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PLACES Associates, Inc.

Certified WBE

August 26, 2019

Anthony DiLuzio, Senior Project Manager
COLLIERS PROJECT LEADERS
67 Hunt Street, Suite 119
Agawam, MA 01001

via email
Anthony.DiLuzio@colliers.com

Re: Site Development Assessment for Public Safety Facility
Fire Station Site off of School Street, Northfield, MA
Places Project No. 5381

Dear Mr. DiLuzio:

As requested, we have undertaken a review of the existing site as depicted on the enclosed site plan for the potential development of an expanded public safety facility (Fire & Police) on the School Street site. This assessment is an initial review to identify any constraints to the development of an expanded building on the site. This assessment reviews physical conditions and and regulatory processes that may affect the suitability of this site to meet the overall program of expanding the existing fire station to accommodate a public safety facility (Fire & Police).

Soils Assessment:

As part of our assessment of the property, we conducted a series of soil observation (test) holes on November 9th, 2017. These test (pits) holes were performed for multiple reasons:

1. Test holes provide us information as to the constituent soils in the area of development. The type of soils is important to identify whether special "accommodations" are needed in the development of a site or building. Included in our assessment are filled soils, soils containing ash or debris or other conditions that would impact the cost of construction.

2. Test holes provide us with an estimate of the elevation of seasonal high groundwater. This elevation impacts the site and building development, as we traditionally do not locate buildings with basements or lower floors below the observed or estimated seasonal high groundwater elevations. Groundwater elevations also impact site drainage systems and designs.

3. Test holes inform us as to the presence of ledge, boulders or other impediments to foundation placement or site construction.

Soils Summary:

A series of 7 test pits were dug behind (to the east of) the existing fire station off of Main Street (Rts 10 & 63) and south of School Street on the long linear strip of land occupied by the Fire Department. The soils encountered between the existing building and the out building (ladder truck building) appear to be a gravelly fill for up to 2.5'. The in-situ soils are a gravelly fine sandy loam with some rocks. Groundwater is estimated at 5' below existing grade (roughly equal to the elevation of the adjacent

wetlands). The soils in this area appear to be native till soils, which would likely be sufficient to support a building and site development. As they are noted to be "fine sandy loam" it is typical for them to require careful handling if disturbed due to the amount of fines contained in the soil matrix. Once disturbed, they have to be carefully handled to ensure that the are placed "in-the-dry" or as recommended by a qualified geotechnical engineer.

Soils to the east of test pit # 3, have a distinct layer of dark blue silt loam. These soils are typical of marine or wetlands deposits and are extremely plastic in nature (clay-like). These types of soils are not suitable for the placement of permanent structures using typical footings; they usually require substantial efforts to enable the placement of any structures on or in them. The development of any site-related features on or above these soils would require the placement of sufficient gravelly fill layers to mitigate the weak substrate and flexible nature of these soils. These soils do not percolate well and are considered near-impervious for drainage system designs.

As the project is located adjacent to a wetlands area, drainage system designs for any new facility will be required to meet the Massachusetts Department of Environmental Protection (DEP)'s Stormwater Standards. These standards require the "treatment" of runoff, prior to its discharge to adjacent wetlands or wetlands resource areas. These standards also require that the project attenuate runoff on-site to match pre-development flow conditions for statistical storm events. This is usually done using a retention or recharge basin. As the level of these soils is relatively shallow, it is likely that any drainage system design will not permit a catch basin to pipe system, but "country drainage designs" using ditches and surface basins. In all likelihood, this will require that the parking areas be placed in fill to obtain appropriate offsets and allow for the surface drainage.

Permitting:

Zoning Compliance:
The development of land and buildings thereon is impacted by local zoning. In Northfield this project is located in the Village Center Zoning District. This district allows for more dense development than the surrounding districts due to the presence, in part, of public sewer and water services.

This District provides for the following:

Lot Area:	35,000 sf. min. (50,000 if not served by municipal sewer)
Frontage:	150 ft. min.
Lot Depth:	200 ft. min.

Front, side and rear setbacks: 25ft. (10' for accessory buildings).

Section 5.4 of the Zoning Bylaws, Table 1, Public Service, Municipal Use indicates that a Municipal use is allowed, by right in all zoning districts. As such, the municipal use of the site for a police& fire facility is allowed. An Emergency Shelter, as listed "Institutional or Semi-Public Uses" is not allowed.

Pre-Existing, Non-conforming Structure and Lot:
The existing fire station is a pre-existing, non-conforming structure with regard to its position on the site. Currently the building does not meet the front offsets to Main Street and School Street (it is a corner lot and therefore is assumed to have two front yards).

Section 6.3 of the Zoning Bylaws outlines the procedures needed to expand a pre-existing, non-conforming structure. In making a decision, the Zoning Board of Appeals (ZBA) must find that the application complies with all other provisions of the Zoning Bylaws and finds, "...that the reconstruction, alteration, extension will not be substantially more detrimental to the neighborhood than the existing nonconforming structure."

In this case, the proposed addition to the fire station would need to comply with other applicable portions of the Zoning Bylaws, and the ZBA must find that the expansion is in keeping with the existing neighborhood. Section 7.2 – General Provisions, B. Computation of Lot Area, provides a variety of lot criteria including:

- "In computing the area of any lot, no part of a public or private way...shall be included."
- "Each lot shall be capable of containing a one-hundred-fifty-foot-diameter circle within which there is no area subject to protection under the Wetlands Protection Act and within which any principal building may be located."
- "All easements, except easement specifically serving the individual dwelling, shall not intersect with the one-hundred-fifty-foot-diameter circle"

Each of the above criteria cannot be readily met, as the title to the parcel is based on a previous public way. The lot cannot contain a 150' diameter circle, as wetlands abut the site to the south. Finally, a sewer easement serves the lot to the south, crossing through the area nearest to the fire station. As such, these criteria would have to be addressed in a filing to the ZBA.

The ZBA must adhere to the requirements of Section 3.4 (Special Permits) of the Zoning Bylaws to issue a permit.

Section 3.5, Site Plan Approval: This section of the Bylaws grants Site Plan Review Authority to the Planning Board. A site plan review is required when there is a "municipal use involving 1,500 square feet or more of gross floor area." and other criteria (§ 3.5, B, 1 to 5.) Site Plan review criteria (§ 3.5, f, 1 to 13.) outline a variety of criteria that need to be addressed by the design of the site and building. In many cases the development of a public safety facility cannot readily meet such criteria, and waivers or exemptions are required for this unique municipal use.

Section 8: Principals of Rural Design:
Principals of Rural Design are incorporated into the Zoning Bylaws as a separate design-based set of development standards.

In conjunction with these standards,

- § 8.1.2 Off-Street Parking and Loading, A to J apply..
- § 8.1.3 Outdoor Lighting: A to F, 4, J apply
- § 8.2 Signs: 8.2.1 to 8.2.2 may apply

Conservation Commission:

The Conservation Commission has jurisdiction over alterations of land, structures or earth disturbances within 100' of the edge of a wetlands and 200' from the edge of a perennial stream (aka "river"). The Conservation Commission acts under the provisions of the Massachusetts Wetlands Protection Act (310 CMR 10.00), and they are the approving authority with regard to wetlands protection and storm water quality issues. In this case, the abutting property to the south of the site has bordering vegetated wetlands on it. A potential perennial stream exists on the easterly side of the site, ~ 1,000 feet easterly. In any case, the Conservation Commission would have the responsibility to review any proposal for its potential impacts on the adjacent wetlands. Some latitude may be able to be extended to the development of the site, as much of it is previously disturbed and partially paved.

There are multiple filings that can be made to the Conservation Commission, the most common and complex is a Notice of Intent, where full site design and drainage system analyses are required to be submitted for the Commission's review. Included in this application would be an Erosion and Sedimentation Control Plan and Stormwater Pollution Prevention Plan, to document how the adjacent wetlands would be protected before, during and after construction of the project. Additional specific criteria apply that are dependent on a variety of site-related factors.

Other Environmental:
Reviewing Mass GIS information, the site does not contain and is not near to:

- Vernal pool or potential vernal pools
- Riverfront areas
- Endangered or threatened species habitat
- Wellhead, Watershed Overlay or Protective District
- Is not tributary to an Outstanding Resource Water (ORW).
- Any 21E reportable hazardous waste site or disposal area
- Does not contain a DEP AUL (Activity Use Limitation) area.
- Is not noted to contain any underground storage tanks (UST).

In summary, other than off-site, adjacent wetlands there do not appear to be off-site constraints to the development of the lot.

Highway Department, Curb Cut Permit:
The Highway Department enforces local bylaws requiring a curb cut permit be issued for modifications to existing curb cuts or new curb cuts.

Main Street is a state-numbered route (Rts. 10 & 63) , we are not able to identify if it is state-maintained or locally maintained. If the roadway is state-maintained, then any changes to the driveway configuration at Main Street would require Mass. Department of Transportation review through a "Curbcut Permit".

Utilities:
Sewer and Water: The site is currently served by municipal sewer and water. We believe that sufficient capacity exists in both systems to support the proposed facility. Please note that no pressure or flow tests were conducted or provided to this office with regard to water systems. This testing will be required for the design of the facility's fire protection system and for confirmation of general domestic flows.

Electrical: Three-phase electrical power exists on Main Street and down School Street to the first pole.

Drainage: The site currently drains to an on-site catchment system that flows to street drainage to the east of the developed site. Depending on the final project configuration, it appears that there is sufficient space on the site to contain runoff and both treat it and store it sufficiently to meet DEP Stormwater Regulations. Please note that this statement assumes that there is sufficient un-occupied or paved land remaining on the site area to accommodate surface-based drainage systems (ditches, basins, etc..). We do not believe that below grade piped systems will be suitable, given the location and elevation of the adjacent wetlands.

Summary:

This site poses a variety of challenges including quality of title, zoning compliance, permitting and site development (construction) issues.

The site is long and narrow, which does not provide much area within existing zoning offsets to place a useable building. The existing fire station is a pre-existing, non-conforming structure. Any addition to the building would require the review and approval by the Zoning Board of Appeals. Building inside the zoning offsets would also require specific permission from the Zoning Board of Appeals.

A site plan review is required from the Planning Board. A filing with the Conservation Commission and compliance with DEP Stormwater Quality Standards is also required. Due to the variety of waivers and variances that may be needed from each of these permit granting authorities, we would recommend meeting with them in an informal fashion to discuss the permitting process. Denial of some required waivers or variances to regulations may make the project infeasible.

The presence of gravel fill with some debris mixed in is indicative of a previously disturbed site. We are not experts in hazardous materials or wastes and cannot comment on the status of some of the observed fill components; however, this should be further investigated if additional debris or fill materials are encountered during future geotechnical testing.

The presence of silt-loam (clay-like) materials imposes a constraint to the development of the eastern portions of the site. We would recommend that no structure be designed to the east of Test Pit #3, without further investigation and review by a qualified geotechnical engineer. The development of parking and other uses may be possible in this area, however it will likely require fill to be placed to accommodate this soil type. Additional geotechnical testing specifically performed for soil loading (foundation design) will need to be completed by a geotechnical engineer.

It is our belief that a two story building, with access at the front (off of Main Street) and access on a lower level off of School Street could potentially be achieved on this site, subject to the above items.

We trust that the above is a sufficient description of the site, its environs and its potential for development in light of these conditions. Should you or any member of the Committee have any questions regarding the above, please do not hesitate to contact the undersigned.

Sincerely,
Places Associates, Inc.
By:

William E. Murray, RLA
Project Manager
Enc., as noted

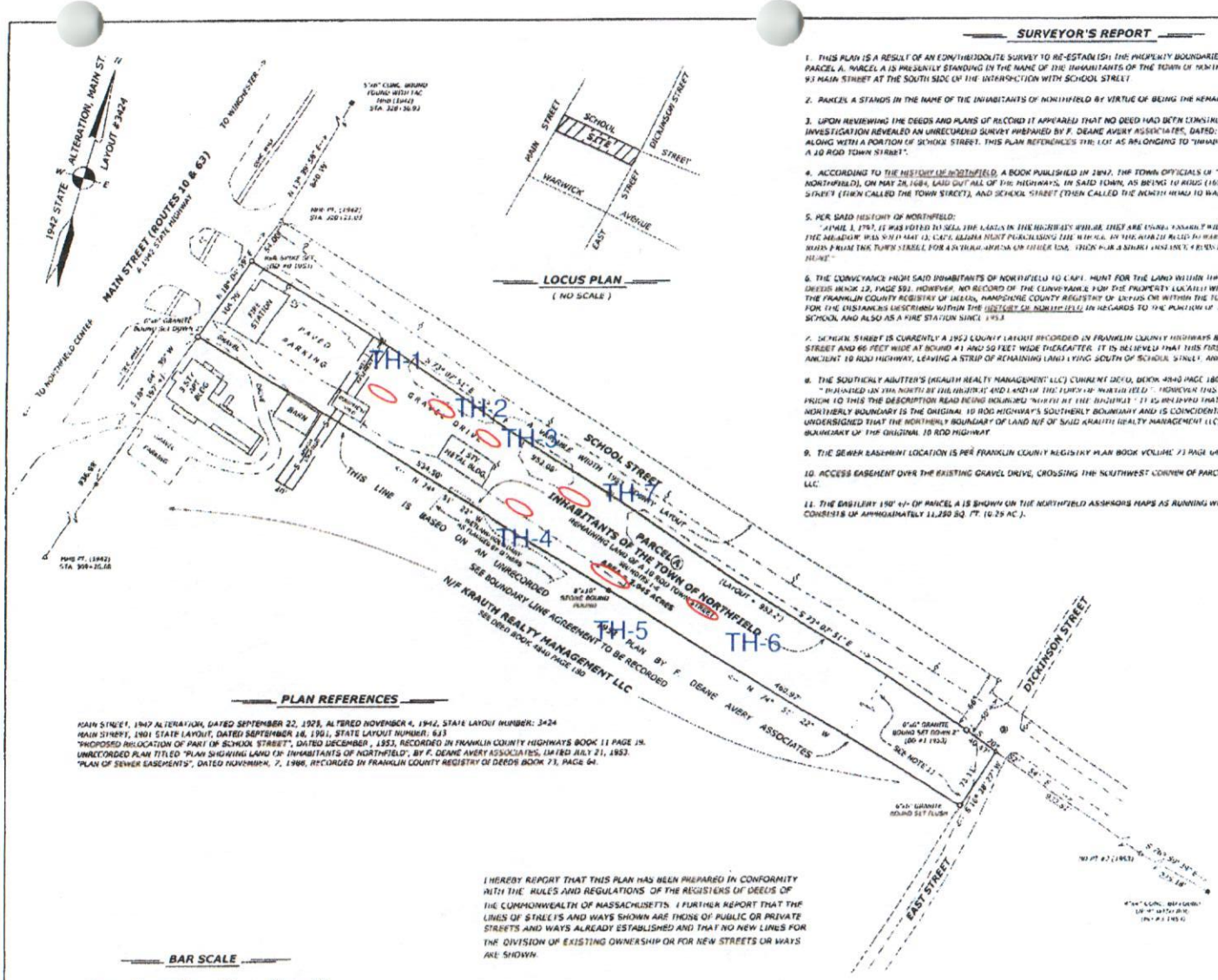
List of Attachments:

1. *Property Line Plan of Land by Dale Merritt, PLS, dated Oct 2015 (11" x 17"), folded.*
2. *Soils Test Hole Location Plan, locations depicted on the above plan.*
3. *Soils Test Hole Logs, 2 pages*
4. *Truck Turning Diagram, 1 page.*

Disclaimer:
In preparing this assessment report, this office did not conduct water system analyses, water flow tests or other water quality or quantity studies. General observations of existing utilities were made on site; no research with the utilities' companies was performed.

The soils testing performed by Places Associates, Inc. was performed to assess the sub-surface condition of the site for its general suitability to support potential construction. Places Associates, Inc. does not provide geotechnical engineering, and any assessment of geotechnical properties should be viewed as general opinion. As noted previously, if this project is to proceed to construction, a qualified geotechnical engineer should assess the site and site soils for the proposed purpose.

Much of the research for the production of this report was performed using on-line resources and results are limited by the source of the information (Mass GIS – OLIVER), prior to additional design, permitting or construction initiation, on-site review and confirmation must be undertaken to accommodate any potential changes in mapping or site conditions.



LOCUS PLAN

(NO SCALE)

SURVEYOR'S REPORT

1. THIS PLAN IS A RESULT OF AN ENCUMBIDOLITE SURVEY TO RE-ESTABLISH THE PROPERTY BOUNDARIES OF A PARCEL OF LAND, SHOWN HEREON AS PARCEL A. PARCEL A IS PRESENTLY STANDING IN THE NAME OF THE INHABITANTS OF THE TOWN OF NORTHFIELD MASSACHUSETTS, AND IS LOCATED AT 93 MAIN STREET AT THE SOUTH SIDE OF THE INTERSECTION WITH SCHOOL STREET.

2. PARCEL A STANDS IN THE NAME OF THE INHABITANTS OF NORTHFIELD BY VIRTUE OF BEING THE REMAINDER OF A 10 ROD TOWN STREET.

3. UPON REVIEWING THE DEEDS AND PLANS OF RECORD IT APPEARED THAT NO DEED HAD BEEN CONSTRUCTED FOR PARCEL A. FURTHER INVESTIGATION REVEALED AN UNRECORDED SURVEY PREPARED BY F. DEANE AVERY ASSOCIATES, DATED: JULY 21, 1953, SHOWING SAID PARCEL A ALONG WITH A PORTION OF SCHOOL STREET. THIS PLAN REFERENCES THE LOT AS BELONGING TO "INHABITANTS OF NORTHFIELD, REMAINING LAND OF A 10 ROD TOWN STREET".

4. ACCORDING TO THE HISTORY OF NORTHFIELD, A BOOK PUBLISHED IN 1847, THE TOWN OFFICIALS OF "SQUAKEAGE" (THE ORIGINAL SETTLEMENT IN NORTHFIELD), ON MAY 28, 1684, LAID OUT ALL OF THE HIGHWAYS, IN SAID TOWN, AS BEING 10 RODS (165 FEET) IN WIDTH; THIS INCLUDED MAIN STREET (THEN CALLED THE TOWN STREET), AND SCHOOL STREET (THEN CALLED THE NORTH ROAD TO WARWICK).

5. PER SAID HISTORY OF NORTHFIELD:

"APRIL 1, 1797, IT WAS VOTED TO SELL THE LAND IN THE HIGHWAYS WHERE THEY ARE OVER [illegible] WIDE, UNDER THIS VOTE A [illegible] ON THE NORTH SIDE OF THE NORTH END OF THE MEADOW WAS SOLD MAY 13, 1797, BEING NOT PURCHASING THE WHOLE, IN THE WIDTH RULED TO WARWICK. THE WHOLE WIDTH, 2.5 TEN RODS, WAS REDUCED FOR THE DISTANCE OF TEN RODS FROM THE TOWN STREET, FOR A SCHOOL HOUSE OR OTHER USE, THICK FOR A SHORT DISTANCE, EVEN IN WIDTH, AND BEYOND THIS A RIGHT OF WAY ON THE SOUTH SIDE WAS SOLD TO CAPT. HUNT."

6. THE CONVEYANCE FROM SAID INHABITANTS OF NORTHFIELD TO CAPT. HUNT FOR THE LAND WITHIN THE NORTH LANE TO THE MEADOW WAS RECORDED IN FRANKLIN COUNTY REGISTRY OF DEEDS BOOK 13, PAGE 591. HOWEVER, NO RECORD OF THE CONVEYANCE FOR THE PROPERTY LOCATED WITHIN THE NORTH ROAD TO WARWICK (MAIN SCHOOL STREET) HAS BEEN FOUND IN THE FRANKLIN COUNTY REGISTRY OF DEEDS, HAMPSHIRE COUNTY REGISTRY OF DEEDS OR WITHIN THE TOWN RECORDS. THERE WAS ALSO NO ACCOUNTING WITHIN SAID TOWN RECORDS FOR THE DISTANCES DESCRIBED WITHIN THE HISTORY OF NORTHFIELD IN REGARDS TO THE PORTION OF THE ROAD TO BE RESERVED. HISTORICALLY THIS PARCEL HAS BEEN USED AS A SCHOOL AND ALSO AS A FIRE STATION SINCE 1953.

7. SCHOOL STREET IS CURRENTLY A 1953 COUNTY LAYOUT RECORDED IN FRANKLIN COUNTY HIGHWAYS BOOK 11 PAGE 19. THE WIDTH OF SAID HIGHWAY IS 54 FEET AT BOUND #10 ON MAIN STREET AND 66 FEET WIDE AT BOUND #1 AND 50 FEET WIDE THEREAFTER. IT IS BELIEVED THAT THIS FIRST SEGMENT OF SAID HIGHWAY IS LOCATED NEAR THE NORTHERLY SIDE OF THE ANCIENT 10 ROD HIGHWAY, LEAVING A STRIP OF REMAINING LAND LYING SOUTH OF SCHOOL STREET, AND SHOWN HEREON AS PARCEL A.

8. THE SOUTHERLY ABUTTER'S (KRAUTH REALTY MANAGEMENT LLC) CURRENT DEED, BOOK 4840 PAGE 180, DESCRIBES THE NORTHERLY BOUNDARY AS FOLLOWS:

"BOUNDED ON THE NORTH BY THE HIGHWAY AND LAND OF THE TOWN OF NORTHFIELD". HOWEVER THIS DESCRIPTION ONLY APPEARS IN BOOK 1110 PAGE 134, DATED APRIL 15, 1967 FROM TO THIS THE DESCRIPTION READ BEING BOUNDED "NORTH BY THE HIGHWAY". IT IS BELIEVED THAT THE ORIGINAL DESCRIPTION IS CORRECT AS THE DESCRIBED PARCEL'S NORTHERLY BOUNDARY IS THE ORIGINAL 10 ROD HIGHWAY'S SOUTHERLY BOUNDARY AND IS COINCIDENTLY ALSO THE LAND OCCUPIED BY THE TOWN. IT IS THEREFORE BELIEVED BY THE UNDERSIGNED THAT THE NORTHERLY BOUNDARY OF LAND N/F OF SAID KRAUTH REALTY MANAGEMENT LLC, IS A STRAIGHT LINE FROM MAIN STREET TO EAST STREET ALONG THE SOUTHERLY BOUNDARY OF THE ORIGINAL 10 ROD HIGHWAY.

9. THE SEWER EASEMENT LOCATION IS PER FRANKLIN COUNTY REGISTRY PLAN BOOK VOLUME 73 PAGE 64, LOCATION AS SHOWN IS APPROXIMATE ONLY.

10. ACCESS EASEMENT OVER THE EXISTING GRAVEL DRIVE, CROSSING THE SOUTHWEST CORNER OF PARCEL A, TO BE CONVEYED TO SOUTHERLY ABUTTER N/F KRAUTH REALTY MANAGEMENT LLC.

11. THE EASTERLY 150' +/- OF PARCEL A IS SHOWN ON THE NORTHFIELD ASSESSORS MAPS AS RUNNING WITH THE SOUTHERLY ABUTTER. THIS WAS FOUND TO BE IN ERROR. THIS AREA CONSISTS OF APPROXIMATELY 11,280 SQ. FT. (0.26 AC.).

LEGEND

- IRON PIN FOUND
- IRON PIN SET
- UNMONUMENTED POINT
- STONE / CONCRETE BOUND FOUND
- STONE BOUND SET
- UTILITY POLE
- SEWER MANHOLE
- FIRE HYDRANT

PLAN REFERENCES

MAIN STREET, 1942 ALTERATION, DATED SEPTEMBER 22, 1929, ALTERED NOVEMBER 4, 1942, STATE LAYOUT NUMBER: 3424
MAIN STREET, 1901 STATE LAYOUT, DATED SEPTEMBER 18, 1901, STATE LAYOUT NUMBER: 633
"PROPOSED RELOCATION OF PART OF SCHOOL STREET", DATED DECEMBER , 1953, RECORDED IN FRANKLIN COUNTY HIGHWAYS BOOK 11 PAGE 19.
UNRECORDED PLAN TITLED "PLAN SHOWING LAND OF INHABITANTS OF NORTHFIELD", BY F. DEANE AVERY ASSOCIATES, DATED JULY 21, 1953.
"PLAN OF SEWER EASEMENTS", DATED NOVEMBER, 7, 1988, RECORDED IN FRANKLIN COUNTY REGISTRY OF DEEDS BOOK 73, PAGE 64.

BAR SCALE

0' 40' 80' 120' 160' 200'

I HEREBY REPORT THAT THIS PLAN HAS BEEN PREPARED IN CONFORMITY WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS. I FURTHER REPORT THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS AND WAYS ALREADY ESTABLISHED AND THAT NO NEW LINES FOR THE DIVISION OF EXISTING OWNERSHIP OR FOR NEW STREETS OR WAYS ARE SHOWN.

PROFESSIONAL LAND SURVEYOR NO. 29665 DATE

PLAN OF LAND
LOCATED IN
NORTHFIELD, MASSACHUSETTS

PREPARED FOR

INHABITANTS OF THE TOWN OF NORTHFIELD

SCALE: 1" = 50' DWG: CLARK CHATTIN OCTOBER 12, 2015
DALE A. MERRITT P.L.S. P.O.BOX 327 VERNON, VT

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PLACES Associates, Inc.

Certified WBE

Soils testing performed on November 9, 2017 8:00 am to 12:30 pm., to the rear of the existing Northfield Fire Station off of School Street, see attached sketch.

Test Pit # 1

0'-2.5'	Gravelly Fill
2.5' – 5'	Fine Sandy Loam; Iron oxides @ 48" with distinct mottles; vitrified clay (?) sewer pipe at ± 4' broken by excavation.
5' – 10'	Fine Sandy Loam; few stones, massive in place, moist

No refusal encountered at 10'
Groundwater seepage at 8' after 2.5 hrs open.

Test Pit # 2

0' – 5'	Gravelly Fill and construction debris
5' -11.5'	Gravelly Fine Sandy Loam; 10YR/5/4; mottles high (iron oxides) and low chroma at 5'; massive in place, moist

No refusal encountered at 11.5'
Groundwater seepage at 8.5' after 2 hrs open.

Test Pit #3

0' – 2'	Gravelly Fill and construction debris
2' -5'	C-1; Gravelly Fine Sandy Loam; 10YR/5/4; mottles high (iron oxides) and low chroma at 5'; massive in place, moist
5' -11'	C-2; Gravelly Fine Sandy Loam; 10YR/5/4; mottles high (iron oxides) and low chroma at 5'; massive in place, moist, stones at 10%±

No refusal encountered at 11'
Groundwater seepage at 9.5' after 1:45 hrs open.

Test Pit #4

0' – 3.5'	Gravelly Fill and construction debris and cinders
3.5' -9'	C-1; Gravelly Fine Sandy Loam; 10YR/5/4; mottles high (iron oxides) and low chroma at 5'; massive in place, moist

9' -11' C-2; Silt Loam; 10Y/3/2; mottles low chroma at 5'; sidewalls smearing, massive in place, moist,

No refusal encountered at 11'
Groundwater seepage at 9' after 1:10 hrs open.

Test Pit #5

0' – 3.5' Gravelly Fill and construction debris and cinders

3.5' -11' Silt Loam; 10Y/3/2; mottles low chroma at 5'; sidewalls smearing, massive in place, moist, Sulphur smell.

No refusal encountered at 11'
Groundwater seepage at 8.5' after 1:00 hrs open.

Test Pit #6

0' – 1.5' A; Topsoil and Gravelly Fill mix

1.5' -3' Coarse to Med Sand; likely fill

3' -5.5' Silt Loam; 10Y/3/2; mottles low chroma at 5'; sidewalls smearing, massive in place, moist,

5.5' – 10 Fine Sandy Loam; 10YR/5/3, dense in place, moist; very few stones and pebbles.

No refusal encountered at 10'
Groundwater seepage at 7' after 20 mins open.

Test Pit #7

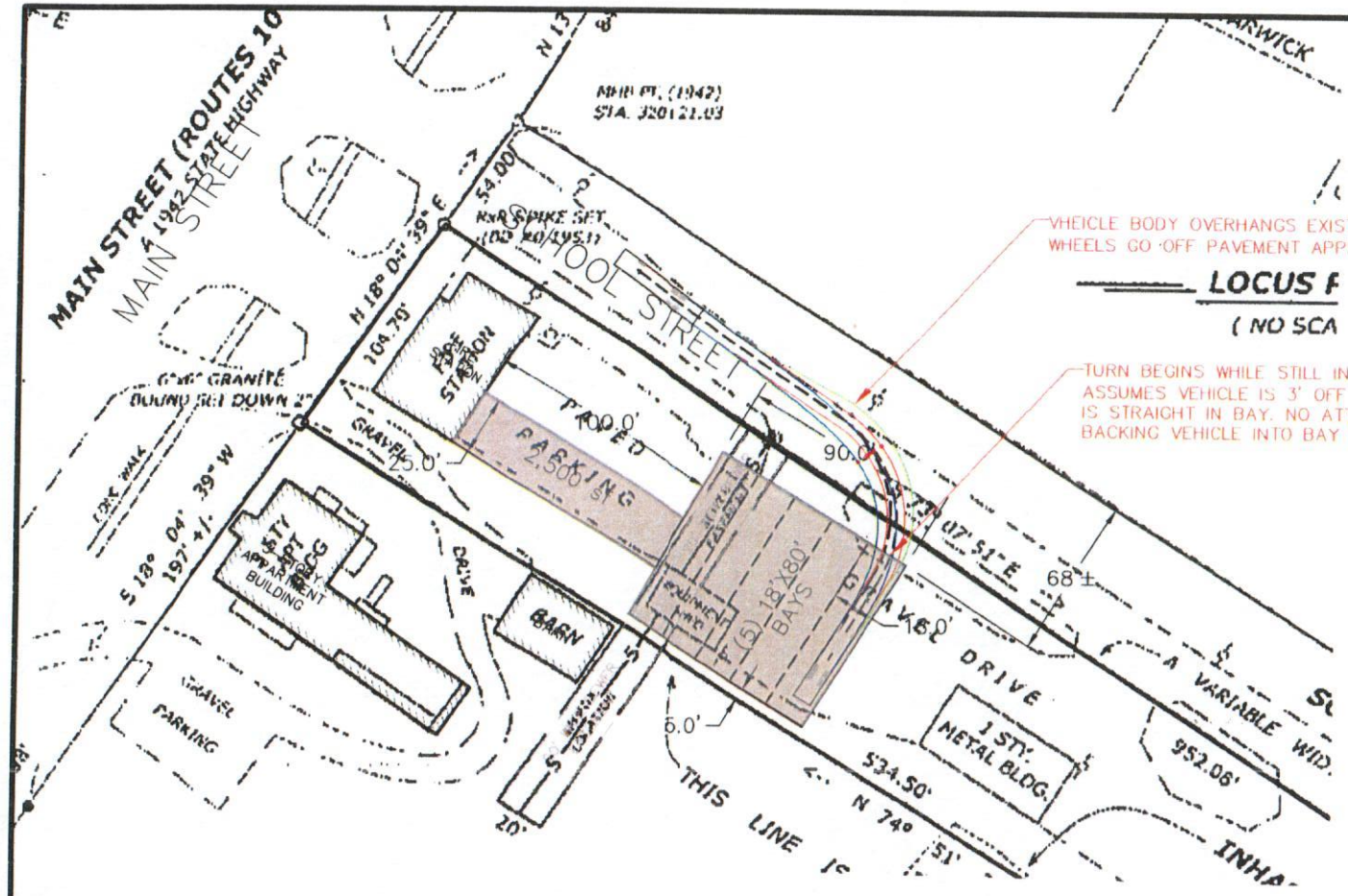
0' – 3.5' Gravelly, Coarse to Med Sand Fill

3.5' – 5' Broken Fill/Silt Loam

5' -9' Silt Loam; 5GY/4/1- very dark blue; ; mottles low chroma at 5'; sidewalls smearing, massive in place, moist,

9' – 11' Fine Sandy Loam; 10YR/4/6(matrix) ; mottles 10YR/4/4 Coarse Sand & 10YR/5/6- Very Fine Sand, moist; very few stones and pebbles.

No refusal encountered at 11'
Groundwater seepage at 8' after 20 mins open.



LEGEND

- FRONT TIRES
- REAR TIRES
- VEHICLE BODY

NOTE:
PLAN DEPICTS TURNING MOVEMENTS FOR THE NORTHFIELD LADDER TRUCK USING DIMENSIONS SUPPLIED BY THE TOWN WITH A 43.67' LENGTH AND 21.67' WHEEL BASE. SKETCH SHOWS EXIT PATH ONLY.

50' 0 50' 100'

BAR SCALE
1"=50'
CHECK GRAPHIC SCALE BEFORE USING

TRUCK-TURNING DIAGRAM

LOCATION: MAIN STREET & SCHOOL STREET
TOWN: NORTHFIELD, MASSACHUSETTS
PREPARED FOR:

TOWN OF NORTHFIELD

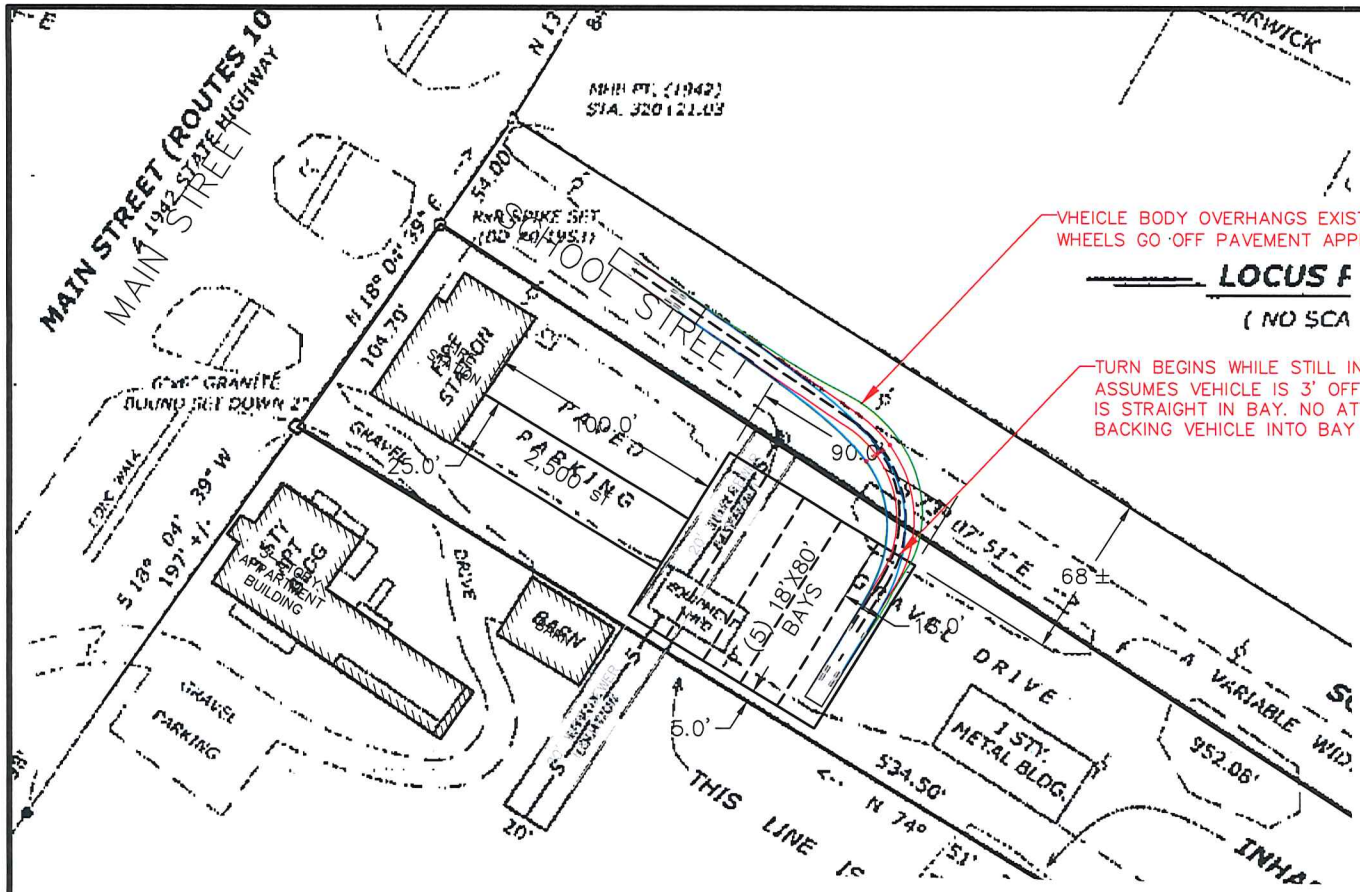
SCALE: 1"=50'
DATE: JULY 2019

PLACES Associates, Inc.

Planning
Landscape Architecture
Civil Engineering
Surveying

256 Great Road, Suite 4
Littleton, MA 01460
(978) 486-0334
www.placesassociates.com

PROJECT No.: 5381
PLAN No. 5381-TURN



LEGEND

- FRONT TIRES
- REAR TIRES
- VEHICLE BODY

NOTE:
PLAN DEPICTS TURNING MOVEMENTS FOR THE NORTHFIELD LADDER TRUCK USING DIMENSIONS SUPPLIED BY THE TOWN WITH A 43.67' LENGTH AND 21.67' WHEEL BASE. SKETCH SHOWS EXIT PATH ONLY.

50' 0 50' 100'

BAR SCALE
1"=50'
CHECK GRAPHIC SCALE BEFORE USING

SHEET TITLE

LOCATION: MAIN STREET & SCHOOL STREET
TOWN: NORTHFIELD, MASSACHUSETTS
PREPARED FOR:

TOWN OF NORTHFIELD

SCALE: 1"=50' DATE: JULY 2019

Places Associates, Inc.
Planning, Landscape Architecture, Civil Engineering, Surveying
256 GREAT ROAD, SUITE 4
LITTLETON, MA 01460
978.486.0334 Ph.
978.486.0447 Fax
places@placesassociates.com

PROJECT No.: 5381 PLAN No. 5381-TURN