

**Request for Proposals (RFP)**  
**Design/Build Construction Services**  
**Public Works Facility**  
**Town of Norwich, Vermont**

**1. PURPOSE**

1.1 The Town of Norwich (Town) is seeking Design/Build proposals for the construction of an addition to the existing Public Works facility.

1.2 The building is located at 26 New Boston Road in Norwich, Vermont.

1.3 A survey of the site is attached.

**2. DESIGN/BUILD SERVICES**

2.1 The proposed project includes the construction of a 40' x 100' pre-engineered steel building addition to the existing building as detailed in the attached outline specification.

2.2 The proposals shall include the costs of all components of a complete building addition including, but not limited to, site work, connections to the existing building, foundations, floors, walls, roof, electrical, plumbing and all other necessary work for a complete and functional building.

**3. CODES AND STANDARDS**

3.1 At a minimum the following codes, standards or regulations shall be used for this project:

3.1.1 Applicable OSHA Regulations.

3.1.2 Vermont Fire & Building Safety Code.

3.1.3 2015 Vermont Commercial Building Energy Standards

3.1.4 Vermont Agency of Natural Resources Rules.

**4. INSURANCE REQUIREMENTS**

4.1 All contractors and subcontractors are required to maintain insurance coverage and list the Town as an additional insured in accordance with the minimum amounts listed below. Prior to the start of any work, the Town shall be furnished with an insurance certificate as proof that coverage is in place.

- a) General Liability \$2,000,000 per occurrence
- b) Property Damage \$2,000,000 per occurrence
- c) Personal Injury \$2,000,000 per occurrence
- d) Automotive Liability \$1,000,000 per occurrence
- e) Worker's Compensation (Statutory Requirement)

**5. PREPROPOSAL MEETING**

A preproposal meeting will be held on December 29, 2015 at 1000 hours at the Public Works facility located at 26 New Boston Road, Norwich, VT. The conference is intended to clarify the proposal requirements and provide an opportunity for questions and answers. If necessary, an addendum to this Request for Proposals will be issued

following the preproposal conference. All questions related to this Request for Proposals and addenda, if needed, shall be in writing and addressed to the Town Manager.

**6. PROPOSALS**

6.1 All proposals shall include the following:

6.1.1 Guaranteed Maximum Cost.

6.1.2 Detailed cost breakdown.

6.1.3 Project schedule.

6.1.4 Plan view of proposed layout.

6.1.5 Proposed materials.

6.1.6 Examples of similar projects.

6.1.7 Contact names and telephone numbers of previous clients.

6.1.8 Name and resume of Project Manager.

6.2 The Town of Norwich has the right to reject any or all proposals if doing so is in the best interest of the Town.

6.3 All questions on this RFP should be directed to the Town Manager Neil Fulton at:

6.3.1 Email: [nfulton@norwich.vt.us](mailto:nfulton@norwich.vt.us).

6.3.2 Phone 802-649-1419 X102.

6.4 Proposals as a PDF attachment to an email will be accepted.

6.5 Interested firms shall submit their proposal no later than 1200 hours on January 6, 2016 to:

Neil R. Fulton  
Town Manager  
Town of Norwich  
300 Main Street  
Post Office Box 376  
Norwich, VT 05055

**Outline Specification  
for  
Public Works Building Addition  
Town of Norwich, Vermont**

**1. Addition to the Existing Building**

1.1 Meet the applicable building and energy codes.

1.2 Include all permit fees.

1.3 Add a 40' x 100' addition to the back of the existing building. The new roof at the point it attaches to the existing building shall be located at least 2' below the existing roof.

1.4 Install a membrane roof with insulation over the roof of the existing building.

1.5 An engineering report and clarifications (copies attached) of the existing building stated that:

The lateral load resisting elements (braces, moment frames, etc) of the existing building were not visible in the sidewalls and the back wall during the site visit. The only wall where evidence of a lateral load resisting system was noted was the in the front wall, where a moment frame was located in one of the overhead door bays. Code requirements for existing buildings specify that if the loads to the lateral resisting systems of existing buildings increase by more than 10%, the entire lateral system must be upgraded to current code requirements. For this building, we have determined that a net dead load increase of 1.5 PSF is allowable without a full analysis/upgrade of the lateral load resisting systems.

1.5.1 At some time in the past an X brace(s) that was the lateral resisting system was removed from the rear wall of the existing building. Provide a lateral resisting system in the existing rear wall similar to the moment frame at the front of the building, or equivalent, to provide unobstructed access to the addition.

1.6 Add a new insulated overhead door that matches the existing doors in the right bay when facing the front of the building.

1.7 Interior Offices.

1.7.1 Construct interior office, break room and restroom at left rear corner of addition.

1.7.2 The office/break room, restroom area shall have typical interior finishes including commercial grade vinyl floor tiles and base. The interior room walls shall be framed with wooden or metal studs with 5/8" fire code drywall, taped and painted.

1.7.3 The maximum width of the interior offices shall be the truss spacing, estimated at 16'. The maximum depth of the interior offices shall be the depth of the addition. The stairs shall be included within these dimensions.

1.7.4 The desired sizes of the rooms are as follows:

- 200 sq. ft. office with interior and exterior door.
- 250 sq. ft. break/locker room.
- 100 sq. ft. restroom with toilet, urinal and slop sink.

1.7.5 Include a mezzanine over the office area with a stair and live floor load of 150 lb. per sq. ft. plus the load of the solar hot water tank described in another portion of the specification.

1.8 The demolition of the existing restroom, storage and mezzanine will be done by the OWNER.

1.9 Electrical

1.9.1 Connect to the existing panel.

1.9.2 Provide outlets as required by the NEC.

1.9.3 Extend the current fire alarm system to the addition.

1.9.4 Lighting

1.9.4.1 High efficiency T5 fixtures or LEDs.

1.10 Heating

1.10.1 Addition to be heated by ventilated propane radiant tube heaters similar to those in the existing building.

1.10.2 Office, restroom and break room heated by propane forced hot air heat. A setback thermostat shall be located in the office.

1.11 Plumbing

1.11.1 Construct new well to be located next to the underground tank with the dry hydrant. See the attached permit and proposal. Owner to excavate ditch for piping, backfill and patch paving. (See attached.)

1.11.2 Move the existing solar hot water tank, system and solar panels from the existing building to the new addition mezzanine over the new office and break room.

1.11.3 Septic - Connect to the existing mound system manhole. Owner to excavate ditch for piping, backfill and patch paving.

1.12 Ventilation

1.12.1 Move existing exhaust fan in existing rear wall to new rear wall.

1.13 Building Finishes

1.13.1 The garage area shall be exposed structural members.

1.13.2 The owner will be responsible for sealing the new concrete floor.

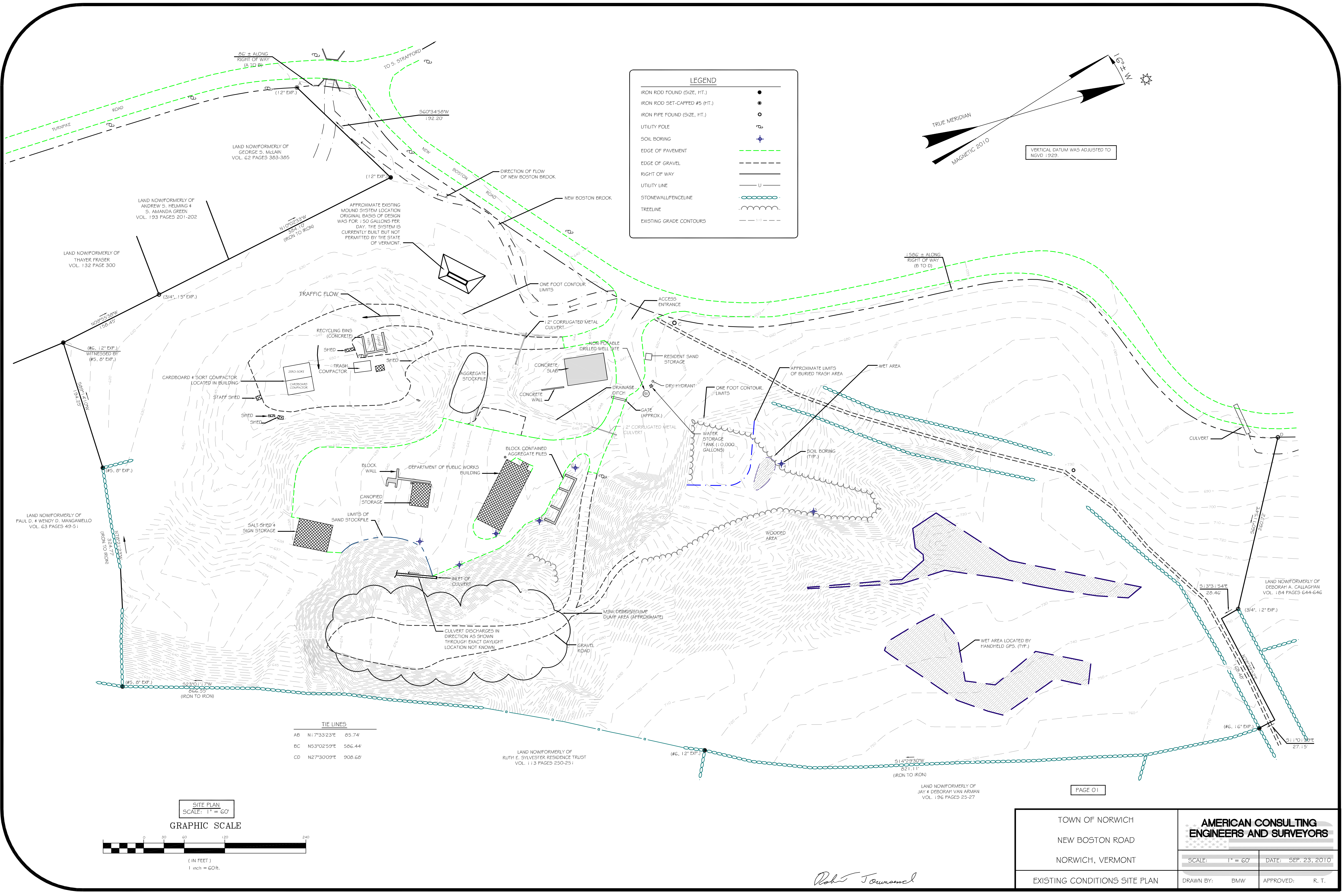
1.14 Windows

1.14.1 All windows shall be dual pane.

1.14.2 The bottom of the windows in new back wall shall be a minimum of 7' from floor to allow use of the wall space.

1.14.3 Windows in office and break room to be typical heights.





**LEGEND**

- IRON ROD FOUND (SIZE, HT.)
- IRON ROD SET-CAPPED #5 (HT.)
- IRON PIPE FOUND (SIZE, HT.)
- UTILITY POLE
- SOIL BORING
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- RIGHT OF WAY
- UTILITY LINE
- STONEWALL/FENCELINE
- TREELINE
- EXISTING GRADE CONTOURS

TRUE MERIDIAN  
MAGNETIC 2010

VERTICAL DATUM WAS ADJUSTED TO NGVD 1929.

**TIE LINES**

AB	N17°33'23"E	85.74'
BC	N53°02'59"E	586.44'
CD	N27°30'09"E	908.68'

**SITE PLAN**  
SCALE: 1" = 60'

**GRAPHIC SCALE**

( IN FEET )  
1 inch = 60 ft.

TOWN OF NORWICH		<b>AMERICAN CONSULTING ENGINEERS AND SURVEYORS</b>	
NEW BOSTON ROAD			
NORWICH, VERMONT			
EXISTING CONDITIONS SITE PLAN		SCALE: 1" = 60'	DATE: SEP. 23, 2010
		DRAWN BY: BMW	APPROVED: R. T.

*Rob Tournemel*



# WRAGG BROTHERS OF VT., INC.

## WELL DRILLING & PUMP SERVICE

"Have a Modern and Up-to-Date Water System"  
Complete Pump & Tank Installation

P.O. BOX 110, ROUTE 5 • ASCUTNEY, VERMONT 05030 • 802-674-5890 • 800-255-5890 • FAX 802-674-2958

### CONTRACT

This **AGREEMENT** made on 12-21-15 between **WRAGG BROTHERS WELL DRILLING OF VERMONT INC.**  
and Town of Norwich PO Box 376 Norwich VT 05055

TELEPHONE #: 802-649-2209

FAX #: \_\_\_\_\_

Drilling will be charged at \$ 16.00 per foot.

Hydrofracking \$ 2200.00

(If Necessary)

Casing will be charged at \$ 16.00 per foot.

Mudding Charge \$ 500.00

(If Necessary)

Drive shoe will be charged at \$ \_\_\_\_\_

Grouting \$ 500.00

### ESTIMATE

Drilling, Ft. 500'

Cost \$ 8000.00

Casing, Ft. 100'

Cost \$ 1600.00

Drive Shoe \_\_\_\_\_

Cost \$ 300.00

Pump and Tank Installation Size CONSTRUCT PRESSURE Cost \$ 6000.00  
(Including all necessary material & up to 75 feet of offset lines)

Total \$ 19,100.00

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**The balance for completed work is due upon receipt of invoice.** A finance charge of 2% per month will be assessed on all past due balances. Customer agrees that all collection cost and attorney fees will be the responsibility of the **CUSTOMER**. A \$25.00 fee will be charged for returned checks. All products and services remain the property of **WRAGG BROTHERS OF VT, INC.** until paid in full. If pump installation is not completed within 1 year additional cost can be incurred. **PRICES SUBJECT TO CHANGE AFTER 30 DAYS.** **Wragg Brothers retains the right to enter the property to retrieve any and all products not paid for in full. ALL APPLICABLE STATE TAXES WILL BE ADDED AT THE TIME OF BILLING.**

**CUSTOMER** is responsible for any required permits. **CUSTOMER** shall inform **CONTRACTOR** of any designated well locations in state or local plans. **The CONTRACTOR will assist but will not be held responsible for the well location. The CUSTOMER may order drilling stopped at any depth. CONTRACTOR agrees to drill to the normal limits of the CONTRACTOR'S equipment.**

**Additional charges may be incurred.** Extra fees, such as, wiring or plumbing inside of building, trench from well to building, hydrofracturing, excavation work, equipment extraction or installing run off for an overflowing well etc.. **PROPERTY OWNER** will not hold **CONTRACTOR** responsible for any damages to property due to heavy equipment and debris from drilling operation will be removed by and at the expense of the **CUSTOMER**.

Water well drilling is exploratory. Therefore, **CONTRACTOR is not responsible for water QUALITY or QUANTITY or for NATURALLY OCCURRING FAULTS IN BEDROCK.**

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Job location: Dose NOT Include Hook up for fire dept to be on the  
South side \$25,000.00 Lot # \_\_\_\_\_ Tax Map # \_\_\_\_\_

SALESMAN Dry

HOME OWNER/AUTHORIZED AGENT \_\_\_\_\_

(I fully understand all the information contained in this contract

NH LIC. #173 / VT LIC. #162

FAX: 802-674-2958

[www.wraggwelldrilling.com](http://www.wraggwelldrilling.com)

[wraggbros@comcast.net](mailto:wraggbros@comcast.net)

Richard S. DeWolfe, PE  
President

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Vice President



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David L. Frothingham, PE  
Zarabeth M. Duell, PE  
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Richard W. McLain, PE  
Alicia A. Feiler, PE  
Nicole D. Crum, PE

November 11, 2014

Neil Fulton, Town Manager  
Town of Norwich, VT  
P.O. Box 376  
Norwich, VT 05055

Subject: **DPW Building Analysis**  
**New Boston Road, Norwich, VT**

Dear Neil:

As requested, on October 14, 2014, I visited the above referenced site to review the existing roof structure in order to determine the existing load capacity and the structural acceptability of adding new insulated roof panels.

Our analysis and review of the building are based upon the requirements of the 2012 Vermont Fire and Building Safety Code which incorporates the 2012 International Building Code. According to the Vermont Fire Building and Safety Code, the on ground snow load for Norwich, Vermont is 50 pounds per square foot (psf). In our analysis we factored the snow loads to account for exposure, thermal, and importance factors. For computation of importance factors, the building was assigned to Risk Category II as defined in the IBC. These factors produced a design flat roof snow load of 35 psf, however, the State of Vermont requires that all roofs be designed for a minimum snow load of 40 psf. Therefore, we have used the code required 40 psf for roof analysis. The code also requires that gable roofs be analyzed for unbalanced snow load conditions.

The existing DPW building is an approximately 40'-0" wide x 98'-0" long single story steel framed building. The roof is framed with 8" deep, 14 gage zee purlins spaced at 3'-10"+/- on center. The zee purlins are supported by custom fabricated tapered steel plate girders at 16'-0" on center. The tapered steel beams are supported by W8x13 steel columns. The roof deck, roof deck attachment, and composition of the roofing were not visible due to the existing continuous batt insulation.

In the southern-most bay, a wood framed storage mezzanine has been constructed within the steel framed building. A painted sign on the outside face of the interior mezzanine indicates "THE LIVE LOAD CAPACITY OF THIS MEZZANINE IS 55 PSF."

The existing light gage zee purlins are adequate for the typical existing dead loads and code required balanced and unbalanced snow loads. The existing purlins would be adequate for a small increase in dead load due to the addition of new lightweight

Surveying

Permitting

Site Design

Subdivisions

Timber Design

Expert Testimony

Site Development

Act 250 Permitting

Forensic Engineering

Environmental Permitting

Transportation Engineering

Structural Inspection Services

Commercial Building Design

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Building Assessment

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317 River Street  
P. O. Box 1576  
Montpelier, VT  
05601-1576  
phone: 802.223.4727  
fax: 802.223.4740  
www.dirtsteel.com



insulated roof panels.

The tapered steel roof beams and the rolled wide flange columns are adequate for the typical existing dead loads and code required balanced and unbalanced snow loads. The existing tapered steel beams would be slightly over-stressed, but within commonly accepted structural engineering limits, for a small increase in dead load due to the addition of new lightweight insulated roof panels.

Based on our calculations, the existing roof purlins and adjacent roof beams are not adequate to support the additional wind and snow drift loads created by the roof mounted solar panels.

For approximately 2/3 of it's length, the existing storage mezzanine is framed with 2x12 wooden floor joists at 16" o.c. These joists would be slightly over-stressed, but within commonly accepted structural engineering limits, for the posted live load of 55 psf. Based on the observations made during our site visit, it appears that, at the inner end of the joists, this portion of the existing mezzanine is hung from the light gauge roof purlins with wooden 2x4 "hangers" at each purlin. Each vertical "hanger" is attached to each purlin with (2)- $\frac{1}{2}$ " diameter carriage bolts. The attachment of the hanger to the mezzanine floor structure was not visible. There are numerous structural issues with this method of support. Based on our calculations, the (2)- $\frac{1}{2}$ " diameter carriage bolts attaching the 2x4 hangers to the purlins are adequate for a uniform mezzanine live load of 14.5 psf. Therefore, the bolts would be over-stressed by 165% +/- with the currently posted 55 PSF live load. Second, the existing roof purlins when supporting the hung loads are over-stressed by 11% +/- . Third, the existing tapered steel beam nearest the end of the mezzanine (located approximately 2'-0" from the end of the mezzanine), is already slightly over-stressed due to dead loads and snow loads and would be over-stressed by 26% +/- with the currently posted live load of 55 PSF.

The portion of the mezzanine which is not hung from the roof structure supports mechanical equipment associated with the roof mounted solar hot water system. This equipment includes a 4'-0" deep, 7'-2 $\frac{1}{2}$ " diameter water storage tank. The existing floor framing in this area is 2x6 @ 2'-0" o.c. floor joists spanning approximately 7'-0. Based on our calculations, these members are over-stressed by 200%+. In places, the floor joists are face nailed to face mounted ledgers which do not appear to have the necessary connection strength to resist the 250 +/- PSF load potentially created by a full 4'-0" deep water tank.

The lateral load resisting elements (braces, moment frames, etc) of the existing building were not visible in the sidewalls and the back wall during the site visit. The only wall where evidence of a lateral load resisting system was noted was the in the front wall, where a moment frame was located in one of the overhead door bays. Code requirements for existing buildings specify that if the loads to the lateral resisting systems of existing buildings increase by more than 10%, the entire lateral system must be upgraded to current code requirements. For this building, we have determined that a net dead load increase of 1.5 PSF is allowable without a full analysis/upgrade of the lateral load resisting systems.

On November 7, 2014, I received an email from you indicating that you have determined there is a 4.5" x 12" glulam beam that supports the inside edge of the mezzanine. You also indicated that this glulam beam is supported at both ends by 4.5" x 12" glulam columns that extend down to the concrete floor. We have analyzed this beam, assuming it is made of very high grade material, and have



determined that it does not have adequate strength or stiffness to support the mezzanine with the currently posted live load.

Based on our calculations, neither the glulam beam, or the hanger system from the roof, are adequate to support the mezzanine for the posted live load by themselves. It is likely that the two systems work together to support a load greater than the calculated capacity of either system acting independently. However, it is difficult to predict the amount of load sharing between systems due to variations in materials and workmanship which can have a large effect on the relative stiffness of each system, which directly affects the amount of load sharing.

Our recommendations are the following:

- reinforce the roof structure in the area of the solar panels to resist the code required snow drift loads and wind loads
- re-support the main area of the mezzanine so that the mezzanine is not hung from the roof structure. This would typically involve either adding new columns below the existing beam, adding a new beam below the existing beam, or removing and replacing the current beam with a new beam of adequate strength and stiffness.
- re-frame the remainder of the mezzanine, where the mechanical equipment is located, to eliminate ledger connections, provide new deeper members, and provide joist hangers
- additional onsite investigation, including removal of existing finishes as necessary, to determine if structurally reliable lateral load resisting elements exist in the sidewalls and back walls, and if these elements do not exist, to determine acceptable locations and methods to add these elements to the existing structure.
- if a new shed roof addition is added to the back of the structure, we recommend that the new roof be located at least 2'-0" below the existing eave. This will limit the amount of additional snow that the existing roof must support in an unbalanced snow load condition.

Please let me know if you have any questions regarding this report or my findings.

Sincerely,

  
Nathan Phillips, P.E.



## Neil Fulton

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**From:** Nathan Phillips <Nathan.Phillips@dirtsteel.com>  
**Sent:** Thursday, September 24, 2015 11:16 AM  
**To:** Neil Fulton  
**Cc:** Chris Temple  
**Subject:** RE: Norwich, VT DPW Building Analysis

Neil,

As noted in our November 11, 2014 report, the maximum additional dead load that can be added with the existing roof in place is 1.5 PSF. Removal of the existing metal roofing and fiberglass insulation batts typically would remove a minimum of approximately 1.0 PSF. The total available capacity would then be approximately 2.5 PSF.

Based on the weight limits above, our structural comments regarding your proposed reroofing options are as follows:

### NEW MEMBRANE OVER EXISTING ROOF

A new single ply membrane roof that is adhered or mechanically fastened to the existing roof typically would not exceed the 1.5 PSF permissible additional weight and would be structurally acceptable.

### REMOVING THE EXISTING ROOF AND INSTALLING INSULATED ROOF PANELS

As noted above, the available load capacity with the existing roof removed is approximately 2.5 PSF. This capacity would typically allow a 3" or 4" insulated panel to be installed and be structurally acceptable. The panel selected would need to be capable of bracing the top flange of the light gage Z purlins.

### INSTALLING A NEW METAL ROOF OVER THE EXISTING ROOF

The installation of a new metal roof over the existing roof typically would not add more than the permissible 1.5 PSF and would be structurally acceptable.

However, the change from a heated space to an unheated space would increase the code required snow loads by an additional 2.0 PSF and therefore would not be structurally acceptable. The only way this could be accommodated is if the building use also changed from being normally occupied to being essentially a storage facility that is not normally used in the winter months. If this was the case, the snow load increase due to being unheated would be offset by a snow load decrease allowed the change in use.

We want to reiterate the other important issues addressed in our November 11<sup>th</sup> report. These issues include significant existing structural deficiencies related to the support of the roof mounted solar array, the support of the storage mezzanine, the support of the solar water storage tank, and others as noted in the report. Page 3 of our earlier report contains a list of recommendations that should be addressed as part of this re-roofing project.

Please call or email if you would our assistance developing structural documents addressing our recommendations or have any other questions.

Sorry it took a while to get back to you!

Nathan Phillips, P.E.  
DeWolfe Engineering Associates, Inc.  
81 River Street

Montpelier, VT 05602

802-223-4727, Ext. 304  
802-613-3005 Direct Line

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**From:** Neil Fulton [<mailto:NFulton@norwich.vt.us>]  
**Sent:** Tuesday, September 08, 2015 10:47 AM  
**To:** Nathan Phillips <[Nathan.Phillips@dirtsteel.com](mailto:Nathan.Phillips@dirtsteel.com)>  
**Subject:** RE: Norwich, VT DPW Building Analysis

Hi Nathan,

I am getting budget estimates for work on the public works building. Your report includes the following statement:

“The existing light gage zee purlins are adequate for the typical existing dead loads and code required balanced and unbalanced snow loads. The existing purlins would be adequate for a small increase in dead load due to the addition of new lightweight insulated roof panels.”

We are considering one of the following:

- A new membrane roof over the existing roof.
- Removing the existing roof and installing insulated roof panels
- Installing a new metal roof over the existing roof. This would be a single layer and the building would not be heated.

Your thoughts and what is the maximum additional load with the existing roof and the maximum load if we removed the existing roof?

Thanks,

Neil

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**From:** Nathan Phillips [<mailto:Nathan.Phillips@dirtsteel.com>]  
**Sent:** Wednesday, November 12, 2014 9:38 AM  
**To:** Neil Fulton  
**Cc:** Chris Temple  
**Subject:** Norwich, VT DPW Building Analysis

Neil,

Attached is our final report for the analysis of the DPW building.

Please call or email if you have any questions.

I apologize for this being late – we are very busy at this time.

Thank you,

Nathan Phillips, P.E.  
DeWolfe Engineering Associates, Inc.  
81 River Street



Montpelier, VT 05602

802-223-4727, Ext. 304