUAL LIMITS OF THE EXISTING LEACHING FIELDS AND INSTALL TEMPORARY CONSTRUCTION FENCE AS INDICATED ON THE DRAWING.
3. DESIGN ENGINEER AND/OR HEALTH DEPARTMENT INSPECTION AND SUPERVISION IS REQUIRED OF THE FOLLOWING TASKS.
4. STRIP (BOX OUT) APPROXIMATELY 15" OF EXISTING TOPSOIL AND SUBSOIL FROM WITHIN THE DRIVEWAY LIMITS, LOAD ONTO A TRUCK AND HAUL AWAY FROM THE PROJECT AREA.
5. LIGHTLY PROOF ROLL THE SUBGRADE WITH A SMALL STATIC ROLLER OR VIBRATORY PLATE COMPACTOR.
6. PLACE A 6" LIFT OF PROCESSED AGGREGATE ON THE PREPARED SUBGRADE AND COMPACT IT TO THE REQUIRED DENSITY WITH A SMALL STATIC ROLLER OR VIBRATORY PLATE COMPACTOR.
7. PLACE A SECOND 6" LIFT OF PROCESSED AGGREGATE AND COMPACT IT TO THE REQUIRED DENSITY WITH A SMALL STATIC ROLLER OR VIBRATORY PLATE COMPACTOR.
8. DRIVEWAY CONSTRUCTION SHALL START AT ONE END AND PROCEED IN APPROXIMATELY 25 FOOT LONG INCREMENTS.
9. REPEAT STEPS 4 – 7 UNTIL THE ENTIRE LENGTH OF THE DRIVEWAY HAS BEEN PREPARED.
10. UPON COMPLETION OF BUILDING CONSTRUCTION, TOP DRESS, FINE GRADE AND COMPACT THE SURFACE OF THE DRIVEWAY BASE MATERIAL WITH A SMALL STATIC ROLLER OR VIBRATORY PLATE COMPACTOR.
11. PAVE THE DRIVEWAY IN ACCORDANCE WITH THE SPECIFICATIONS, EXCEPT THAT THE USE OF VIBRATORY ROLLERS SHALL BE PROHIBITED.

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* CONTRACTOR TO VERIFY LEACHING FIELD ELEV. PRIOR TO INSTALLING SEPTIC TANK. NOTIFY ENG'R IF FIELDS ARE HIGHER THAN 232.75.

⊸ = FLUSH CONDITIONS

SEE SHEET C1 FOR LEGEND.

- - - - - 6" SOLID PVC
— — — 4" SOLID PVC
-·-·- 4" PERF. PVC

GRADING, UTILITY & EROSION CONTROL PLAN

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

DURHAM, CONNECTICUT

Job No. 09-14
Scale: 1"=30'
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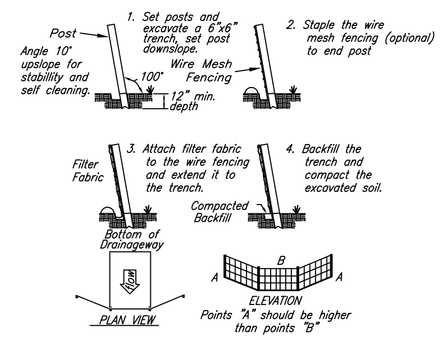
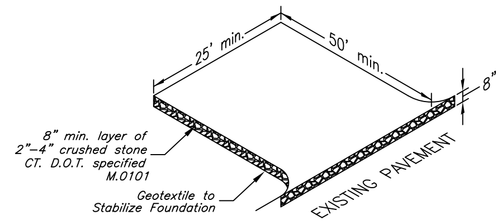


Source: U.S. Department of Agriculture, Soil Conservation Service, Storrs, Connecticut.

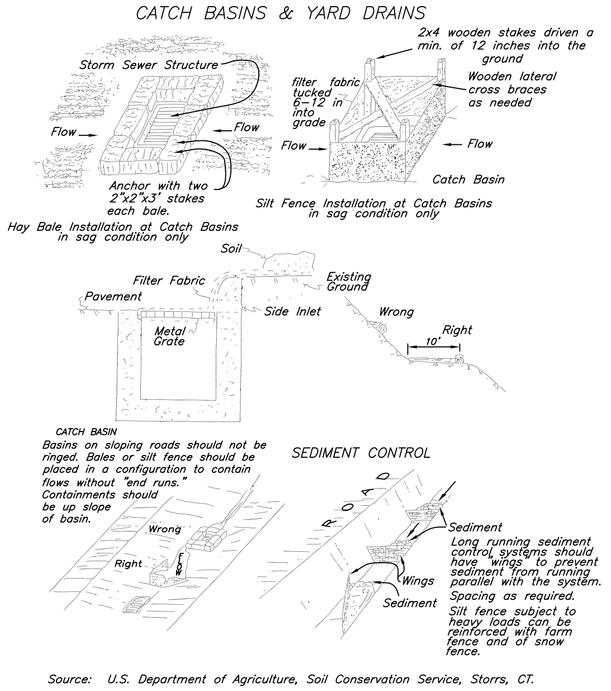
1 PLACEMENT AND CONSTRUCTION OF A SYNTHETIC FILTER BARRIER

N.T.S.



2 CONSTRUCTION ENTRANCE ANTI – TRACKING PAD

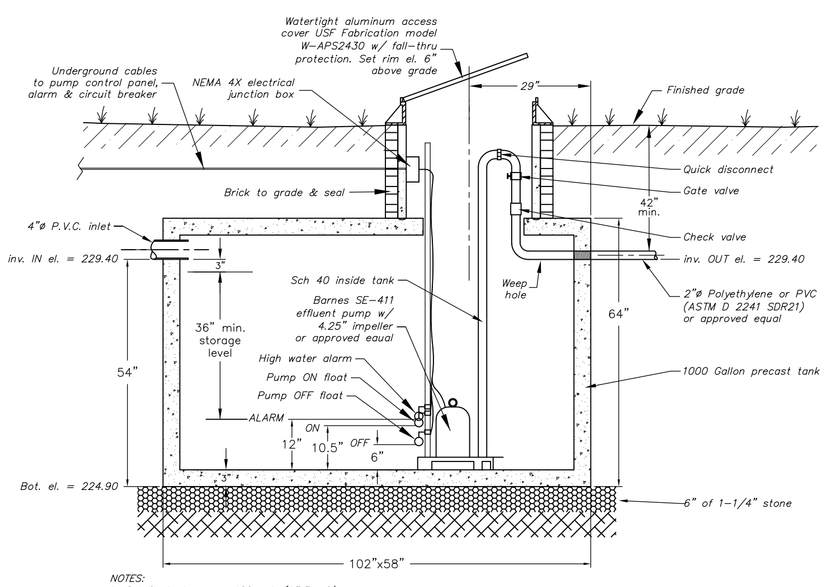
N.T.S.



Source: U.S. Department of Agriculture, Soil Conservation Service, Storrs, CT.

3 PLACEMENT OF CONTROL MEASURES AT CATCH BASINS & YARD DRAINS

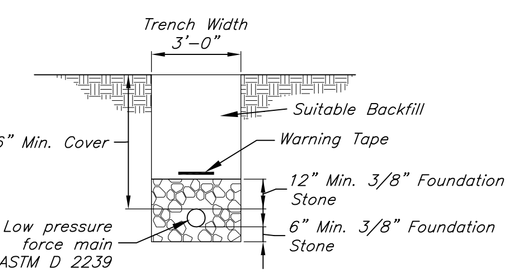
N.T.S.



NOTES:
1. Set floats to pump 100 gal. (13.3 c.f.).
2. Inside dimensions 8'-0"L x 4'-4"W x 4'-3" to inlet. Dimensions are based on CT Precast 1000 Gal. Res. Pump Chamber. Float heights may differ with other precasters. Confirm dimensions with Engineer.

1000 GALLON PUMP CHAMBER DETAIL

N.T.S.



TRENCH DETAIL TYPICAL LOW PRESSURE FORCE MAIN

N.T.S.

SOIL TESTING RESULTS – #41 MAIN ST.:

SOIL TESTING PERFORMED BY THE OFFICE OF DONALD W. SMITH, JR., P.E. CONSULTING ENGINEER, AND OBSERVED BY WILLIAM MILARDO R.S. OF THE DURHAM HEALTH DEPT.

TP #1 (12/18/09)

0"–12" TOPSOIL
12"–22" RED–BRN SILTY LOAM
22"–84" RED–BRN COMPACT SILTY HARDPAN

NO LEDGE / WATER @ 16" / MOTTLING @ 22"

TP #2 (12/18/09)

0"–10" TOPSOIL
10"–24" RED–BRN SILTY LOAM
24"–84" RED–BRN COMPACT SILTY HARDPAN

NO LEDGE / WATER @ 18" / MOTTLING @ 32"

TP #3 (12/18/09)

0"–10" TOPSOIL
10"–18" RED–BRN SILTY LOAM
18"–84" RED–BRN COMPACT SILTY HARDPAN

NO LEDGE / WATER @ 12 – 16" / MOTTLING @ 18"

TP #4 (12/18/09)

0"–4" TOPSOIL
4"–40" RED–BRN SILTY LOAM
40"–84" RED–BRN COMPACT SILTY HARDPAN

NO LEDGE / WATER @ 16" / NO MOTTLING

TP #5 (12/18/09)

0"–8" ORG–BRN SANDY FILL
8"–26" DK BRN TOPSOIL / WETLAND SOIL
26"–84" RED–BRN COMPACT, MOTTLED SILTY HARDPAN

NO LEDGE / WATER @ 24"(16" INTO ORIGINAL GROUND) / MOTTLING @ 26" (18" INTO ORIGINAL GROUND)

TP A (6/17/16)

0"–4" TOPSOIL
4"–28" GRANULAR FILL – PROCESSED AGGREGATE
28"–36" ORG. –BLK., MOTTLED SILTY LOAM
36"–60" GREY SILT/CLAY WETLAND SOIL

NO LEDGE / WATER / MOTTLING @ 28"

TP B (6/17/16)

0"–16" TOPSOIL
16"–40" RED–BRN SILTY LOAM
40"–84" RED–BRN COMPACT SILTY HARDPAN

NO LEDGE / NO WATER / MOTTLING @ 54"

Permeability Sample #1 @ 32"
Permeability Sample #2 @ 54"

PERCOLATION TEST: #1
DEPTH: 16"
DATE: 12/18/09

TIME	D.T.W.	INC. DROP	MIN./IN.
9:00	PRESOAK		
9:39	3 3/4"		
9:49	6 1/2"	2 3/4"	3.64
9:59	9"	2 1/2"	4
10:09	10 ?"	1 ?"	5.7
10:19	12 1/4"	1 1/2"	6.67
10:29	13 1/2"	1 1/4"	8
10:39	14 1/4"	3/4"	13.33

MINIMUM PERCOLATION RATE = 1" IN 10.1 TO 20.0 MIN.

SEPTIC SYSTEM CONSTRUCTION NOTES:

1. All methods and materials used in the construction of the SSDS indicated on this plan shall conform to the latest provisions of the CT Public Health Code Regulations and Technical Standards for Subsurface Sewage Disposal Systems.
2. The sewer pipe from the house to the septic tank shall be 4" diameter Schedule 40 PVC pipe or approved equal in conformance with the latest Health Code.
3. Solid PVC pipes and fittings shall conform to ASTM D–3034 SDR–35, perforated PVC pipes and fittings shall conform to ASTM D–3305 or in conformance with the latest Health Code.
4. Fields shall be staked prior to construction to prevent further compaction of the existing soil.
5. Construction equipment is to stay off the area of system before and after installation.
6. Existing topsoil and unsuitable fill materials are to be removed from system area prior to placing fill. Existing ground shall be scarified to a minimum depth of 6" prior to placing fill.
7. Fill in area of the septic system shall be clean, bank–run sand or gravel meeting the following criteria:
   a. The fill shall not contain any material larger than three (3) inches.
   b. Up to 45% of the dry weight of the representative sample may be retained on the #4 sieve (This is the gravel portion of the sample).
   c. The material that passes the #4 sieve is then reweighed and the sieve analysis started.
   d. The remaining sample shall meet the following wet sieve gradation criteria:

Sieve	% Passing
#4	100%
#10	70% – 100%
#40	10% – 50% (See note below)
#100	0% – 20%
#200	0% – 5%

   Note: Percent passing the #40 Sieve can be increased to no greater than 75% if the percent passing the 100% Sieve does not exceed 10% and the 200% does not exceed 5%.
8. Installer shall provide the Health Dept. and design engineer with a Gradation Test report on the fill material. The sample for the Gradation Test shall be taken from the material, which is brought to the site. A test report from "The Bank" is not sufficient
9. Fill shall be placed in 6–8" lifts benched into the existing slopes and compacted to 90% of the optimum density.
10. Septic system shall be installed after necessary fill has been placed and compacted.
11. Installer of septic system shall be responsible for conformance of fill to gradation and compaction requirements.
12. All structures shall be clearly marked after construction.
13. Septic system shall be protected from siltation and erosion during and after construction.
14. Septic system shall shed surface water after completion.
15. Fill shall not be installed on frozen or muddy ground.
16. System shall not be installed in frozen fill. Installer shall protect fill at all times.
17. After the select septic system fill has been placed and compacted, percolation tests shall be performed by the design engineer in the select fill material. These tests shall be performed in the presence of the local Health Department.
18. The location of the improvements shown hereon shall be staked by a licensed land surveyor prior to construction.
19. An As–built drawing of the completed system shall be prepared by a registered land surveyor, under the direction of the design engineer, prior to covering.
20. The contractor shall notify the design engineer at least 48 hrs. in advance of leaching area preparation and septic system installation in order to allow observation of the work.
21. Septic filter to be, Orenco Systems FT0444–36 or approved equal.

EROSION CONTROL NOTES:

1. Land disturbance shall be kept to the minimum necessary for construction operations.
2. All soil erosion and sediment control measures must be constructed in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control by the Connecticut Council on Soil and Water Conservation in cooperation with the Connecticut Department of Environmental Protection.
3. Erosion and sediment control measures shall be installed as depicted on this plan, and maintained in an effective condition throughout the construction period. Additional measures shall be installed as necessary and required.
4. All disturbed areas shall be permanently stabilized as soon as practicable. Seed all disturbed areas with a temporary seed mixture within 7 days after the suspension of grading work in disturbed areas where the suspension of work is expected to be more than 30 days but less than 1 year.
5. Andrew Meiman, Town of Durham, 30 Townhouse Road, Durham CT 06422, 860–349–3625, and the Site Contractor (to be determined) are assigned the responsibility for implementing the control measures of this plan. This responsibility includes the installation and maintenance of control measures, informing all parties engaged on the construction site of the requirements and objectives of this plan, and notifying the Planning and Zoning Commission of the transfer of this responsibility, and for conveying a copy of this plan if title to the property is transferred.

SEPTIC SYSTEM DESIGN CRITERIA

#51: FUTURE TOWN OFFICES ESTIMATED PEAK SEPTIC FLOW:

OFFICE USE: TWO FLOORS @ 550 SF = 1,100 SF
@ 200 SF/EMPLOYEE x 20 GPD/EMPLOYEE/DAY = 120 GPD.

CONFERENCE ROOM: 3 GPD/SEAT = 30 GPD.

TOTAL DESIGN FLOW = 150 GPD.

MINIMUM LEACHING SYSTEM SPREAD (MLSS):

MLSS = FF x PF x HF

PEAK DAILY FLOW: 150 GPD, FF = 150/300 = 0.5
PERCOLATION RATE: ACTUAL 1" IN 20.1 TO 30 MINUTES, PF = 2.0
RESTRICTIVE LAYER = 18" = SS
SLSA = 18" + 12" = 30"
RS = $\frac{30" + 18"}{2}$ = 24"
GROUND SLOPE: ACTUAL = 3–4%, HF = 42

MLSS = 0.5 x 2.0 x 42 = 42' REQUIRED
LENGTH PROVIDED = 42' –OK

#41 EXIST. FIRE STATION ESTIMATED PEAK SEPTIC FLOW:

USE	PERSONS/DAY	GPD/PERSON	FLOW (GPD)
FACTORY EMPLOYEES (WITH SHOWERS)	3	35	105
OFFICE EMPLOYEES	5	20	100
TRAINING/MEETING RM. (WITH FOOD SRVC.) OR	55	5 @ TABLE 7=7.5	413
TRAINING/MEETING RM. (NO FOOD SRVC.)	125	3.5	438
SENIOR ACTIVITIES	20	5	100
		TOTAL	743 GPD*

MINIMUM LEACHING SYSTEM SPREAD (MLSS):

MLSS = FF x PF x HF

PEAK DAILY FLOW: 743 GPD, FF = 743/300 = 2.47
PERCOLATION RATE: ACTUAL 1" IN 20.1 TO 30 MINUTES, PF = 2.0
RESTRICTIVE LAYER = 18" = SS
SLSA = 18" + 12" = 30"
RS = $\frac{30" + 18"}{2}$ = 24"
GROUND SLOPE: ACTUAL = 3–4%, HF = 42

MLSS = 2.47 x 2.0 x 42 = 207' REQUIRED
LENGTH PROVIDED = 168' –NOT OK*
MAX. CAPACITY PROVIDED (BASED ON MLSS) = 600 GPD*

*AT TIME OF FINAL SSDS DESIGN, THE DESIGN FLOW WILL NEED TO BE REDUCED OR FLOW EQUALIZATION TANKS INSTALLED.

#37 EMS FACILITY ESTIMATED PEAK SEPTIC FLOW:

USE	PERSONS/DAY	GPD/PERSON	FLOW (GPD)
OFFICE EMPLOYEES	5	20	100
RESIDENTIAL CAMP (BUNK ROOM/DAY ROOM)	3	50	150
TRAINING/MEETING ROOM	6	3.5	21
		TOTAL	271 GPD

MINIMUM LEACHING SYSTEM SPREAD (MLSS):

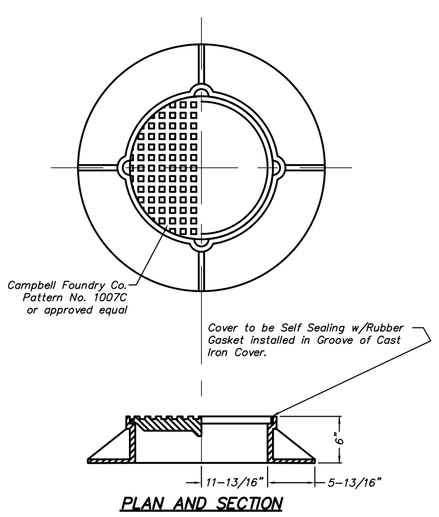
MLSS = FF x PF x HF

PEAK DAILY FLOW: 271 GPD, FF = 271/300 = 0.9
PERCOLATION RATE: ACTUAL 1" IN 20.1 TO 30 MINUTES, PF = 1.5
RESTRICTIVE LAYER = 18" = SS
SLSA = 18" + 18" = 36"
RS = $\frac{36" + 18"}{2}$ = 27"
GROUND SLOPE: ACTUAL = 1–2%, HF = 49

MLSS = 0.9 x 1.5 x 49 = 66' REQUIRED
LENGTH PROVIDED = 70' –OK

SYSTEM GENERAL NOTES:

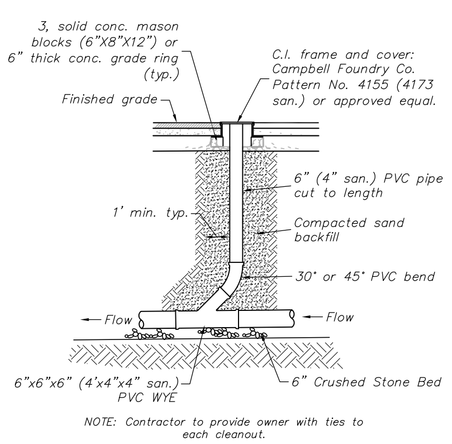
1. Water supplied by public water supply. Existing wells to be abandoned by licensed well driller.
2. No well within 75 feet of septic system.
3. No hot tubs, spas, garbage grinders, water systems or swimming pools shall be discharged into septic system area.
4. Design of system based on the noted soil test data. The installer of the system shall be responsible for notifying the engineer of additional field conditions, such as ledge, groundwater, bury holes, etc., discovered during construction. Such conditions may require system redesign.
5. #37 Main St. reference map: map entitled "Property of Austin M. Ackerman, Jr., Main St. Durham, Conn., Septic System Repair, (South of Firehouse)," Scale: As Noted, Date: May 13, 1985, Revised: 12/2/85, by Dean A. Thomasson, P.E., Durham, Connecticut.
6. #37 Main Street is served by an on–site subsurface sewage disposal system. #41 Main Street is served by an off–site SSDS that exists thru an unrecorded license agreement with the Durham Fair Association. #51 Main Street is proposed to be served by a new on–site subsurface sewage disposal system.



PLAN AND SECTION

5 STANDARD CAST IRON MANHOLE FRAME & COVER

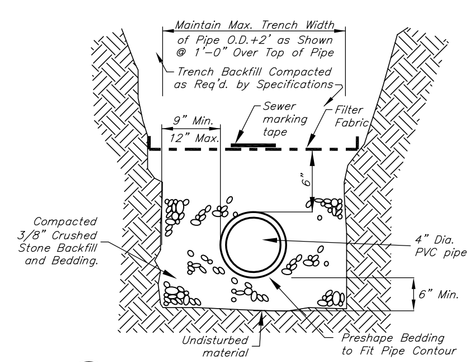
N.T.S.



NOTE: Contractor to provide owner with ties to each cleanout.

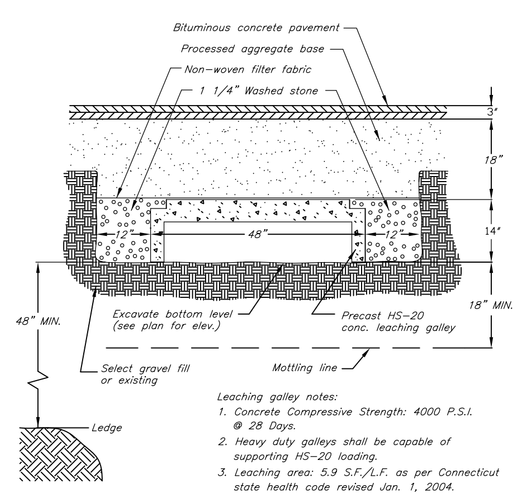
6 STORM & SAN. CLEANOUT DETAIL

N.T.S



7 TYPICAL SEWER TRENCH

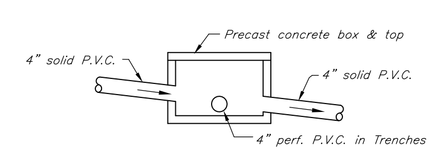
N.T.S.



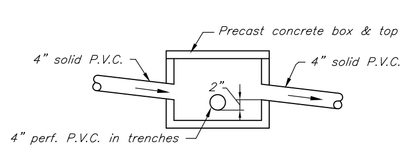
Leaching galley notes:
1. Concrete Compressive Strength: 4000 P.S.I. @ 28 Days.
2. Heavy duty galleys shall be capable of supporting HS–20 loading.
3. Leaching area: 5.9 S.F./L.F. as per Connecticut state health code revised Jan. 1, 2004.

12" HIGH, HS–20 LEACHING GALLEY DETAIL

N.T.S.



DISTRIBUTION BOX



DISTRIBUTION BOX H.L.O.

High level overflow

REVISIONS		
NO.	DESCRIPTION	DATE
1	Septic & drainage	6/23/16

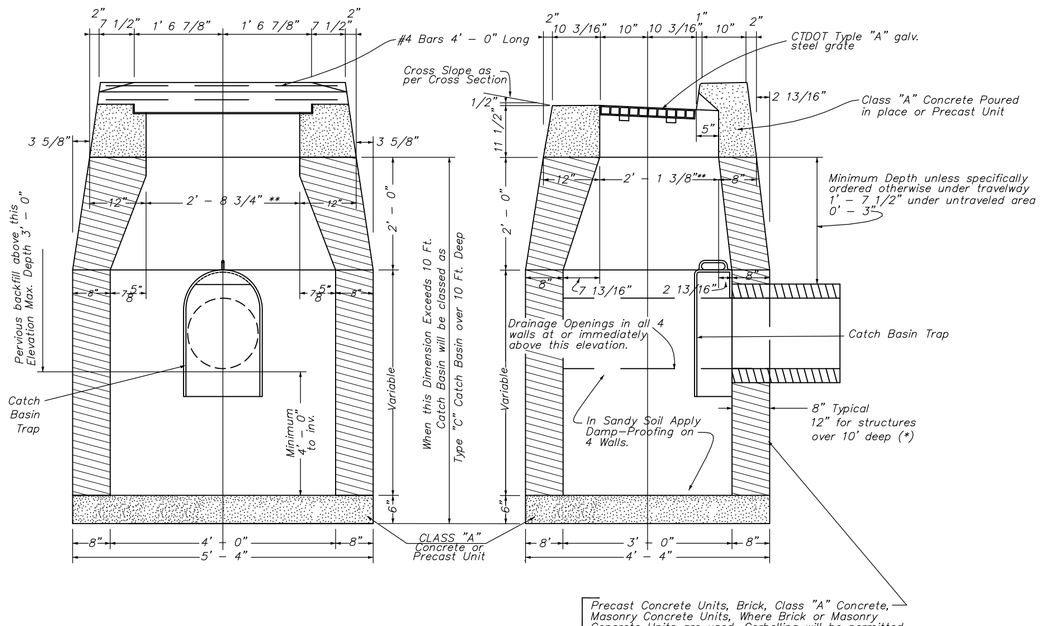
SILVER / PETRUCELLI + ASSOCIATES
Architects / Engineers / Interior Designers
3190 Whitney Avenue, Hamden, CT 06518-2340
Tel. 203 230 9007 Fax. 203 230 8247
silverpetrucelli.com

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

SEPTIC SYSTEM & EROSION CONTROL DETAILS

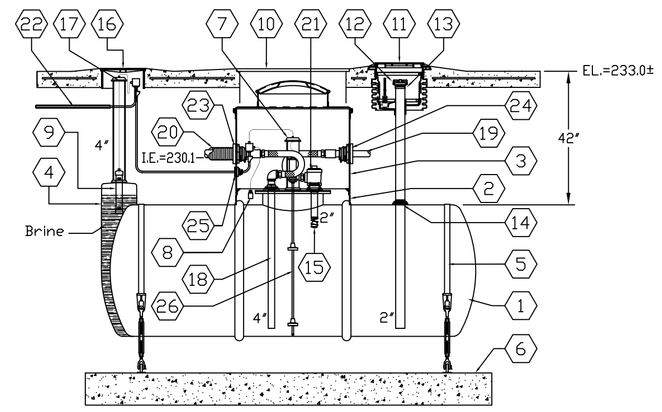
TOWN OF DURHAM
PUBLIC SAFETY COMPLEX
#37, #41 & #51 MAIN STREET
(CT ROUTE 17)
DURHAM, CONNECTICUT

Job No. 09–14
Scale: As Noted
Date: 12/7/15
Designed: D.W.S.
Drawn: K.D.K.
Sheet: C4



1 CATCH BASIN DETAIL

N.T.S.

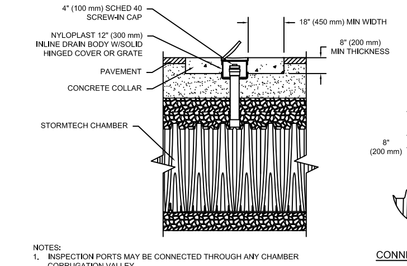


PARTS LIST			
No.	Manuf.	Model	Description
1	Xerxes		1000 gal. double-wall fiberglass chem waste tank, 4' dia. x 11'-7" long*
2	Xerxes		42" dia. x 6' tall attached collar
3	Xerxes		42" dia. watertight attached collar riser (piping sump)
4	Dnntec	K1-V, DEL8000II	Monitor kit w/printer; to include #7 probe & #26 float, RS-232 port, gal. display, local alarms
5			Fiberglass hold-down straps (2) w/Harding 3/4"x9' galv. jaw turnbuckles (4)
6			Set of two 12' conc. deadman hold-downs
7	Dnntec		MTG inventory probe
8	Dnntec	BX-LS	Piping sump leak sensor
9	Dnntec	BX-RES	Fiberglass reservoir sensor
10	Morrison	418LLC-3800	38" dia. manhole with composit lid, bolted
11	Fairfield	SCM-S/2	Five gal. pump-out manhole, H-20, stainless bucket
12	Evertite	20DCSS	2" stainless dust cap, pump-out
13	Evertite	20ASS	2" adapter x 2" female thread, stainless, pump-out
14	OEM	4603	4" x 2" double tapped bushing
15			Ball float
16	Morrison	418TM-1100AM	18" dia. interstitial monitor manhole
17	Dnntec	VC-1	Vented reservoir cap kit
18			4" PVC wastewater drain w/OEM 4609 6" x 4" double tapped bushing
19	Ameron	22854386	2" dia. single wall fiberglass vent pipe
20	Ameron	44464386	4" dia. LCX coaxial FRP pipe
21	OPW	233-4420	0"x2" vent valve extractor
22			1" conduit to building
23	OPW-FV	EBF-0400	4" flex entry bulkhead, drain
24	OPW-FV	EBF-0200F	2" flex entry bulkhead, vent
25	OPW-FV	EBF-0751	1" flex entry bulkhead, conduit
26	Dnntec	SSF-2	2" stainless steel product float

*Tank (Item #1) to include premium vinylester chemical lining, 22" dia. manway w/Four 4" & one 6" npt cover fittings, 4" dia. npt shell wall service fitting, and items #2 & 3 (42" collar & riser), with reservoir factory-filled w/brine.

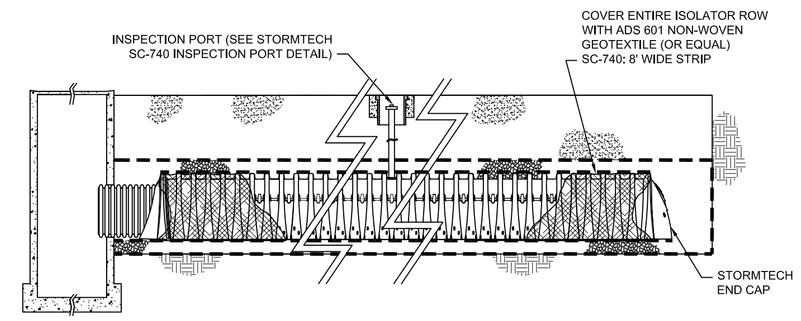
2 DECON. HOLDING TANK DETAIL

N.T.S.



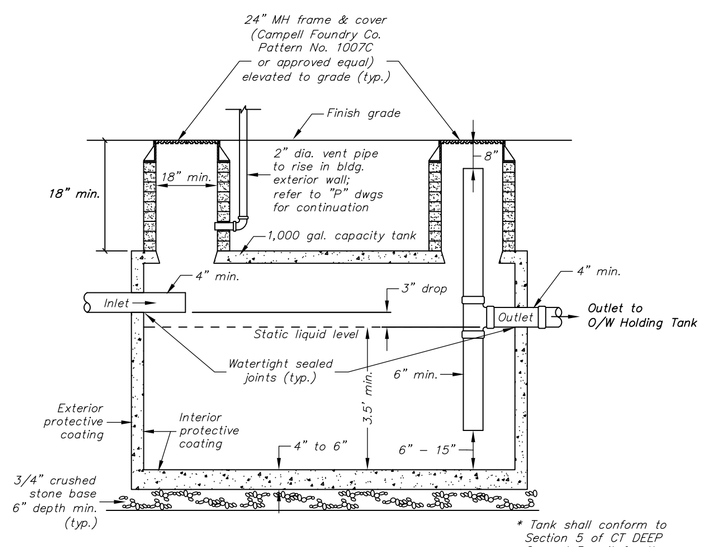
STORMTECH SC-740 INSPECTION PORT DETAIL

NTS



3 STORMTECH SC-740 ISOLATOR ROW PROFILE

N.T.S.



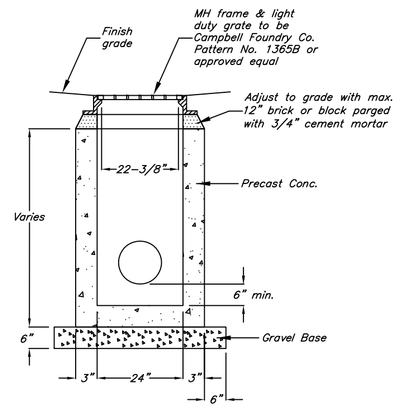
4 OIL/WATER SEPARATOR TANK*

(HS-20 LOADING REQUIRED)

N.T.S.

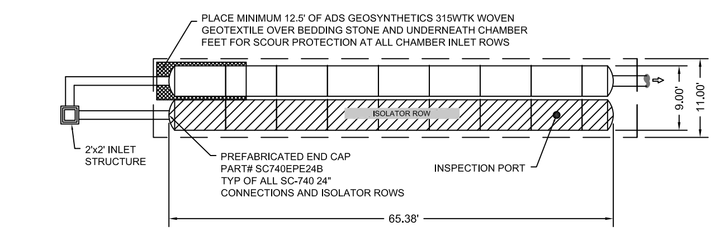
* Tank shall conform to Section 5 of CT DEEP General Permit for the Discharge of Vehicle Maintenance Wastewater, latest revision.

NOTE: the Owner is responsible for registering the oil/water separator system with the CT DEEP.



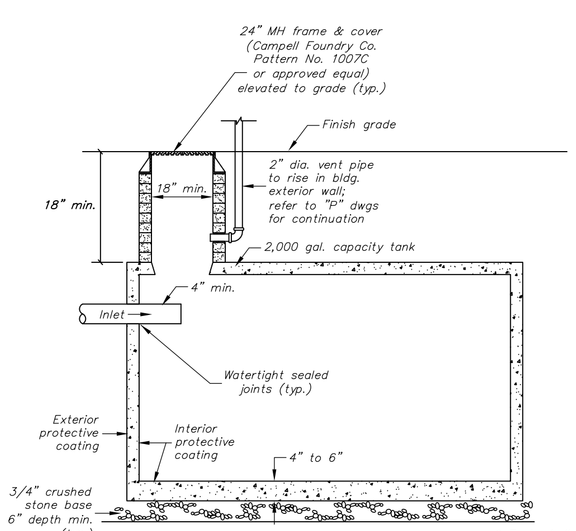
5 YARD DRAIN

N.T.S.



6 STORMTECH SC-740 U/G STORMWATER MGMT. SYSTEM

N.T.S.

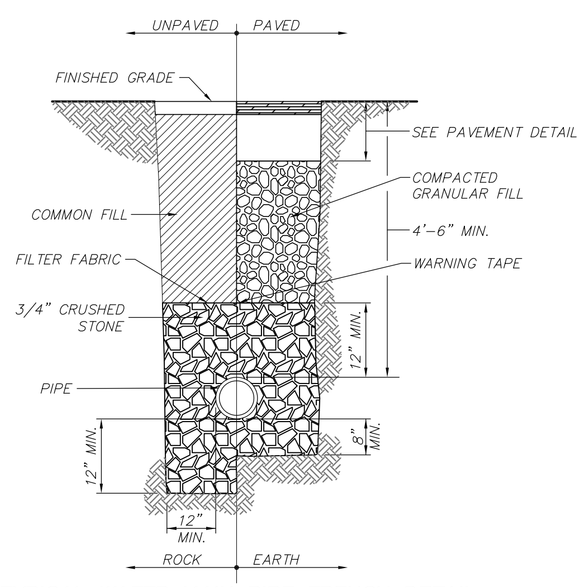


7 OIL/WATER HOLDING TANK*

(HS-20 LOADING REQUIRED)

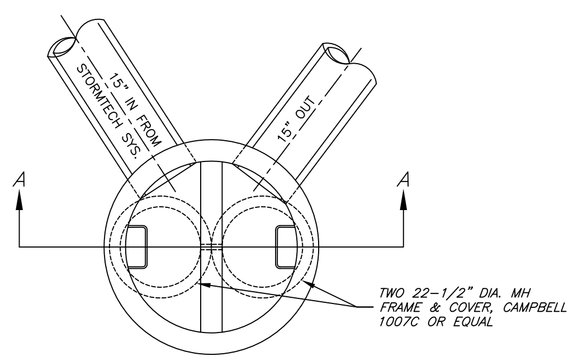
N.T.S.

* Tank shall conform to Section 5 of CT DEEP General Permit for the Discharge of Vehicle Maintenance Wastewater, latest revision.

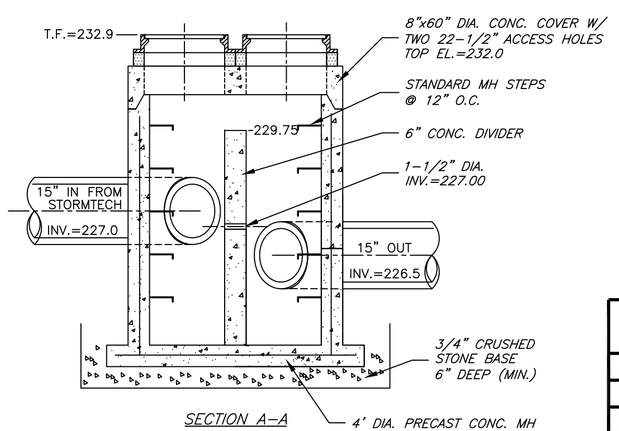


8 TYPICAL WATER MAIN PIPE TRENCH DETAIL

NOT TO SCALE

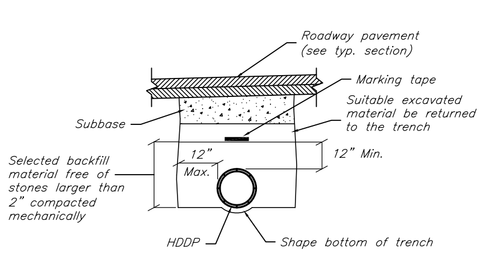


PLAN VIEW



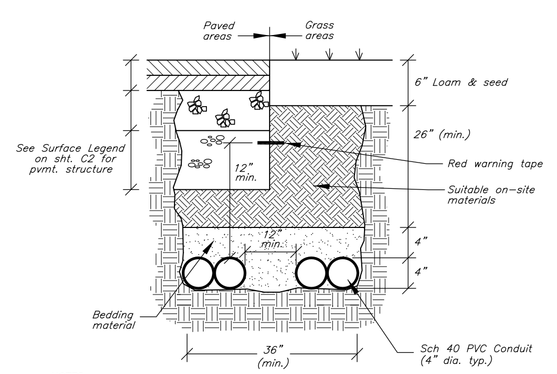
12 STORMWATER MGMT. SYS. OUTLET MH W/BAFFLE

N.T.S.



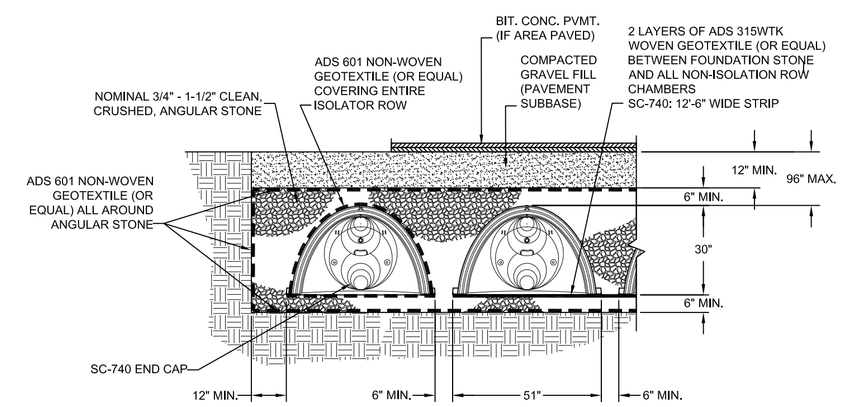
11 HDPP STORM DRAIN TRENCH

N.T.S.



9 PRIMARY & SECONDARY ELEC. SERVICE U/G CONDUIT BEDDING DETAIL

N.T.S.



10 STORMTECH SC-740 TYPICAL CROSS-SECTION

N.T.S.

STORMWATER CHAMBER SPECIFICATIONS:

1. CHAMBERS SHALL BE STORMTECH SC-740 OR APPROVED EQUAL.
2. CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN POLYPROPYLENE OR POLYETHYLENE RESINS TESTED USING ASTM STANDARDS.
3. CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12 ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCE.
6. ONLY CHAMBERS THAT ARE APPROVED BY THE ENGINEER WILL BE ALLOWED. THE CONTRACTOR SHALL SUBMIT (3 SETS) OF THE FOLLOWING TO THE ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
   a. A STRUCTURAL EVALUATION BY A REGISTERED STRUCTURAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12 ARE MET. THE 50-YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2418-05 MUST BE USED AS A PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
7. CHAMBERS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.
8. ALL DESIGN SPECIFICATIONS FOR CHAMBERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S LATEST DESIGN MANUAL.
9. THE INSTALLATION OF CHAMBERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S LATEST INSTALLATION INSTRUCTIONS.

STORMTECH GENERAL NOTES:

1. STORMTECH REQUIRES INSTALLING CONTRACTORS TO USE AND UNDERSTAND STORMTECH'S LATEST INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING SYSTEM INSTALLATION.
2. STORMTECH TECHNICAL SERVICES DEPARTMENT OFFERS INSTALLATION CONSULTATIONS TO INSTALLING CONTRACTORS. CONTACT OUR TECHNICAL SERVICES REPRESENTATIVE AT LEAST 30 DAYS PRIOR TO SYSTEM INSTALLATION TO ARRANGE A PRE-INSTALLATION CONSULTATION. OUR REPRESENTATIVES CAN THEN ANSWER QUESTIONS OR ADDRESS COMMENTS ON THE STORMTECH CHAMBER SYSTEM AND INFORM THE INSTALLING CONTRACTOR OF THE MINIMUM INSTALLATION REQUIREMENTS BEFORE BEGINNING THE SYSTEM'S CONSTRUCTION. CALL **1-888-892-2694** TO SPEAK TO A TECHNICAL SERVICES REPRESENTATIVE OR VISIT **WWW. STORMTECH.COM** TO RECEIVE A COPY OF OUR INSTALLATION INSTRUCTIONS.
3. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE DESIGN ENGINEER.
4. AASHTO M288 CLASS 2 NON-WOVEN GEOTEXTILE ADS 601 OR EQUAL (FILTER FABRIC) MUST BE USED AS INDICATED IN THE DETAILS.
5. STONE PLACEMENT BETWEEN CHAMBERS ROWS AND AROUND PERIMETER MUST FOLLOW INSTRUCTIONS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
6. BACKFILLING OVER THE CHAMBERS MUST FOLLOW REQUIREMENTS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
7. THE CONTRACTOR MUST REFER TO STORMTECH'S INSTALLATION INSTRUCTIONS FOR A TABLE OF ACCEPTABLE VEHICLE LOADS AT VARIOUS DEPTHS OF COVER. THIS INFORMATION IS ALSO AVAILABLE AT STORMTECH'S WEBSITE: **WWW.STORMTECH.COM**. THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING VEHICLES THAT EXCEED STORMTECH'S REQUIREMENTS FROM TRAVELING ACROSS OR PARKING OVER THE STORMWATER SYSTEM. TEMPORARY FENCING, WARNING TAPE AND APPROPRIATELY LOCATED SIGNS ARE COMMONLY USED TO PREVENT UNAUTHORIZED VEHICLES FROM ENTERING SENSITIVE CONSTRUCTION AREAS.
8. THE CONTRACTOR MUST APPLY EROSION AND SEDIMENT CONTROL MEASURES TO PROTECT THE STORMWATER SYSTEM DURING ALL PHASES OF SITE CONSTRUCTION PER LOCAL CODES AND DESIGN ENGINEER'S SPECIFICATIONS.

REVISIONS		
NO.	DESCRIPTION	DATE
1	Septic & drainage	6/23/16

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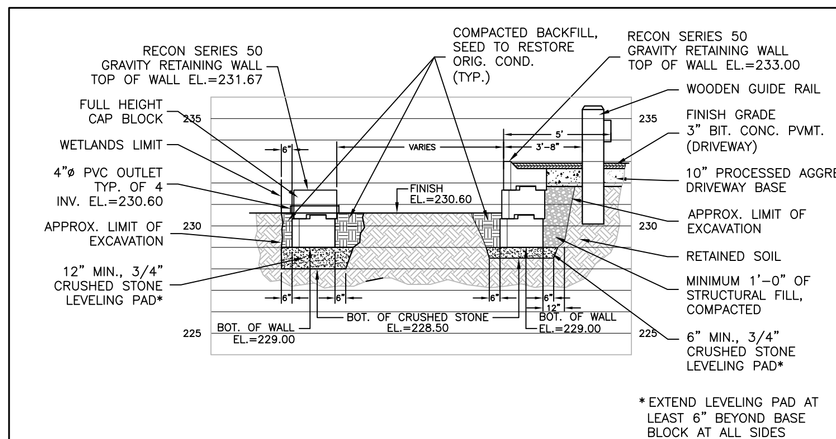
Tel. 203-888-4904 Fax 203-881-3434 dwsjrpe@sbcglobal.net

STORM & UTILITY DETAILS

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

Job No. 09-14
Scale: As Noted
Date: 12/7/15
Designed: D.W.S.
Drawn: K.D.K.
Sheet: C5

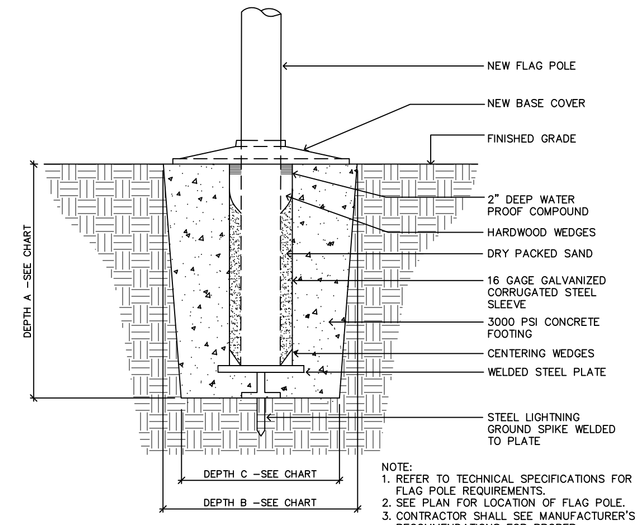


1. This section is provided to display typical wall construction. Wall geometry, unit type, and placement may vary in accordance with the site plan.
2. Wall shown is designed as a gravity wall. Use of geogrid is not necessary.
3. Allowable bearing capacity of foundation soils shall be no less than 4000 psf. Preparation of foundation subgrade should be reviewed and approved by the design engineer.
4. Heavy equipment should not be utilized within 3 feet of the back of the wall.
5. Refer to RECON "Design and Construction Manual" for additional details on RECON wall products and their use.

TYPICAL CROSS-SECTION

1 MODULAR BLOCK RETAINING WALLS

SCALE: 1 INCH = 5 FEET

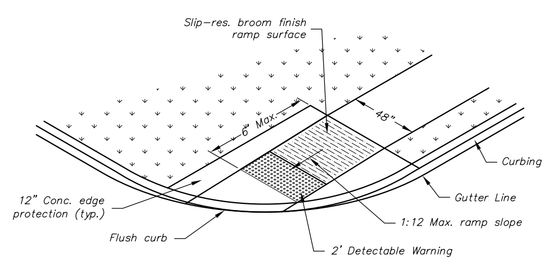


NOTE:
1. REFER TO TECHNICAL SPECIFICATIONS FOR FLAG POLE REQUIREMENTS.
2. SEE PLAN FOR LOCATION OF FLAG POLE.
3. CONTRACTOR SHALL SEE MANUFACTURER'S RECOMMENDATIONS FOR PROPER INSTALLATION OF FLAG POLE.

POLE HEIGHT	DEPTH A	DEPTH B	DEPTH C
20'	3'-6"	30"	24"
25'	3'-6"	30"	24"
30'	3'-6"	30"	24"
35'	4'-0"	36"	30"
40'	4'-6"	42"	36"
45'	5'-0"	48"	42"
50'	5'-6"	48"	42"
60'	6'-10"	48"	42"
70'	8'-0'	60"	48"
80'	9'-0"	60"	48"

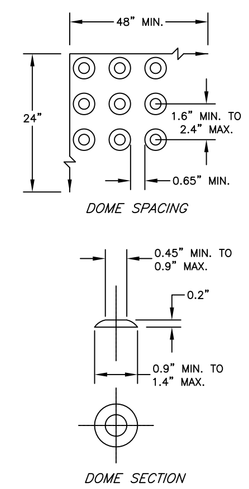
3 FLAG POLE FOOTING

N.T.S.



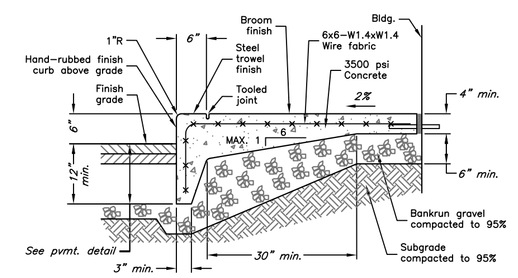
5 DIAGONAL SIDEWALK FLUSH CURB & RAMP

N.T.S.



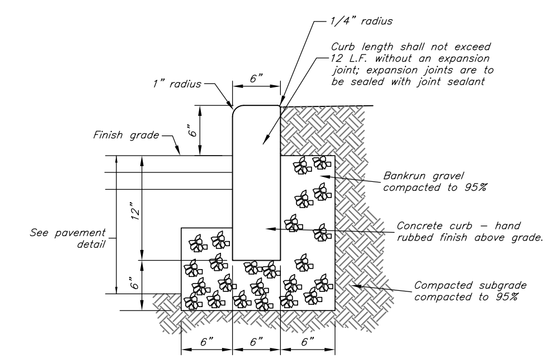
6 DETECTABLE WARNING AREA

N.T.S.



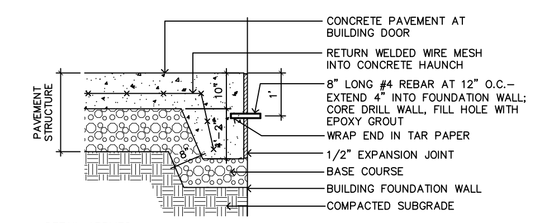
7 CONCRETE WALK W/INTEGRAL CURB

N.T.S.



8 CONCRETE CURB

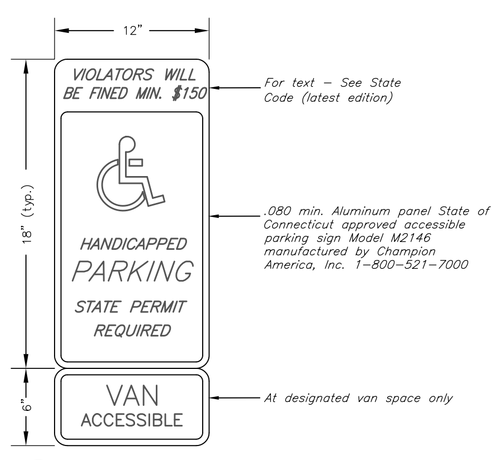
N.T.S.



DETAIL APPLIES WHEREVER CONCRETE PAVEMENTS ARE ADJACENT TO BUILDING ENTRANCES.

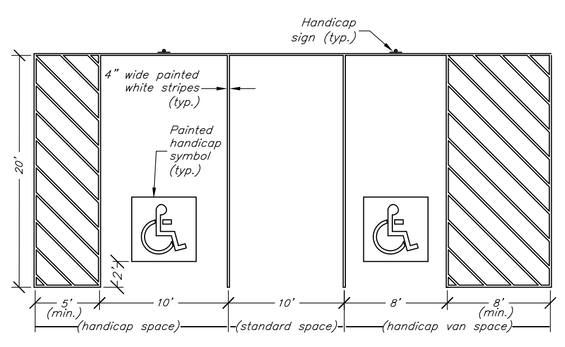
9 PINNED CONCRETE PAVEMENT AT BUILDING DOOR

N.T.S.



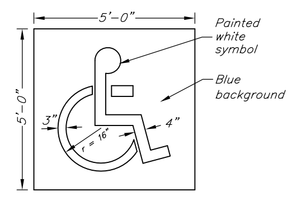
10 HANDICAP PARKING SIGN

N.T.S.



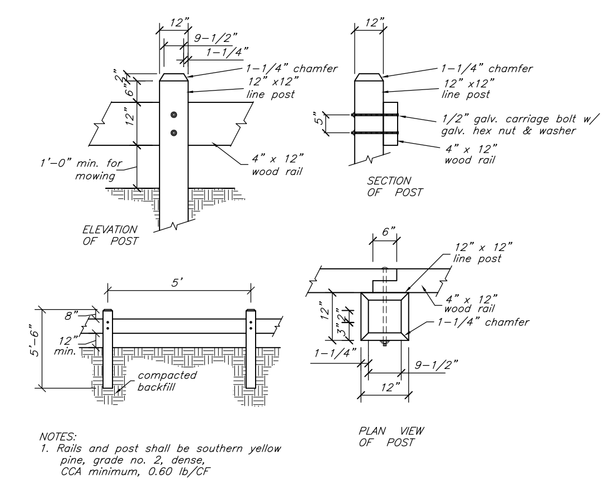
11 TYPICAL HANDICAP PARKING SPACE PAVEMENT MARKING

N.T.S.



12 STANDARD HANDICAP SYMBOL PAVEMENT MARKING

N.T.S.



NOTES:
1. Rails and post shall be southern yellow pine, grade no. 2, dense, CCA minimum, 0.60 lb/CF

15 WOODEN GUIDE RAIL

N.T.S.

SOIL STABILIZATION MEASURES:

1. All disturbed areas are to be provided with at least 4" of topsoil before final seeding.

2. Permanent vegetation is to be seeded or sodded on all exposed areas within ten (10) days after final grading. Mulching as necessary for seed protection and establishment. Lime and fertilize before permanent seeding.

3. Permanent vegetation:

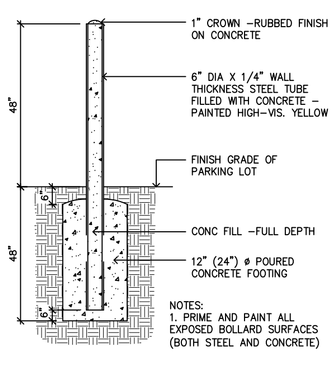
A. Materials specifications for woodland and wetland areas:

Seed: Permanent Vegetation - Lawn (Application Rate = 1.5 lbs./1000 s.f.)

Common Name	Percent
Perennial Ryegrass	45
Kentucky Bluegrass	45
Creeping Red Fescue	7.5
Insert Materials	2.5
	100%

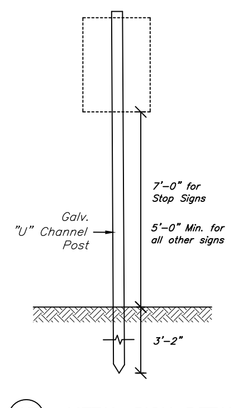
Permanent Vegetation - Wetlands (Application Rate = 1 lb./2500 s.f.)

Common Name	Percent
Fox Sedge	30
Fringed Sedge	22
Canada Manna Grass	10
Chufa	10
Soft Rush	5
Bearded Sedge	4
Lurid Sedge	4
Woolgrass	3
Boneset	3
Hope Sedge	3
Blue Vervain	2
Green Bulrush	2
Joe-pye Weed	2
	100%



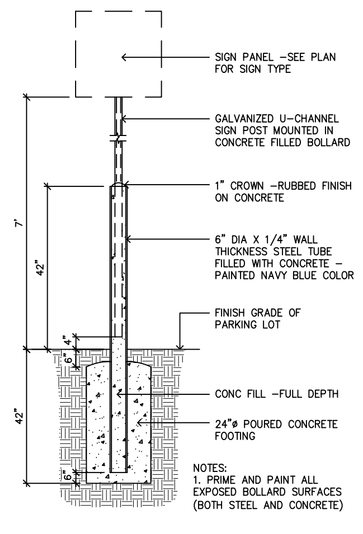
16 STEEL BOLLARD

N.T.S.



17 METAL SIGN DETAIL

N.T.S.



18 SIGN MOUNTED IN STEEL BOLLARD

N.T.S.

REVISIONS		
NO.	DESCRIPTION	DATE
1	Septic & drainage	6/23/16

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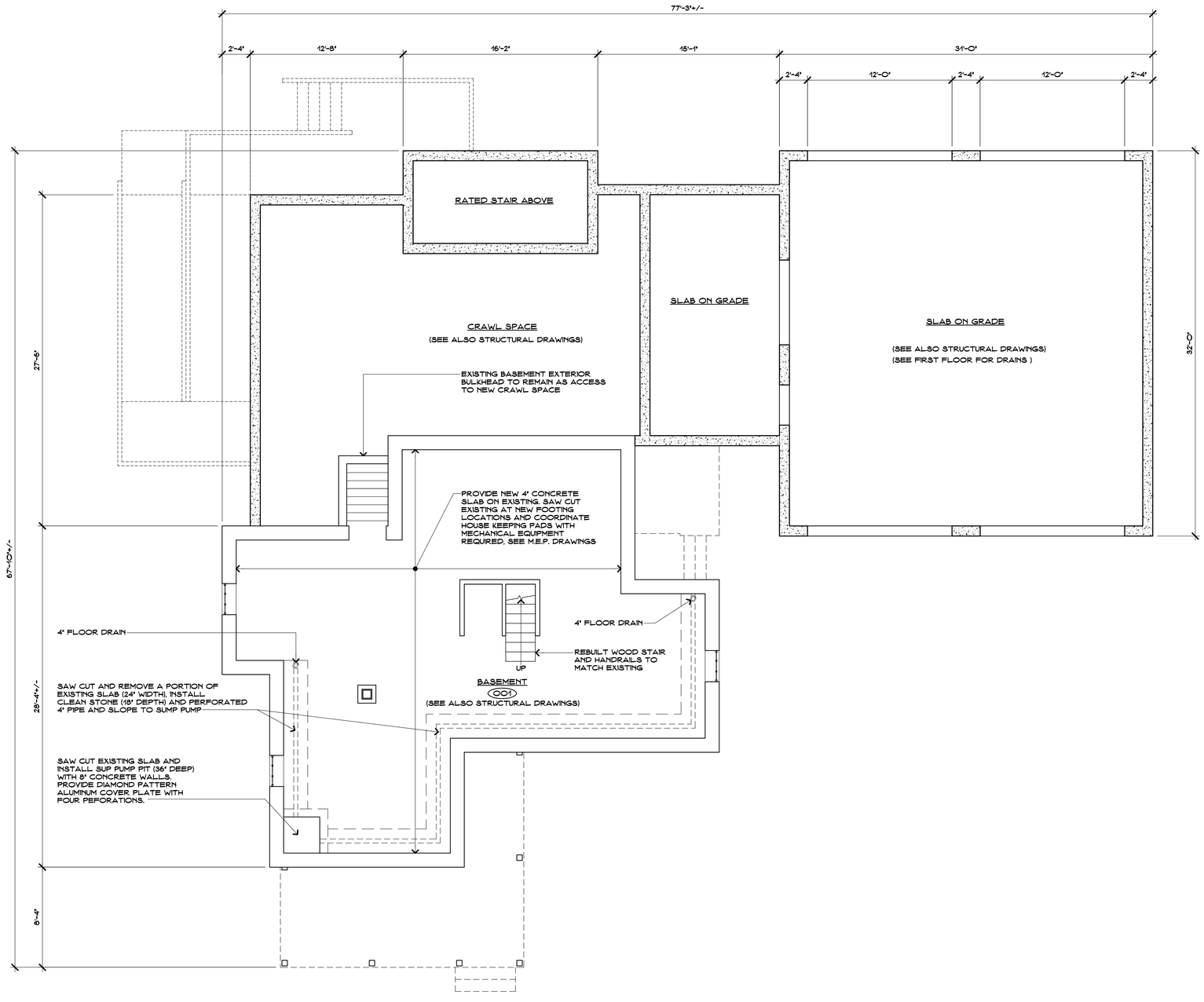
Tel. 203-888-4904 Fax 203-881-3434 dwsjrpe@sbcglobal.net

GENERAL DETAILS

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

Job No. 09-14
Scale: As Noted
Date: 12/7/15
Designed: D.W.S.
Drawn: K.D.K.
Sheet: C6



BASEMENT/FOUNDATION FLOOR PLAN

SCALE: 1/4" = 1'-0"

1 / A03

LEGEND:

- EXISTING WALLS TO REMAIN
- NEW WALLS
- NEW CONCRETE WALLS
- NEW PLUMBING FIXTURES, SEE PLUMBING DRAWINGS
- NEW WINDOW

NOTE:
SEE ALSO STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR ADDITIONAL WORK REQUIRED.

NORTH

Project Title:
Renovation and Addition to
37 & 51 Main Street
Durham, Connecticut 06422

SILVER / PETRUCELLI + ASSOCIATES
Architects / Engineers / Interior Designers
3190 Whitney Avenue, Hamden, CT 06518
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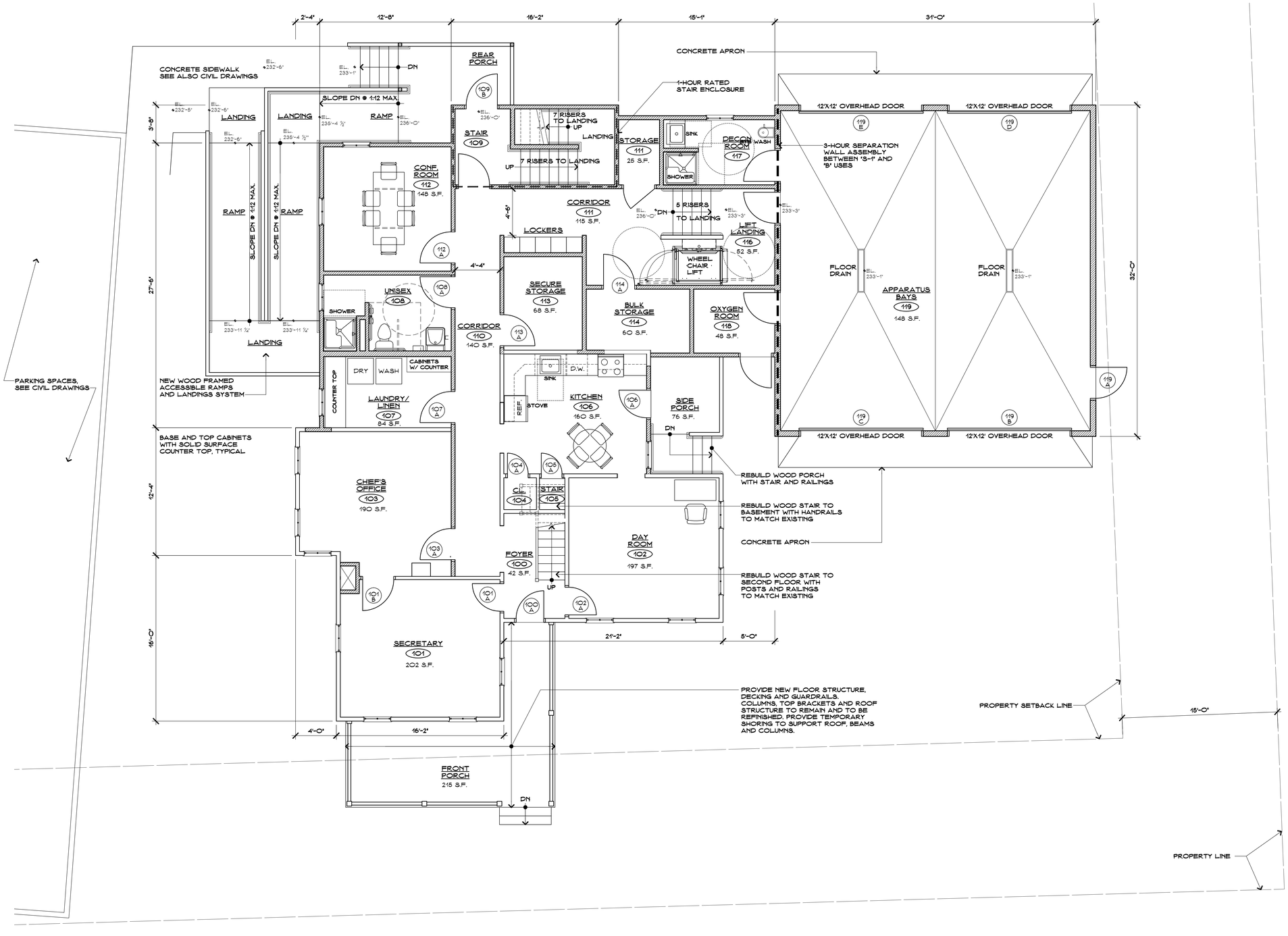
Revision:	Description:	Date:	Revised By:

Drawing Title:
BASEMENT/
FOUNDATION PLAN
37 MAIN STREET

Date: MARCH 23, 2015
Scale: 1/4" = 1'-0"
Drawn By: MJC
SPA Project Number: 14.131

Drawing Number:
A03.1
REVISED 4-3-15



FIRST FLOOR PLAN

SCALE: 1/4" = 1'-0"

1 / A04

NORTH

LEGEND:

- EXISTING WALLS TO REMAIN
- NEW WALLS
- NEW CONCRETE WALLS
- NEW PLUMBING FIXTURES, SEE PLUMBING DRAWINGS
- NEW WINDOW

NOTE:
SEE ALSO STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR ADDITIONAL WORK REQUIRED.

GENERAL NOTES:

1. ALL NEW AND EXISTING FLOORS SHALL RECEIVE NEW PLYWOOD SUBFLOOR AND FINISH FLOOR.
2. ALL EXTERIOR WALLS, FIRST FLOOR JOISTS AND ATTIC JOISTS SHALL BE INFILLED WITH BATT INSULATION.
3. ALL EXTERIOR AND INTERIOR WALLS SHALL RECEIVE GYPSUM WALL BOARD, PAINTED.
4. ROOMS: 108, 117, 206 AND 207 SHALL RECEIVE CERAMIC TILE FLOORING AND WAINSCOTING ON WALLS.
5. ROOMS: 106, 107, 113, 114 AND 118 SHALL RECEIVE LINOLEUM FLOORING.
6. APPARATUS BAY ROOM 119 SHALL RECEIVE APOXY FLOOR PAINT.
7. ALL OTHER ROOMS: SHALL RECEIVE HARDWOOD FLOORING WITH CLEAR COAT.

Project Title:
Renovation and Addition to
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Durham, Connecticut 06422

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Revision:	Description:	Date:	Revised By:

Drawing Title:
1st FLOOR PLAN
37 MAIN STREET

Date: MARCH 23, 2015
Scale: 1/4" = 1'-0"
Drawn By: MUC
SPA Project Number: 14.131

Drawing Number:
A04.1
REVISED 4-3-15

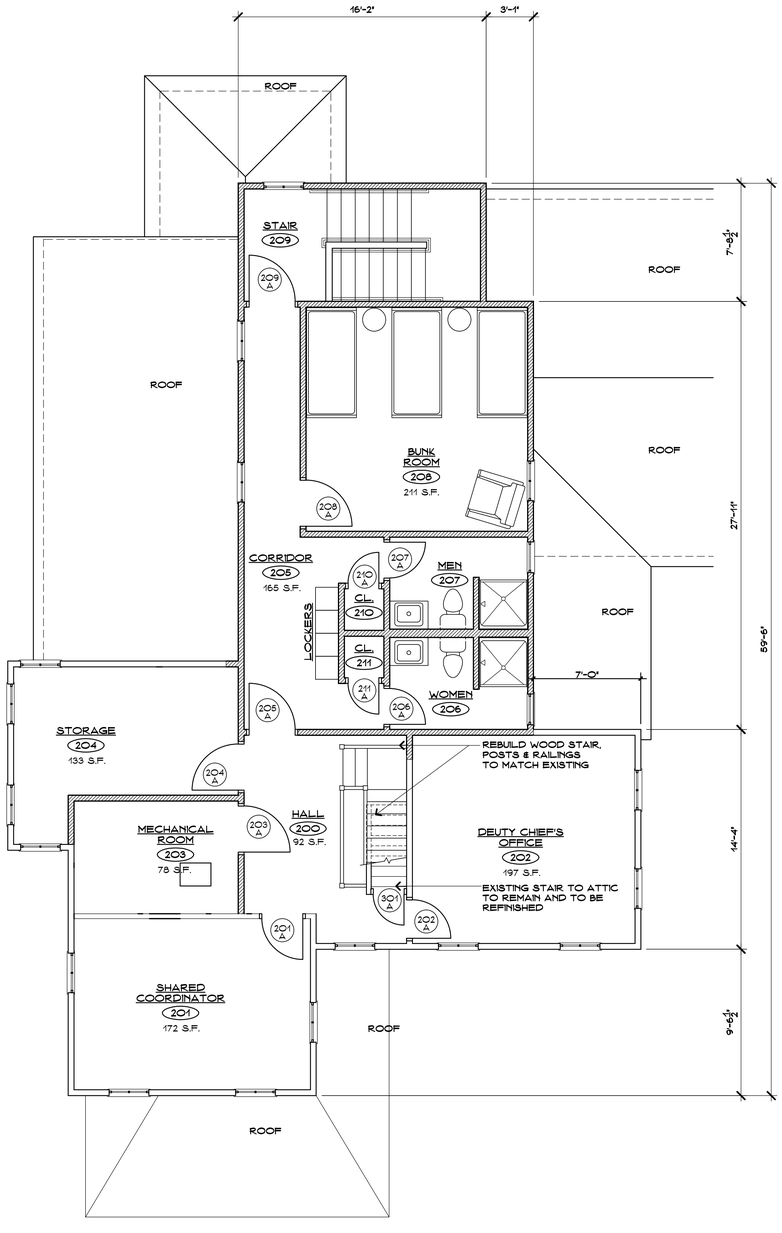
GENERAL NOTES:

1. ALL NEW AND EXISTING FLOORS SHALL RECEIVE NEW PLYWOOD SUBFLOOR AND FINISH FLOOR.
2. ALL EXTERIOR WALLS, FIRST FLOOR JOISTS AND ATTIC JOISTS SHALL BE INFILLED WITH BATT INSULATION.
3. ALL EXTERIOR AND INTERIOR WALLS SHALL RECEIVE GYPSUM WALL BOARD, PAINTED.
4. ROOMS: 108, 117, 206 AND 207 SHALL RECEIVE CERAMIC TILE FLOORING AND WAINSCOTING ON WALLS.
5. ROOMS: 106, 107, 113, 114 AND 118 SHALL RECEIVE LINOLEUM FLOORING.
6. APPARATUS BAY ROOM 119 SHALL RECEIVE APOXY FLOOR PAINT.
7. ALL OTHER ROOMS: SHALL RECEIVE HARDWOOD FLOORING WITH CLEAR COAT.

LEGEND:

- EXISTING WALLS TO REMAIN
- NEW WALLS
- NEW CONCRETE WALLS
- NEW PLUMBING FIXTURES, SEE PLUMBING DRAWINGS
- NEW WINDOW

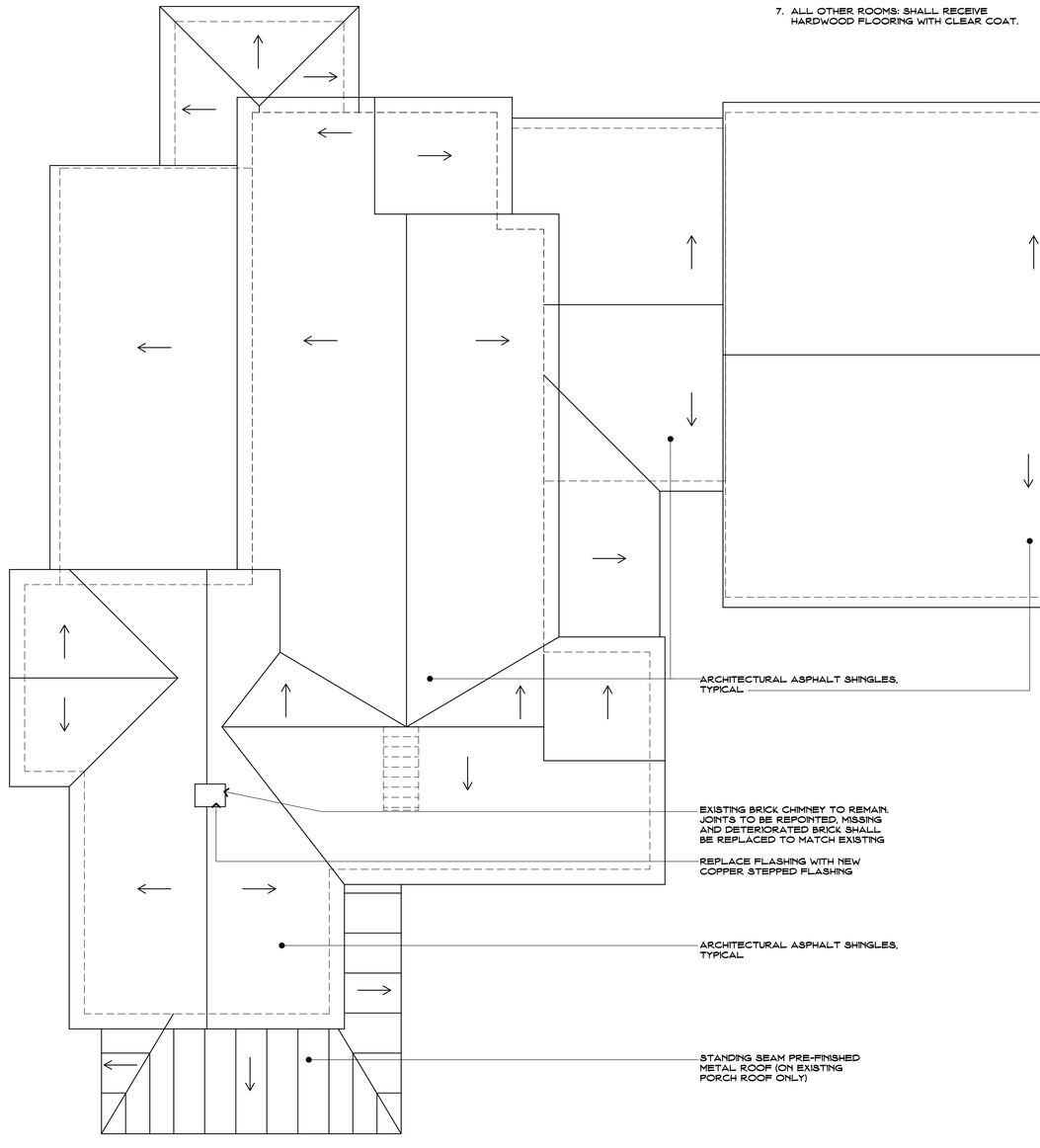
NOTE:
SEE ALSO STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR ADDITIONAL WORK REQUIRED.



SECOND FLOOR PLAN

SCALE: 1/4" = 1'-0"

1 / A05



ROOF PLAN

SCALE: 1/4" = 1'-0"

2 / A05

NORTH

Project Title:

Renovation and Addition to

37 & 51 Main Street

Durham, Connecticut 06422

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Revision:	Description:	Date:	Revised By:

Drawing Title:

2nd FLOOR AND ROOF PLANS 37 MAIN STREET

Date: MARCH 23, 2015

Scale: 1/4" = 1'-0"

Drawn By: MUC

SPA Project Number: 14.131

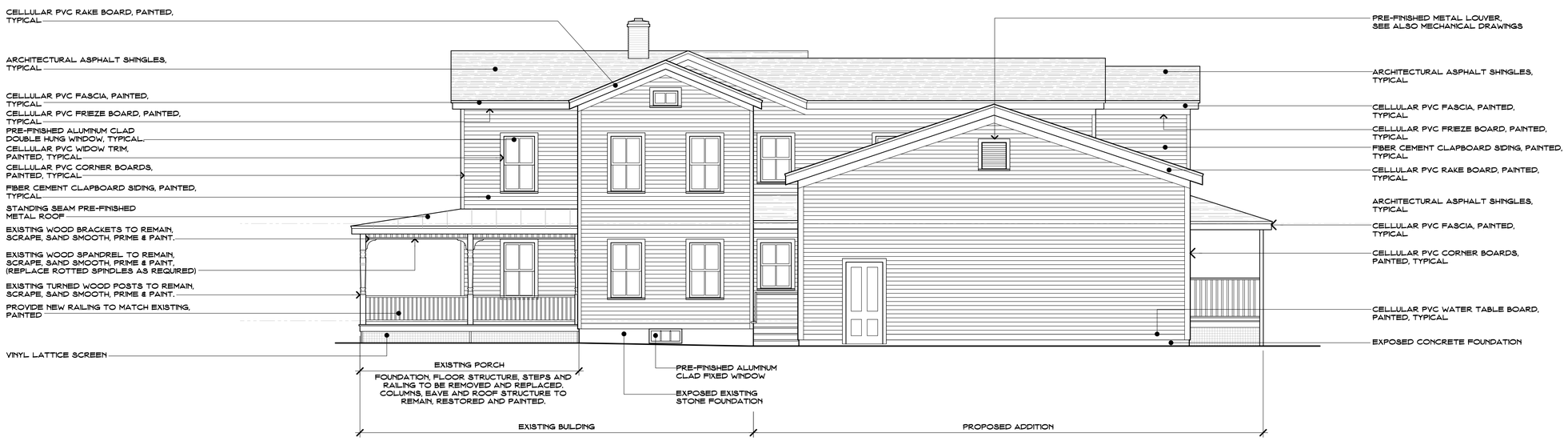
Drawing Number: A05.1

REVISED 4-3-15

WEST ELEVATION (FRONT)

SCALE: 1/4" = 1'-0"

1 / A06



SOUTH ELEVATION

SCALE: 1/4" = 1'-0"

2 / A06

Project Title:

Renovation and Addition to

37 & 51 Main Street

Durham, Connecticut 06422

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Revision:	Description:	Date:	Revised By:

Drawing Title:

EXTERIOR ELEVATIONS
37 MAIN STREET

Date: MARCH 23, 2015

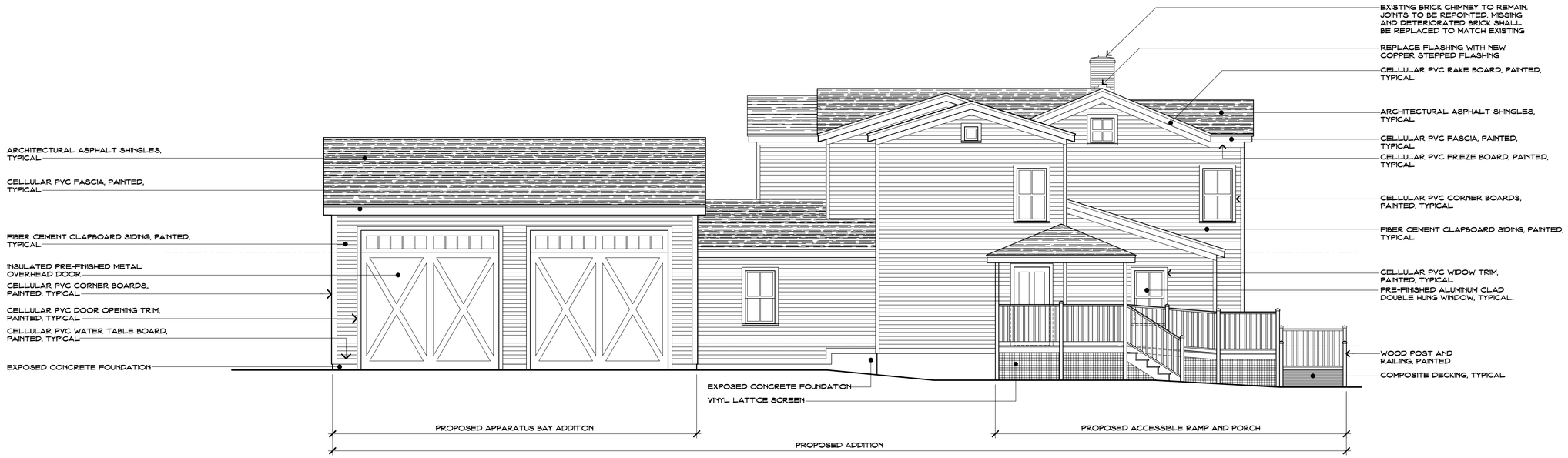
Scale: 1/4" = 1'-0"

Drawn By: MUC

SPA Project Number: 14.131

Drawing Number: A06.1

REVISED 4-3-15



EAST ELEVATION

SCALE: 1/4" = 1'-0"

1 / A07

NORTH ELEVATION

SCALE: 1/4" = 1'-0"

2 / A07

Project Title:

Renovation and Addition to

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Durham, Connecticut 06422

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Revision:	Description:	Date:	Revised By:

Drawing Title:

EXTERIOR ELEVATIONS
37 MAIN STREET

Date: MARCH 23, 2015

Scale: 1/4" = 1'-0"

Drawn By: MUC

SPA Project Number: 14.131

Drawing Number: A07.1

REVISED 4-3-15

LEGEND:

EXISTING WALLS TO REMAIN

NEW WALLS

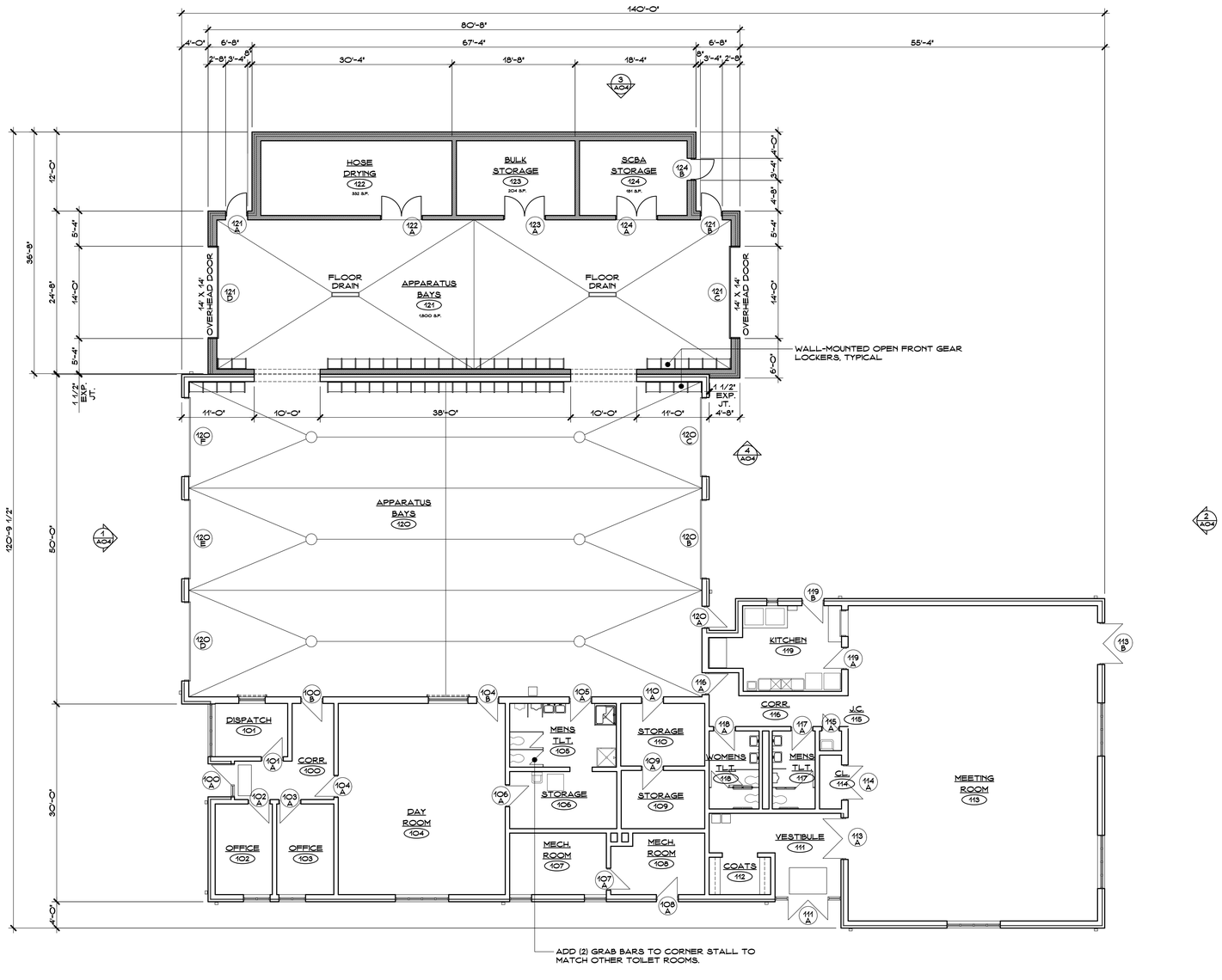
NEW PLUMBING FIXTURES. SEE PLUMBING DRAWINGS

NEW DOOR

NOTE:
SEE ALSO STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR ADDITIONAL WORK REQUIRED.

GENERAL NOTES:

1. EXISTING DOORS TO RECEIVE NEW LOCK SETS. COORDINATE WITH DEMO PLAN FOR LOCATIONS.
2. RELOCATE ALL EXISTING TOILET ACCESSORIES TO MEET ADA MOUNTING HEIGHT STANDARDS IN TOILET ROOMS: 105, 117 AND 118.
3. REMOVE AND REPLACE / PATCH EXISTING WALL CONSTRUCTION AS REQUIRED TO INSTALL NEW TOILET FIXTURES.
4. ALL EXISTING AND NEW SPACES ARE TO RECEIVE ROOM SIGNS PER ADA REQUIREMENTS.



NORTH

FLOOR PLAN

SCALE: 1/8" = 1'-0"

1 / A02

Project Title:
Addition to
Durham Volunteer Fire Co.
41 Main Street
Durham, Connecticut 06422

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Revision:	Description:	Date:	Revised By:

Drawing Title: FLOOR PLAN

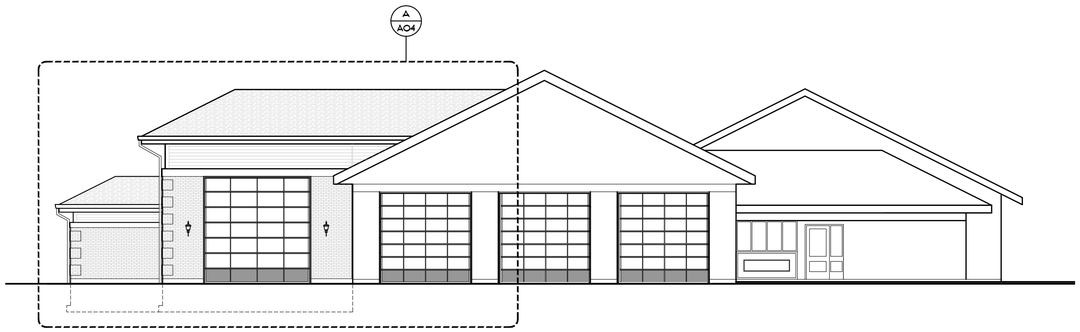
Date: SEPTEMBER 14, 2015

Scale: 1/8" = 1'-0"

Drawn By: JJM

SPA Project Number: 15.037

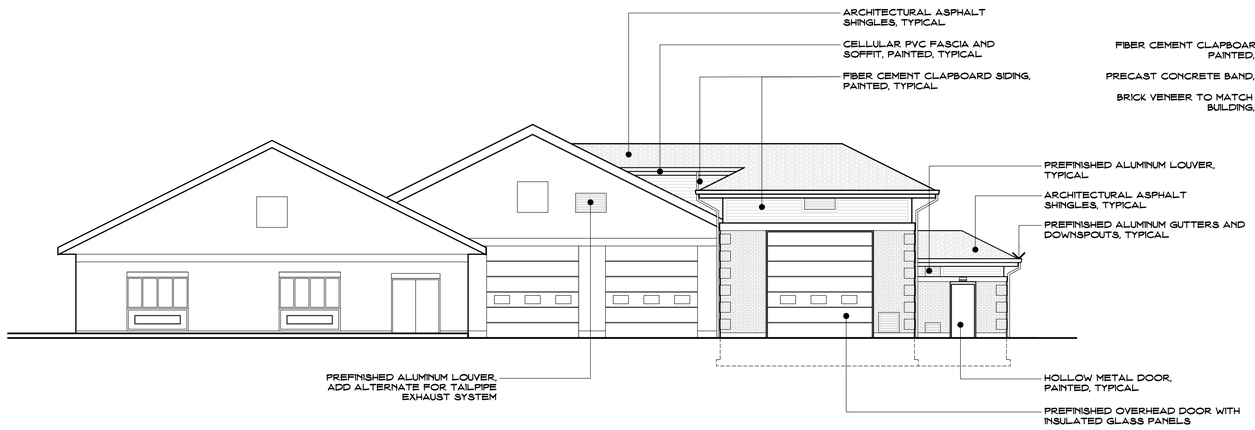
Drawing Number: A02



WEST ELEVATION

SCALE: 1/8" = 1'-0"

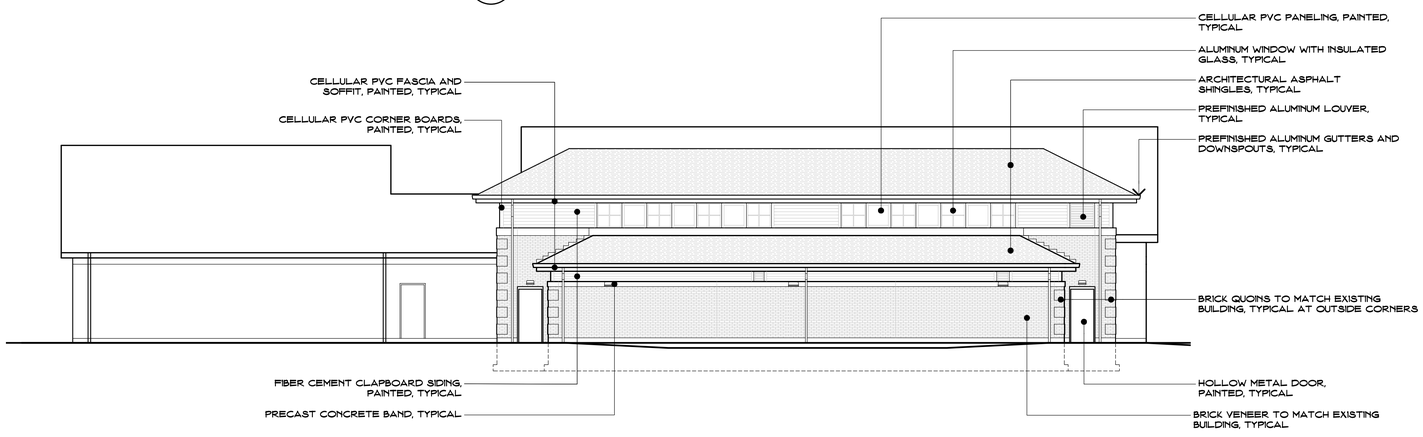
1 / A04



EAST ELEVATION

SCALE: 1/8" = 1'-0"

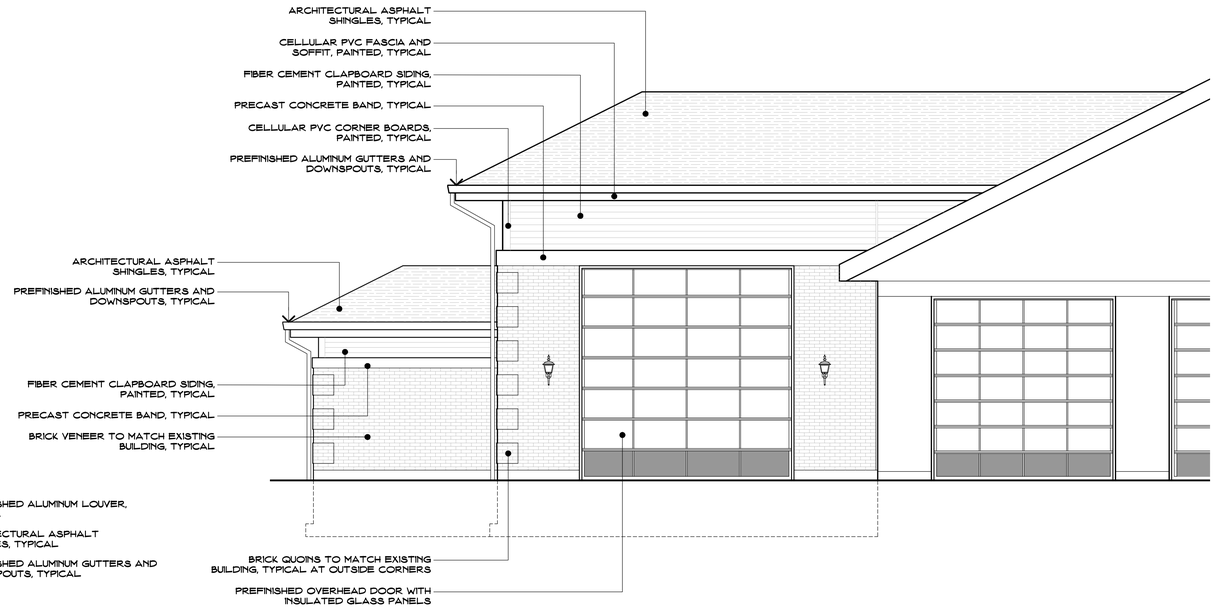
2 / A04



NORTH ELEVATION

SCALE: 1/8" = 1'-0"

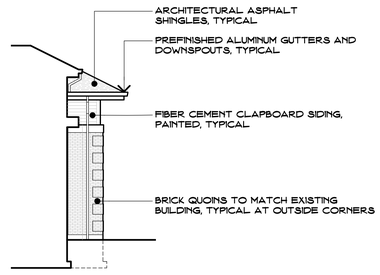
3 / A04



ELEVATION DETAIL

SCALE: 1/4" = 1'-0"

A / A04



SOUTH ELEVATION (PARTIAL)

SCALE: 1/8" = 1'-0"

4 / A04

Project Title:

Addition to

Durham Volunteer Fire Co.

41 Main Street
Durham, Connecticut 06422

SILVER / PETRUCELLI + ASSOCIATES
Architects / Engineers / Interior Designers

3190 Whitney Avenue, Hamden, CT 06518
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silverpetrucelli.com

Revision:	Description:	Date:	Revised By:

Drawing Title: EXTERIOR ELEVATIONS

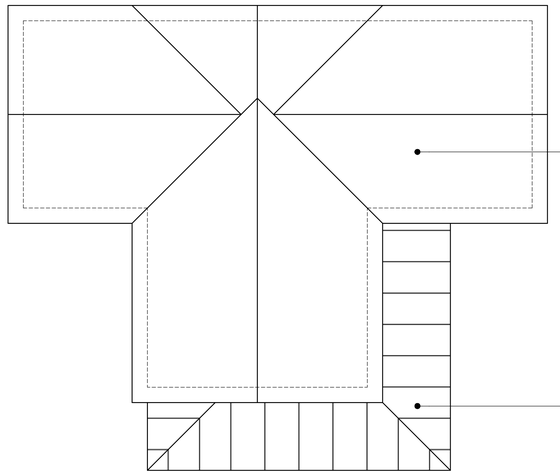
Date: NOVEMBER 30, 2015

Scale: 1/8" = 1'-0"

Drawn By: JJM

SPA Project Number: 15.037

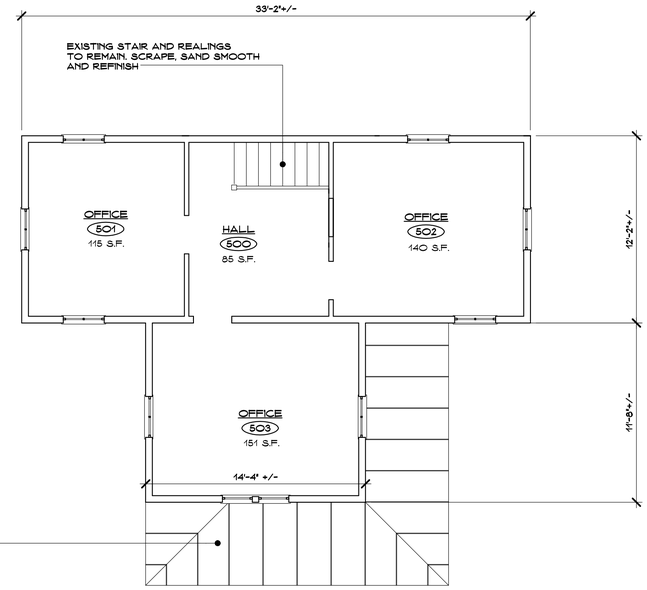
Drawing Number: A04



ROOF PLAN

SCALE: 1/4" = 1'-0"

4 / A12



SECOND FLOOR PLAN

SCALE: 1/4" = 1'-0"

3 / A12

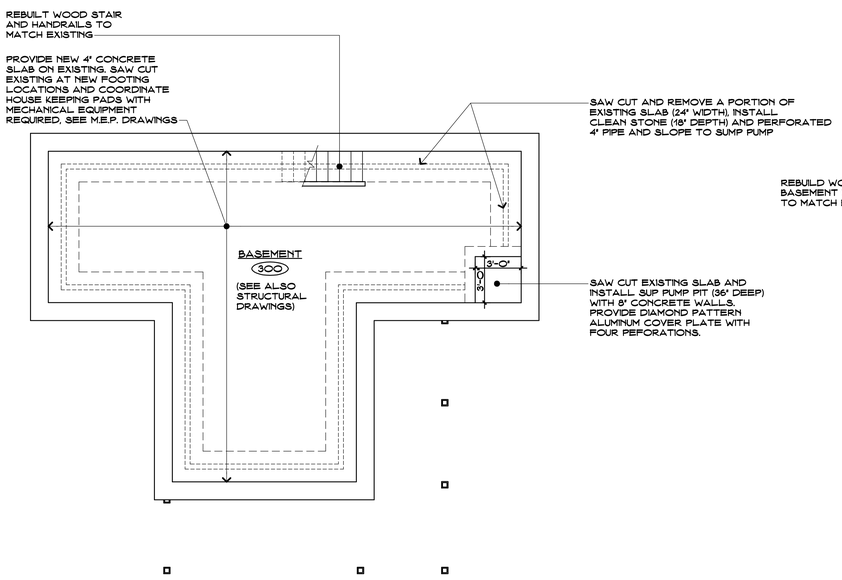
LEGEND:

- EXISTING WALLS TO REMAIN
- NEW WALLS
- NEW PLUMBING FIXTURES, SEE PLUMBING DRAWINGS
- NEW WINDOW

NOTE:
SEE ALSO STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR ADDITIONAL WORK REQUIRED.

GENERAL NOTES:

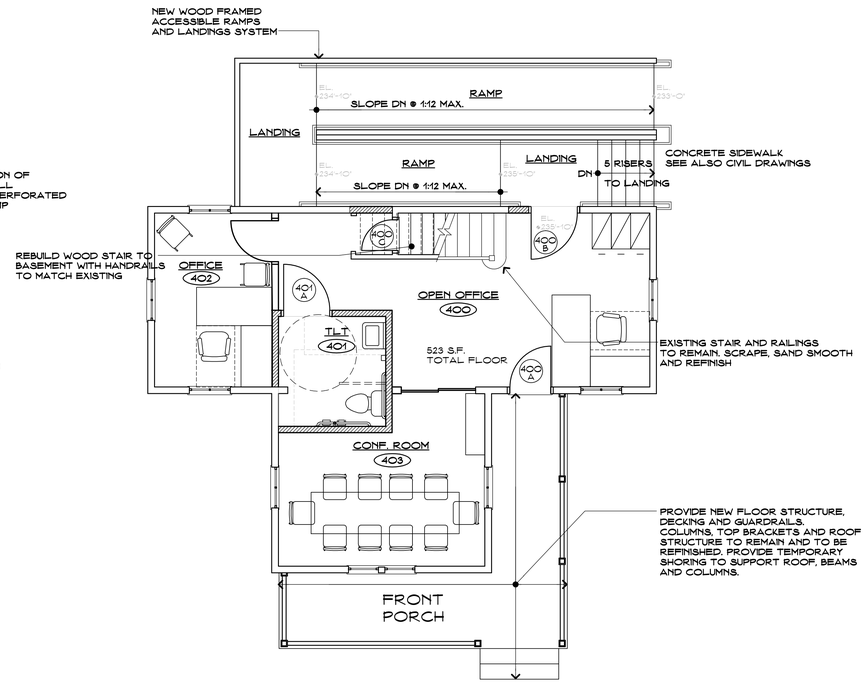
1. ALL NEW AND EXISTING FLOORS SHALL RECEIVE NEW PLYWOOD SUBFLOOR, NO FINISH FLOORS.
2. ALL EXTERIOR WALLS, FIRST FLOOR JOISTS AND ATTIC JOISTS SHALL BE INFILLED WITH BATT INSULATION.
3. ALL EXTERIOR WALLS AND SECOND FLOOR CEILING SHALL RECEIVE GYPSUM WALL BOARD, PRIMED. FIRST FLOOR JOISTS SHALL REMAIN EXPOSED.



BASEMENT FLOOR PLAN

SCALE: 1/4" = 1'-0"

1 / A12



FIRST FLOOR PLAN

REVISED 6/3/2016

SCALE: 1/4" = 1'-0"

2 / A12

NORTH

Project Title:
Renovation and Addition to
37 & 51 Main Street
Durham, Connecticut 06422

SILVER / PETRUCELLI + ASSOCIATES
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3190 Whitney Avenue, Hamden, CT 06518
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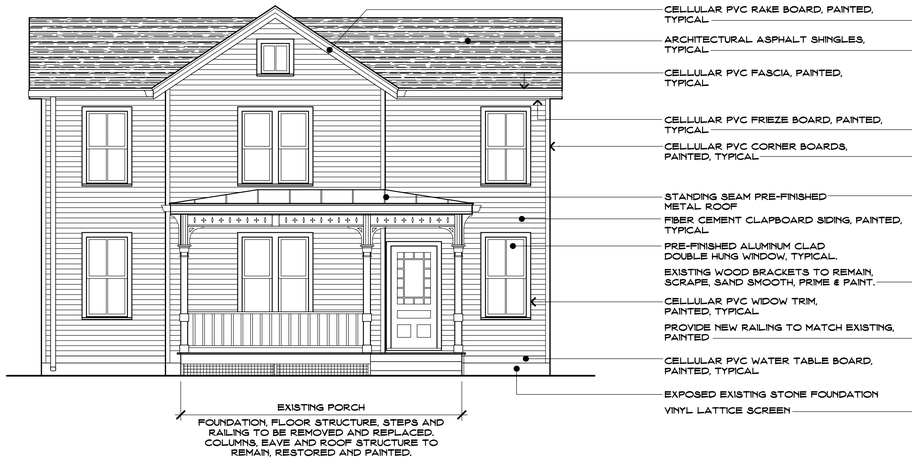
Revision:	Description:	Date:	Revised By:

Drawing Title:
FLOOR PLANS
51 MAIN STREET

Date: MARCH 23, 2015
Scale: 1/4" = 1'-0"
Drawn By: MUC
SPA Project Number: 14.131

Drawing Number: A12

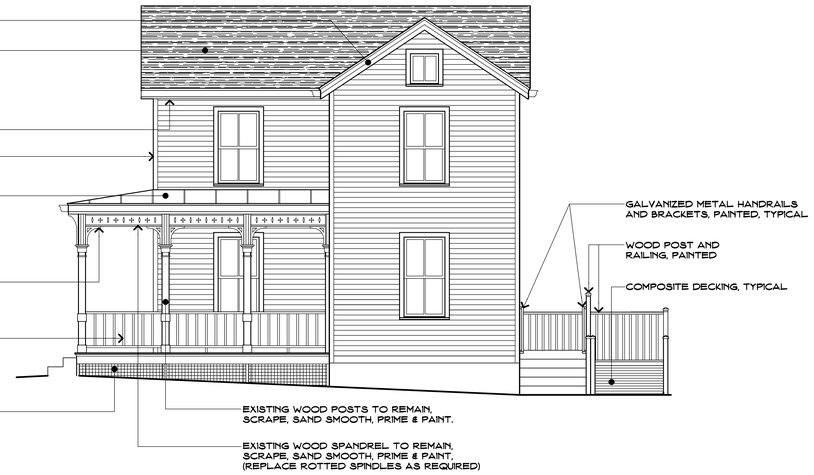
REVISED 11-23-15
REVISED 6-3-16



WEST ELEVATION (FRONT)

SCALE: 1/4" = 1'-0'

1 / A14



SOUTH ELEVATION

SCALE: 1/4" = 1'-0'

2 / A14

EAST ELEVATION

SCALE: 1/4" = 1'-0'

3 / A14

NORTH ELEVATION

SCALE: 1/4" = 1'-0'

4 / A14

Project Title:

Renovation and Addition to

37 & 51 Main Street

Durham, Connecticut 06422

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Revision:	Description:	Date:	Revised By:

Drawing Title:

EXTERIOR ELEVATIONS
51 MAIN STREET

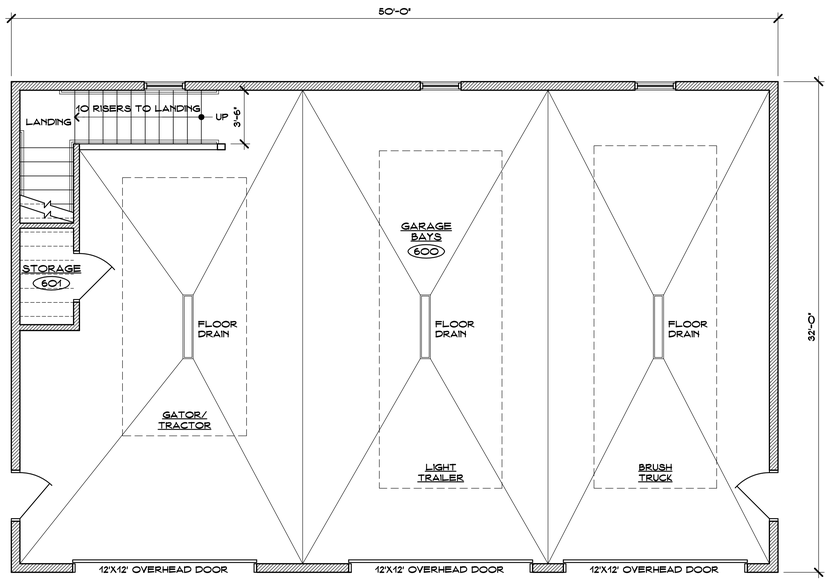
Date: MARCH 23, 2015

Scale: 1/4" = 1'-0'

Drawn By: MUC

SPA Project Number: 14.131

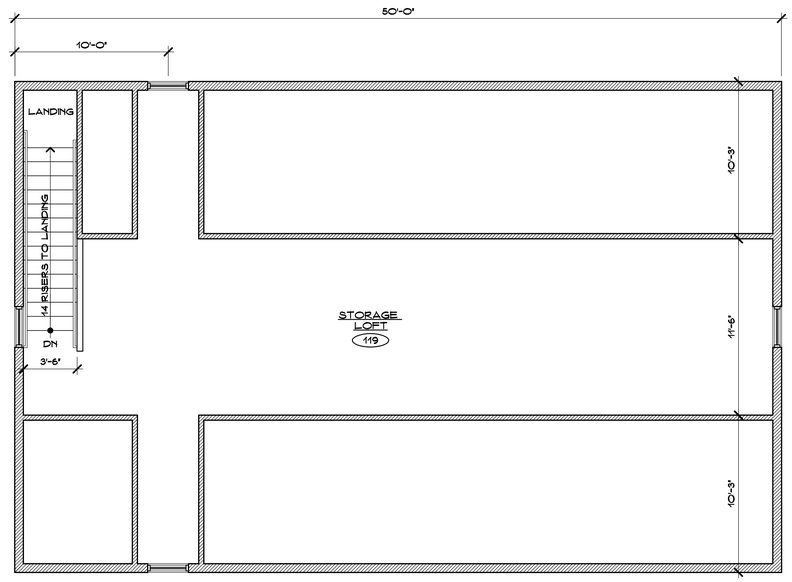
Drawing Number: A14



MAIN FLOOR PLAN

SCALE: 1/4" = 1'-0"

1
A13



MEZZANINE FLOOR PLAN

SCALE: 1/4" = 1'-0"

2
A13

NORTH

Project Title:

Renovation and Addition to

37 & 51 Main Street

Durham, Connecticut 06422

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Revision:	Description:	Date:	Revised By:

Drawing Title:

CARRIAGE HOUSE PLANS
51 MAIN STREET

Date: MARCH 23, 2015

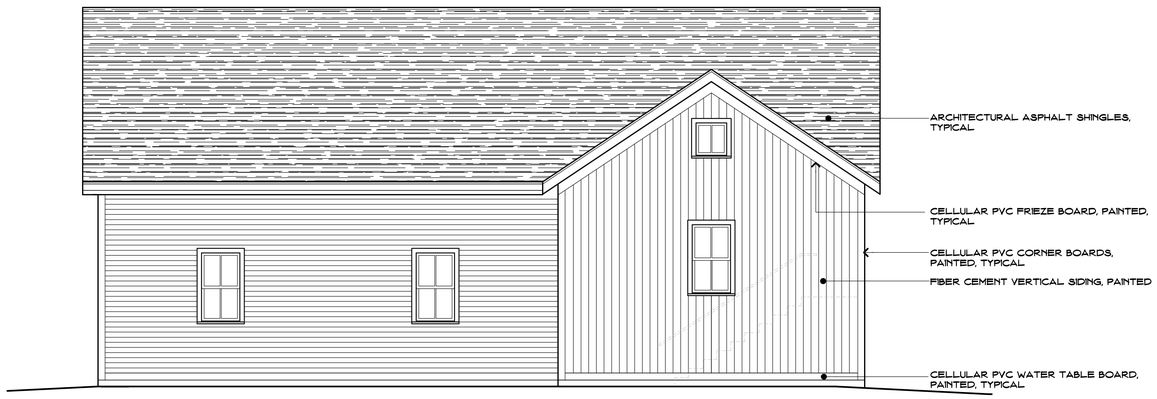
Scale: 1/4" = 1'-0"

Drawn By: MUC

SPA Project Number: 14.131

Drawing Number:

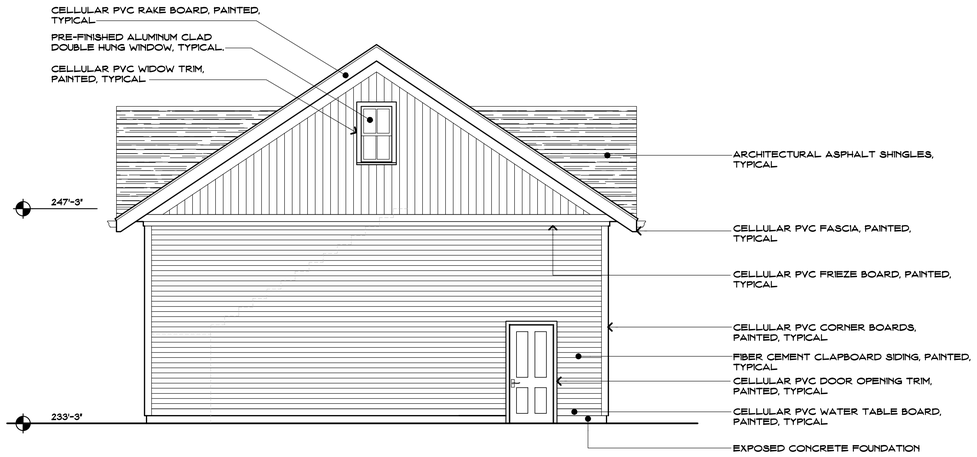
A13



NORTH ELEVATION

SCALE: 1/4" = 1'-0"

3 / A15



WEST ELEVATION

SCALE: 1/4" = 1'-0"

2 / A15

SOUTH ELEVATION

SCALE: 1/4" = 1'-0"

1 / A15

EAST ELEVATION

SCALE: 1/4" = 1'-0"

2 / A15

Project Title:
Renovation and Addition to
37 & 51 Main Street
Durham, Connecticut 06422

SILVER / PETRUCELLI + ASSOCIATES
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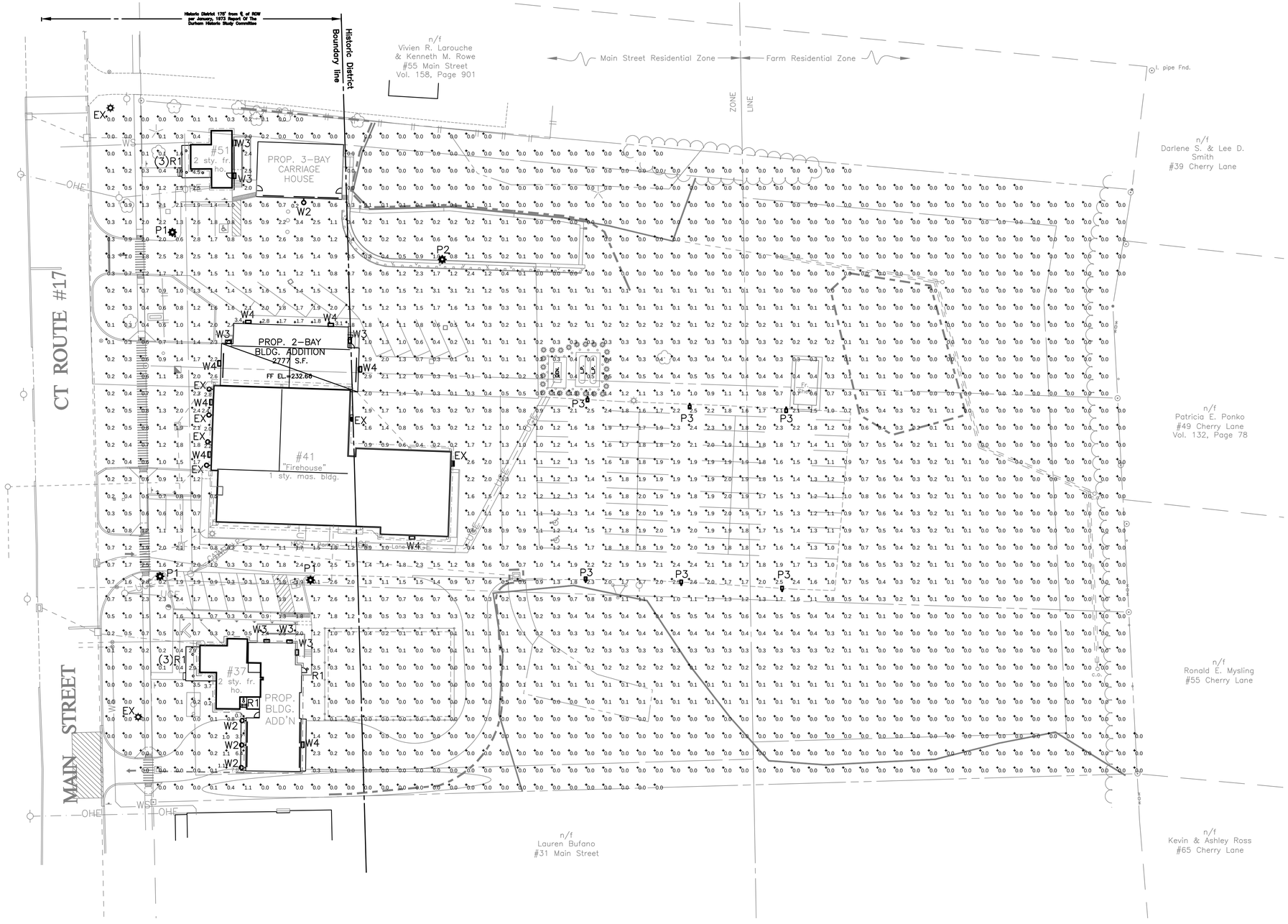
silverpetrucelli.com

Revision:	Description:	Date:	Revised By:

Drawing Title:
CARRIAGE HOUSE ELEVATIONS
51 MAIN STREET

Date: MARCH 23, 2015
Scale: 1/4" = 1'-0"
Drawn By: MUC
SPA Project Number: 14.131

Drawing Number: A15



GRAPHIC SCALE:

30 0 30 60

REVISIONS		
NO.	DESCRIPTION	DATE
1	Review Comments	9/13/16

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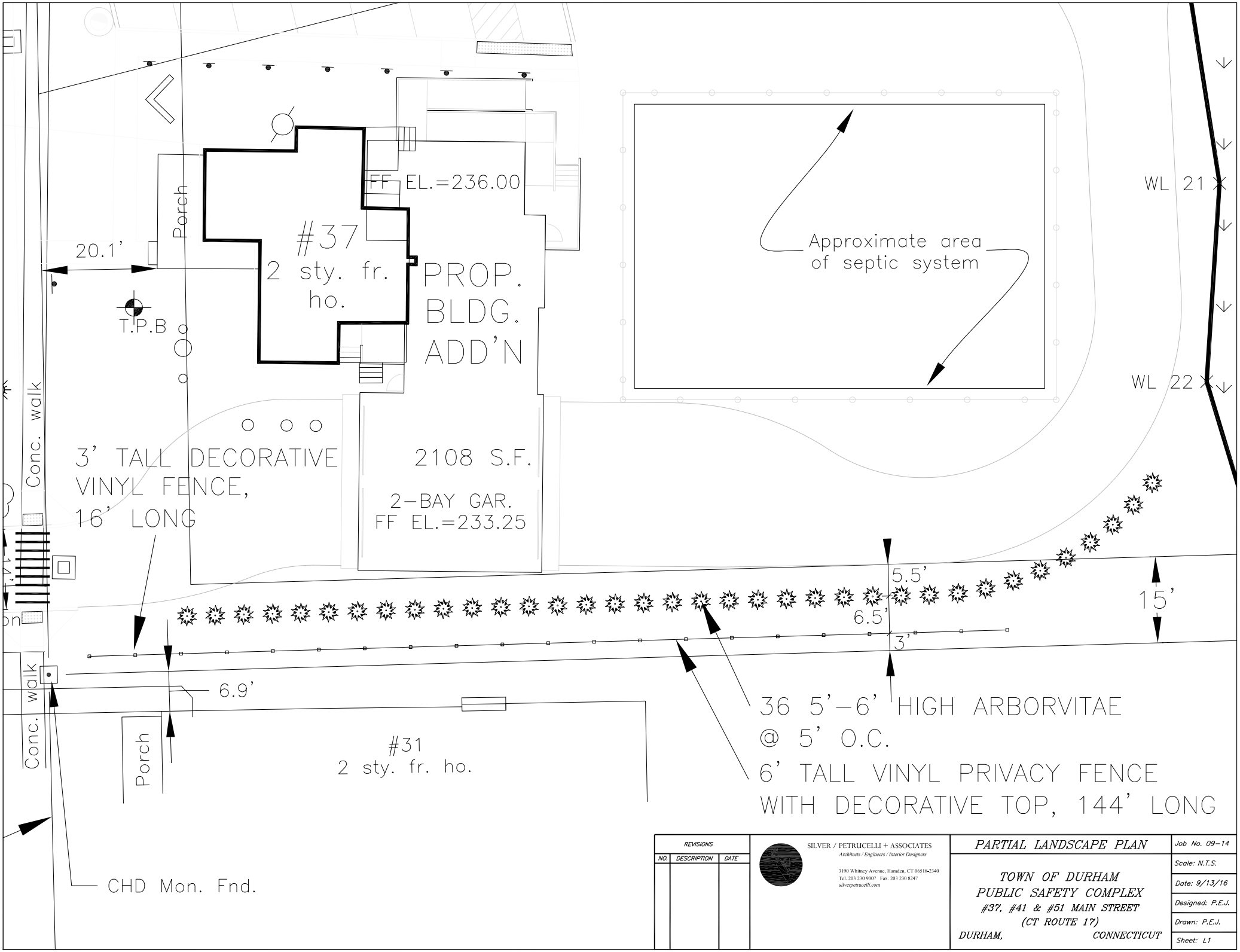
DONALD W. SMITH, JR., P.E.
CONSULTING ENGINEER
56 GREENWOOD CIRCLE SEYMOUR, CT 06483
Tel. 203-888-4904 Fax 203-881-3434 *dwsjrpe@sbcglobal.net*

SITE PHOTOMETRIC 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: 12/7/15
Designed: R.R.B.
Drawn: P.J.E.
Sheet: E1



REVISIONS		
NO.	DESCRIPTION	DATE

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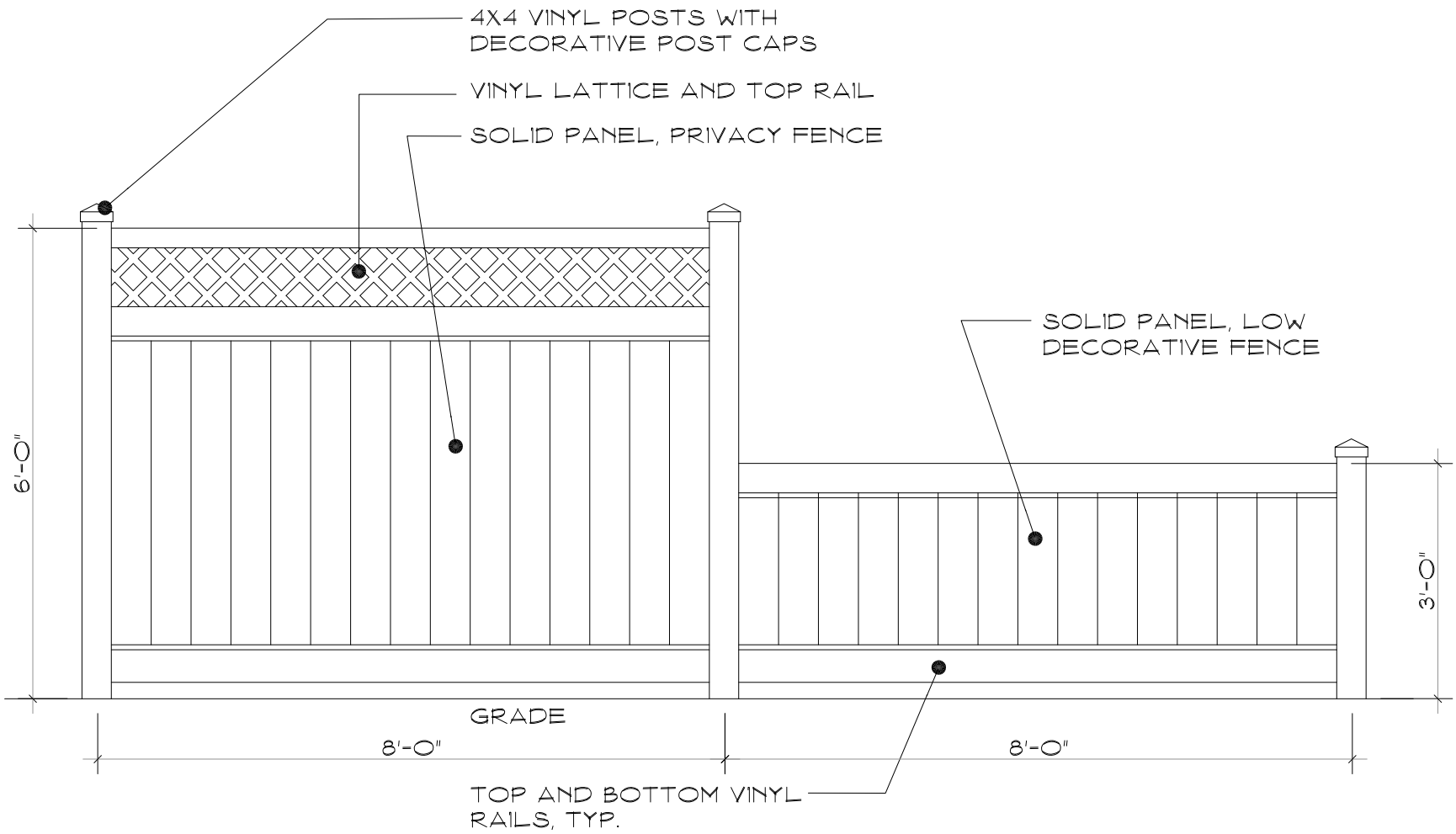
PARTIAL LANDSCAPE PLAN

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

Job No.	09-14
Scale:	N.T.S.
Date:	9/13/16
Designed:	P.E.J.
Drawn:	P.E.J.
Sheet:	L1



PARTIAL VINYL FENCE ELEVATION

1
L2

SCALE: 1/2" = 1'-0"

REVISIONS		
NO.	DESCRIPTION	DATE

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BUFFER FENCE ELEVATIONS

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

Job No.	09-14
Scale:	1/2"=1'-0"
Date:	9/13/16
Designed:	P.E.J.
Drawn:	P.E.J.
Sheet:	L2